Medicine and metaphor

Epidemics of yellow fever in Havana, Barcelona, and Buenos Aires, 1821–1901

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Abstract

Fever is a disease of heat and burning – the body's natural thermostat going awry. Yellow fever, a viral infection transmitted by the bite of the *Aedes aegypti* mosquito, remained an intensely feared and poorly understood disease until 1881, when Cuban physician Carlos Finlay announced it was transmitted by an insect vector. This essay traces the zigzagging peregrinations of yellow fever, from its origins in West Africa to Cuba (via the transatlantic slave trade), then from Cuba to Spain (via global commercial routes), and later southward to Buenos Aires (via Brazil). It examines the multiple meanings of the disease – be they mythic, metaphoric, or ideological – particularly through its entanglements with class, race, geography, and empire. Focusing on three port cities stalked by yellow fever throughout the nineteenth century – Havana, Barcelona, and Buenos Aires – it explores how artists imagined and represented the disease, elucidating the historical situations out of which they sprang, as well as offering a compelling example of what Susan Sontag theorizes as the uses and abuses of illness as metaphor. By mapping artistic depictions of yellow fever from different periods and places, the essay engages with the disease's intimate links with globality, inequality, and empire.
Keywords: yellow fever, global health, medical humanities, Latin America

In her 1978 treatise *Illness as Metaphor*, Susan Sontag offers an illuminating cultural history of the symbolic constructions of illness in Western culture, from the metaphorical uses of tuberculosis in the nineteenth century to the military metaphors associated with cancer in the twentieth (Novillo-Corvalán 2015: 12).

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Sontag wrote the book while she was undergoing breast cancer treatment in the late 1970s and used it as a platform to launch an acerbic attack against the 'stigmatization of people who have cancer' (Sontag 1991: 97). Consequently, Sontag called for an urgent de-mythicization of illness, stressing, 'Illness is *not* a metaphor, and the most truthful way of regarding illness – and the healthiest way of being ill – is the one most purified of, most resistant to, metaphoric thinking' (1991: 3).

Yet as Sontag herself already suspected, it remains virtually impossible to strip metaphorical thinking from illness, not least language, which is inherently metaphorical. At the same time, she later came to understand that not all metaphors are as harmful and punitive as she once thought. Consequently, in *Aids and Its Metaphors* (1989), the sequel to *Illness as Metaphor*, Sontag retracted her previous claim, admitting that 'of course, one cannot think without metaphors', though cautiously warning that there are 'some metaphors we might as well abstain from or retire' (1991: 91). As Anne Hunsaker Hawkins puts it, 'even if we agree with Sontag that illness should be stripped of metaphor, myth, and symbol – and not everyone will agree with her about this – it is an expectation that few of us would live up to (1999: 23). In that sense, there is no reason to presuppose that writing about illness should therefore rule out a type of conceptualization reliant on metaphoric thinking. However, this is not to say that metaphors of illness should be taken at face value, nor that they should be injudiciously or inadequately employed, or that Sontag's lesson has been overlooked, but rather that metaphoric tropes and motifs, as Hunsaker Hawkins puts it, 'may be enabling as well as disabling' (1999: 23).

If, as Sontag suggests, the metaphoric imagination is inextricably tied to the slippery meanings attached to a specific illness – metaphors that often persist long after a cure or treatment has been found – then it is paramount not only to examine the mythologies of paradigmatic diseases with rich historiographies like TB and cancer, but also to turn our attention to overlooked or neglected diseases that are likewise implicated in the types of mythologized discourse that Sontag provocatively attacked and deconstructed.

One disease that I propose to examine here is yellow fever. Transmitted by the bite of the *Aedes aegypti* mosquito, yellow fever remained an intensely feared and poorly understood disease until 1881, when Cuban physician Carlos Finlay announced it was transmitted by an insect vector. This essay traces the zigzagging peregrinations of yellow fever, from its origins in West Africa to Cuba (via the transatlantic slave trade), then from Cuba to Spain (via global commercial routes), and later southward to Buenos Aires (via Brazil). It

examines the multiple meanings of the disease – be they mythic, metaphoric, or ideological – particularly through its entanglements with class, race, geography, and empire. Focusing on three port cities stalked by yellow fever throughout the nineteenth century – Havana, Barcelona, and Buenos Aires – it explores how artists imagined and represented the disease, elucidating the historical situations out of which they sprang, as well as offering a compelling example of what Susan Sontag theorizes as the uses and abuses of illness as metaphor. By mapping artistic depictions of yellow fever from different periods and places, the essay engages with the disease's intimate links with globality, inequality, and empire.

Methodologically, the essay is in dialogue with the recent global 'turn' in medical humanities scholarship, particularly since, over the last two decades, there has been a marked shift from a 'quasi-Western canon […] in which the diversity, sophistication, and richness of different cultural traditions was uncomfortably marginalised' (Hooker and Noonan 2011: 79) to a more outward-looking, geographically globalized approach (Hooker et al. 2023: 14). Other relevant studies have advocated for a more diversified and epistemologically pluralized medical humanities, positing that the discipline has gone through several distinct 'waves', transitioning from 'mainstream' to 'critical' and now gaining momentum as a 'global' field, in an attempt to transcend its former Anglophone roots (Whitehead and Woods 2016: 4). This essay is part of this growing multidisciplinary field seeking to push the medical humanities in dynamic new directions by articulating new theoretical approaches to decolonize, diversify, and internationalize the field.

Within the Latin Americanist field, I am also reliant on the work of literary scholars and historians of medicine who have explored the metaphorical and sociocultural histories of health and disease as a 'new subfield of Latin American historiography' (Armus 2003: 2), calling for a renewal and recalibration of these histories by 'becoming increasingly attentive to the region's role in global history' (Espinosa 2013: 799). Such critical contestations decentre restrictive Western-centric historiographies of health and disease by pivoting to the 'periphery' in medicine and innovation (Espinosa, Stepan, Cueto and Palmer), thus offering more complex and nuanced reconfigurations of previously omitted or misrepresented diseases and scientific trajectories. Finally, in reconfiguring the cultural histories of yellow fever, another important conceptual framework I utilize in this essay is Mary Louise Pratt's concept of the 'contact zone' (2008), which is particularly pertinent for rethinking cultural encounters within asymmetrical power relations in

colonial contexts where 'epidemic diseases primarily served the interests of the colonizers rather than the colonized (Espinosa 2008: 5).

The febrile imagination

Though not officially labelled a 'marginalized disease' by the World Health Organization (WHO), yellow fever affects marginalized populations, posing a serious public-health threat, particularly in endemic regions of Africa and South America, due to its potential for large outbreaks and high mortality rates. Prompted by an outbreak of the disease in Angola in 2016, science journalist Declan Butler warned of yellow fever's imminent danger, as the species of mosquito that transmits it has 'reemerged in densely populated tropical and subtropical cities where many people are unvaccinated' (Butler 2016: 155). As temperatures rise, mosquito populations proliferate, which means that the disease is likely to spread more widely to non-endemic regions, like Europe, North America, Australasia, and parts of Asia. As Christian McMillen points out, 'Human, animal, and insect movement are critical in the spread of epidemics and pandemics' (2016: 6), attesting to the fact that the resurgence of yellow fever is linked to factors associated with modernity, like rising temperatures, urbanization, deforestation, and modern travel. As for the *Aedes aegypti* mosquito itself, an elegant black and white creature adorned with a lyre-shaped pattern on its abdomen, it transmits not only yellow fever but also newer viruses like dengue fever, Zika virus, and chikungunya. Moreover, as Sheldon Watts remarks, 'present-day knowledge recognizes some thirteen species of mosquito capable of carrying the yellow fever virus and does not rule out the possibility that it might also be harbored by certain tropical ticks' (1997: 216).

The word 'fever', from the Latin noun *febris*, is associated with the sensation of overheating in the body, as noted in the *Oxford English Dictionary*. In classical mythology, fever is linked to the Roman goddess Febris, a deity associated with heat, who held a paradoxical role as both divine healer and harbinger of disease, especially the seasonal malarial fevers that often hit Southern Europe. According to Leonard Wilson, 'fever has been since antiquity the paramount sign of disease in the body' (1993: 382). A universal disease, almost every person at some time suffers from a fever, indicated by a rise in body temperature. Hippocratic medicine thought that diseases, especially fevers, were caused by a disturbance in the four fluids or humours of the body: yellow bile, black bile, blood, and phlegm (Wilson 1993: 382). Accordingly, the 'maladies of the tropics' drew on miasmatic theories rooted in Hippocratic teachings, equating heat with putrescence, giving

off bad airs that bred terrible fevers' (Porter 2002: 90). Therefore, prior to Carlos Finlay's scientific breakthrough, yellow fever was widely believed to be caused by miasma, based on the idea that inhaling foul air or vapours from decaying organic matter made people sick. Malaria, derived from the Italian words *mala* and *aria*, meaning 'bad air', was historically attributed to miasmata (Porta 2016). The name became a misnomer after British physician Ronald Ross discovered that, like yellow fever, it was transmitted by a blood-sucking mosquito. Both malaria and yellow fever were believed to spread through fomites like clothing, sheets, and other personal articles that sick patients had used (McCarthy 2001: 1772). Etymologically, fomite comes from the Latin *fōmes*, meaning tinder – combustible material that sparks fire – metaphorically suggesting something that fuels and ignites a fever and infection.

The epithet 'yellow' that modifies the noun 'fever' refers to one of the disease's most visible and alarming symptoms: jaundice, which causes yellowing of the skin and of the whites of the eyes. This yellowish hue is a result of liver damage from the virus, where the liver's inability to process bilirubin leads to its accumulation in the body. The long-standing historical association between yellow and illness is also suggested by the traditional maritime yellow flag or 'Yellow Jack', a portentous banner that functioned as a warning sign of sickness and quarantine for a wide range of diseases, not just yellow fever, but also cholera, typhus, influenza, and smallpox, among others. At the end of *El amor en los tiempos del cólera* (1982) [*Love in the Time of Cholera*], Gabriel García Márquez uses the ominous yellow flag as a bleak reminder of the continuous threat posed by cholera, the great pestilence that thwarts the lovers' reunion and drives the plot forward from start to finish.

Modern medicine classifies fever into two main types, those caused by bacterial or viral infections, with vector-transmitted diseases like malaria and yellow fever grouped within the viral type (Law and Martin 2020). By linking yellow fever to an insect vector, the disease fell under the umbrella of the new science of tropical medicine, which arose out of the desire to conquer peoples and places in Asia, Africa, and the Americas (Macleod 1988: 1–2). Colonial powers would see tropical diseases like yellow fever as 'an evil, an enemy, a challenge that had to be conquered in the name or progress' (Porter 1999: 465). Tropical medicine, however, an imperial discipline founded by British physician Sir Patrick Manson, is a problematic designation. According to Franziska Hommes et al., 'the term slips between its geographical delineation and its imperial heritage, even as its use persists, including in the names of prestigious institutions' (2021). Similarly, Paul Farmer calls for a critical use of 'tropical medicine' to avoid

reproducing imperialist ideologies, because the term, he asserts, wrongly implies a 'geographic' rather than a 'social topography' (2010: 173; see also MacLeod 1988; Arnold 1996).[1] According to historian Nancy Stepan, 'within European representations, tropical nature stood for many different values – for heat and warmth but also for a dangerous and diseased environment; for superabundant fertility but also for fatal excess; for species novelty but also for the bizarre and deadly; for lazy sensuality and sexuality but also for impermissible racial mixings and degeneration' (2001: 21). In Virginia Woolf's debut novel *The Voyage Out* (1915), which is set in South America, its main heroine, Rachel Vinrace, dies of an incurable fever that baffles the doctors and echoes these negative and fatalistic colonial-era anxieties about travel, empire, and disease.

Moreover, in the mythology surrounding yellow fever, the colour black is another loaded signifier associated with the disease, hence its designation *vómito negro* or 'the black vomit', which, in some cases, manifested itself in the disease's final stage, as the body vomited black liquid and expelled blood from the mouth, nose, and eyes. Given that yellow fever originated in West Africa and was exported to the Americas by the transatlantic slave trade, the spread of the disease became more than a health crisis, posing a direct threat to the imperial enterprise. The unsuspected mosquito vector travelled aboard the trading ships carrying enslaved African peoples, withstanding long transatlantic voyages by breeding in barrels and water pools aboard the trade vessels (Oldstone 2020: 90–92).

Yellow fever and empire

From the seventeenth century onwards, yellow fever emerged as one of the great New World plagues striking coastal cities in South and Central America and along the southern seaboard of North America (Cueto and Palmer 2015: 77). It is unclear when yellow fever first reached Cuba, but the disease is believed to have been 'endemic in Havana since before the British occupied the city in 1762' (Espinosa 2008: 2). Therefore the spread of yellow fever worldwide may be best understood not as a single narrative of disease, but rather, as Mark Harrison notes, as the knotted global entanglements of commerce and empire (2012). Yellow fever's zigzagging voyage from Africa to the Americas and then to Europe amounted to a 'real threat to worldwide commerce', as ships unknowingly transported the deadly mosquito from port to port (Birn 2003: 158). Since empire was coterminous with commerce, its global trade networks facilitated the exportation of yellow fever. Entangled with the politics of empire, the

search for a cure was motivated not so much for protecting the lives of local people in colonized places, as for preserving imperial dominance and sustaining expansionist agendas.

Ironically, the microbiological breakthroughs of Louis Pasteur in France and Robert Koch in Germany in the latter half of the nineteenth century, which identified microbes as the root causes of disease, only added to the confusion about the cause of yellow fever. Driven by the new bacteriological methods, researchers frantically embarked on the search for the elusive yellow fever 'germ' in the three regions where the disease was endemic: Brazil, Mexico, and Cuba (Delaporte 1991: 66). US Army doctor George Miller Sternberg, for example, even proposed the not farfetched hypothesis that yellow fever, like cholera, was transmitted through contaminated water (Delaporte 1991: 50–52). But the path of bacteriology was the red herring in the search for the etiology of yellow fever for the simple fact that microbes are not parasites. Therefore scientists were applying the wrong scientific concepts and methods, those suited for bacteriology, rather than the more appropriate field we now recognize as parasitology.

This highlights the fundamental incompatibility between the Pasteurian epistemological model in microbiology and the emerging framework of parasitology. It was, in part, this scientific disconnect that led to Finlay's mosquito hypothesis being largely ignored or dismissed when he first presented it at the International Sanitary Conference in Washington, DC, where he faced a torrent of scepticism (Birn 2003: 159). Fellow scientists dismissed the preposterous idea that a tiny mosquito could be the culprit behind a fatal disease such as yellow fever. When these scientists asked questions, Finlay would refer to the dozens of glass tubes filled with mosquitos and eggs he had assiduously collected in his laboratory in Havana. Frustratingly, despite having a mosquito-strewn laboratory, Finlay was unable to produce definitive scientific evidence to validate his theory. Consequently, it remained incomplete and unproven until Major Walter Reed, a US Army physician, and his team of doctors took it seriously and successfully validated it in 1901.

With the outbreak of the Spanish–American war in 1898, yellow fever became a major concern of the US Army as thousands of soldiers were dying of the disease. Historians Mariola Espinosa and Mónica García argue that the US invasion of Cuba was, essentially, 'a war against disease' (Espinosa 2008; García 2019: 5). When Spain was swiftly defeated and Cuba became an independent protectorate under the US, the latter doubled its efforts to vanquish yellow fever, swiftly appointing a Yellow Fever Commission to investigate the disease (Desowitz 1997: 127). The commission was made up of four doctors: Major Walter Reed, an

army pathologist and bacteriologist who led the team, and Majors James Carroll, Aristides Agramonte, and Jesse Lazear (McCarthy 2001: 1772). The team tested Finlay's mosquito theory on volunteers, including Carroll and Lazear, conducting experiments that revealed that an incubation period was necessary before a mosquito could transmit yellow fever after biting an infected person. Tragically, Lazear contracted the disease during these trials and died.

The successful validation of Finlay's mosquito hypothesis had two main consequences. First was the establishment of the US as Cuba's neo-imperial power after Spain's calamitous exit. By wiping out yellow fever from the island, the US was able to achieve its imperialist aims, facilitating its long-term goals, especially as the Caribbean and Central America had become 'a sphere of strategic geopolitical interest' (Williamson 1992: 438). The second consequence was the successful completion of the hazardous Panama Canal operation, a spectacular feat of engineering aimed at bridging the Atlantic and Pacific Oceans (Oldstone 2020: 114). The Panama Canal was the brainchild of French engineers who had previously succeeded in building the Suez Canal in Egypt. Work on the project began in the 1880s, but it was soon abandoned after thousands of workers unexpectedly died of malaria and yellow fever (Oldstone 2020: 114; Birn 2003: 253). Without a doubt, the conclusive validation of Finlay's mosquito theory drastically changed the geopolitics in the region by giving America the upper hand in implementing effective measures to eradicate mosquitoes and subsequently advancing the completion of the canal for its own economic and political benefit (McCullough 1977: 405–426).

Despite the fact that the discovery of yellow fever was the result of Cuban–American scientific collaboration, a heroic imaginary was constructed in the US around Walter Reed, attributing the discovery solely to him and omitting Finlay's major contribution (Espinosa 2013: 804). Correspondingly, Cuban historians have tended to downplay the role of Reed, brandishing a heroic portrait where 'Finlay was no longer just the author of a revolutionary theory but also the embodiment of Martí's ideals' (Delaporte 1991: 125–127).

French historian François Delaporte is suspicious of these national mythologies because they wrongly suggest, he contends, that scientists work in a vacuum, highlighting cases of individual genius rather than scientific collaboration. He demonstrates in painstaking detail that neither Carlos Finlay nor Walter Reed worked in isolation, but were part of global scientific networks of transmission and exchange. Finlay was indebted to Patrick Manson's work on the importance of mosquitoes in the transmission of elephantiasis (also known as filariasis), while Reed's experiments drew on Ronald Ross's proof

that mosquitoes transmit malaria, a discovery which, in turn, was indebted to Manson. While Delaporte is right to resist romanticized heroism narratives, at the same time we cannot turn a blind eye to the many ambiguities and asymmetries of power that form the basis of the US military and economic domination of Cuba, which helps to explain the construction of hagiographical narratives of Finlay as expressions of anti-colonial resistance within the broader context of the imposition of the Platt Amendment, which placed Cuba under the protection of the US.

In that sense, Cuban sanitarians decried the omission of Finlay as an attempt to deny that 'their compatriot and they themselves were as much members of the global community of public-health researchers as were their US counterparts' (Espinosa 2013: 804). Steven Palmer recounts how Cuban ophthalmologist Juan Santos Fernández leapt to Finlay's scientific defence through a form of '"scientific Arielismo," that advocated for a Hispanic medico-scientific revival that would be built on alternative networks' (2010: 96). As Cueto and Palmer have further explained, it meant that despite being situated in a colonized and, later, underdeveloped periphery, Latin American doctors such as Finlay and his team of scientists were engines of innovation and were able to 'carve a niche for themselves in international networks of knowledge power' (2015: 1, 5). Similarly, Mariola Espinosa affirms that 'insisting on and pressing for the recognition of Carlos Finlay as the central figure who identified the mosquito vector of yellow fever was a way for Cubans to declare their triumph and their independence from the United States despite being bound by the terms of the Platt Amendment' (2008: 119).

Finally, the case of Finlay challenges unidirectional centre–periphery models of scientific influence, especially at a time when a hegemonic Anglo-American framework of network-based and institutionalized research has supplanted multipolar efforts and diverse international networks (Palmer 2010: 103). Ultimately, Latin American scientists aimed to redefine the field of tropical medicine, questioning its perception as a merely imperial enterprise, as well as showing that it could be driven by local knowledge and innovation rather than domination by colonial or neocolonial powers (Coutinho 2003: 77).

The Barcelona 1821 epidemic

During the nineteenth century, the city of Barcelona was hit by various epidemics, including outbreaks of cholera and yellow fever (Ortiz García 2017: 94). As a medieval walled city, it faced serious hygiene and sanitation

challenges that greatly contributed to the uncontrolled spread of disease. At the same time, as a 'city where Europe meets the Mediterranean' (Illas 2012: 81), Barcelona consolidated itself as one of Spain's leading maritime arteries, along with the port of Cadiz, which, since the Conquest, had absorbed a large volume of traffic from the Americas (Illas 2012: 81). As we have learnt from historian of disease Mark Harrison, plagues and trade, medicine, and commerce are closely intertwined. Spain's transatlantic commercial seafaring route from Havana to Barcelona brought yellow fever to the Mediterranean city in the summer of 1821, claiming around 20,000 lives, a sixth of the total population (Chastel 1999). Yellow fever, an unknown malady previously believed to be confined to tropical zones, had alarmingly emerged in a major European city, as well as other Spanish cities, including Málaga, Tortosa, and Palma de Mallorca.

An unusually hot and humid summer had conspired to create the ideal conditions for the *Aedes aegypti* mosquito to thrive and multiply (Hoffmann 1964: 2). When an epidemic was declared in August 1821, emergency measures were immediately taken in neighbouring France. The monarchic France of Louis XVIII swiftly imposed a strict land and sea quarantine on French ports and along the Pyrenean border to avoid contagion, which was rigorously patrolled by French infantry. In fact, Louis XVIII exploited the Spanish health crisis for political gain, using it in 1823 as a pretext for an opportunistic invasion. As the staunch defender of *le systéme monarchique*, Louis XVIII was determined to increase French and Bourbon influence worldwide, which the Spanish intervention had given a significant boost, while also stirring nationalist sentiments at home (Mansel 1981: 396–397, 404). In addition to the yellow fever epidemic, Spain was mired in economic and political turmoil. The recent loss of its South American colonies during the Wars of Independence in the early 1810s had left the treasury bankrupt, and declining confidence in Ferdinand VII's government fuelled anti-absolutist sentiments. This unrest culminated in the 1820 Revolution that saw the implementation of a liberal constitution (Fehrenbach 1970: 68). In April 1823, Louis XVIII's royal troops, previously stationed along the *cordon sanitaire* during the yellow fever epidemic, crossed the Pyrenees and released Ferdinand VII from Madrid, thereby restoring the Spanish monarchy. As Philip Mansel notes, 'the France of Louis XVIII, as befitted a monarchical age, was a guardian of European monarchy', a far cry from the 1790s, when France had been the exporter and upholder of republics (1981: 396).

In a more constructive spirit of cooperation, however, the French Interior Ministry asked the Académie de médecine to appoint a French Commission,

which consisted of five physicians who would both provide assistance to the sick in Barcelona and investigate the causes of yellow fever, then referred to as a 'maladie inconnue' (Hoffmann 1964: 2, 16). Additionally, two nuns from the Saint Camillus religious order were to accompany the French Commission, which added spiritual values to the romanticized nationalistic mythology that would form around them. This is evident in the lithograph 'Arrivée des Soeurs de charité à Barcelone' ['Arrival of the Sisters of Charity in Barcelona'], engraved by Wattier, where the sisters are depicted as saintly figures, their white wimples resembling gigantic halos (image in Hoffmann 1964: 33).

Among the members of the commission was André Mazet (1793–1821), a young, energetic surgeon from Grenoble in south-eastern France. Despite his youth, Mazet was the possessor of valuable clinical experience through his study of the terrible yellow fever epidemic that hit Cadiz in 1819. Mazet conducted these observations alongside fellow physician Étienne Pariset, who was also part of the French Commission. Together, Mazet and Pariset became known within French medical circles as the co-authors of a book titled *Observations sur la fièvre jaune, faites à Cadix* (1820) which, despite lacking scientific evidence, featured five fascinating lithographic plates by artist Charles Philibert. The images depict a fevered body in decline, showing the alarming signs of yellow fever in a young man's face, a sudden progression from rude health to the prototypical yellow fever symptoms: jaundice and hemorrhage. Above all, they strive to convey the awfulness of the disease, which is presented through a progressive sequence of physical decline: first the man becomes jaundiced, then his eyes turned red, and after that he is portrayed in stark, dramatic detail, lying in a bloodstained bed splattered with vomit, bile, and coagulated blood.

At a time when scientific knowledge about yellow fever was limited and speculative, the illustrations served not only as medical observations, but also as cultural artefacts that reflected the prevailing fears and panic about the disease. Above all, they reveal how French physicians in the 1820s tried to make sense of a frustratingly ambiguous and elusive disease by showing its effects on a perfectly healthy person. Given André Mazet's medical reputation as a yellow fever expert, his sudden death from the disease in Barcelona was swiftly turned into a sanctified narrative of self-sacrifice and heroism. As part of Louis XVIII's politicization of Spain's health crisis, Mazet was posthumously celebrated in the French parliament in 1821, where he was declared 'martyr de l'humanité' (Guitard 1961: 204).

Faith McLellan observes that the depiction of the physician as 'hero' runs in parallel with the rise of scientific medicine in the nineteenth century, which

Figures 1–4. Lithographs by Charles Philibert, 'Observations sur la fièvre jaune, faites à Cadix, en 1819 par MM. Pariset et Mazet' (1820). Courtesy of Wellcome Collection.

brought about a marked shift in the portrayal of physicians in literature and the visual arts, evolving from a stereotypical comic figure to a heroic character (1996: 458). These heroic portrayals, however, as Steven Wilson points out, were not simply conceived as neutral expressions, but rather as 'political, social, and cultural techniques employed to accomplish multiple aims' (2022: 236). Similarly, Martin Kemp posits that 'no [medical] image ever exists within a purely neutral field, no matter how hard its originators may think they are trying' (1999: 15). Within the France of Louis XVIII, the politics of disease gained heightened importance during a period of fervent nationalism, as France's emergence as a geopolitical power elevated the role of the arts in shaping heroic narratives that lauded the 'triumphs' of French medicine in Barcelona.

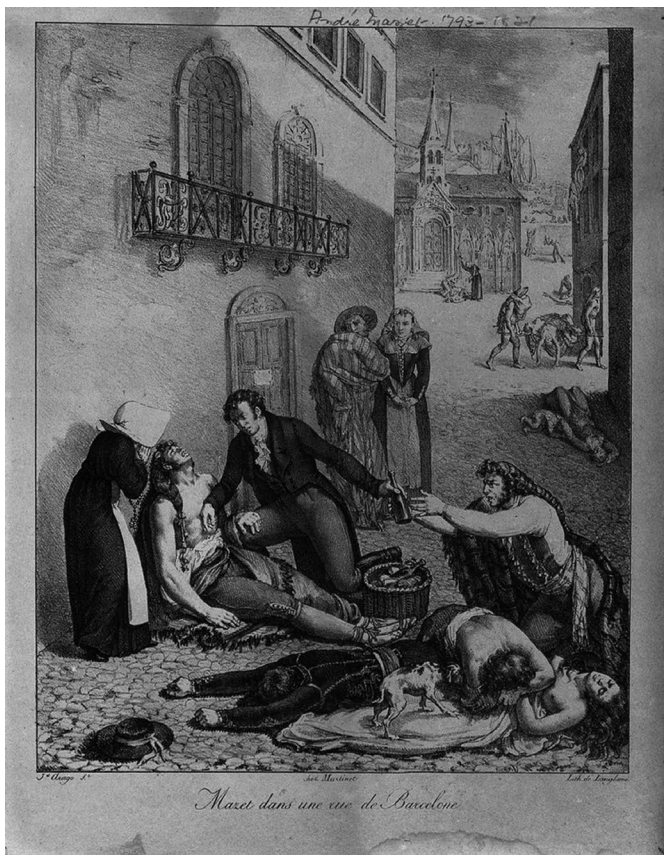

Figure 5. Lithograph by Pierre Langlumé after Jacques-Etienne-Victor Arago, 'André Mazet Tending People Suffering from Yellow Fever in the Streets of Barcelona' (1821). Courtesy of Wellcome Collection.

For example, in a 1821 lithograph by Langlumé and Arago, the energetic André Mazet is depicted as a martyr of the people, selflessly tending to the sick in Barcelona's plague-ravaged streets and distributing remedies in bottles, which are conveniently stored in a wicker basket placed next to him. Linked to the paraphernalia of cures, quackery, and treatments of the time – most of which would have been used as purgatives in an attempt to expel the fever from the body – the bottles add a quasi-empirical element to the lithograph. Consequently, France propagated a hagiographical mythology of André Mazet's heroic sacrifice as an ideologically charged response to the health crisis, a narrative not at all dissimilar to the glorification of Walter Reed by the American Commission, which also took place within the shadow of war, especially if we consider the painting by American artist Dean Cornwell. In this painting, Reed stands at the centre, dressed in full military uniform, presiding triumphantly over the historic moment when two members of his team validate Finlay's mosquito theory through inoculation. Finlay appears on the left, wearing a dark coat, his hand placed over his chest, clearly moved by the experiment, yet positioned at the margins of the scene, suggesting both praise but also a slight sidelining of his role (image in Delaporte 1991: 3).

Other French artistic responses to the Barcelona epidemic include a striking lithograph by the French painter and engraver Nicolas Eustache Maurin. It depicts a vast tableau of interconnected scenes, with each scene capturing the age-old tropes universally associated with plagues: exodus, quarantine, divine punishment, chaos, burial, and redemption. It features all the emblematic figures essential to bring these themes to life: the madonna or *mater dolorosa* grieving her dead child, gravediggers carrying corpses, citizens fleeing the city, priests administering last rites to the sick, and a funeral procession.

Three crucial points should be made about the lithographs. First, the French lithographers did not witness the epidemic first-hand and the Barcelona they portray is not based on any specific map or recognizable part of the city, despite the titles and inscriptions suggesting otherwise. Instead, their meaning is entirely allegorical. Second, while the Langlumé-Arago lithograph of the much-lauded Mazet singularizes the yellow fever epidemic by displaying the popular pseudo-scientific concoctions in bottles, the lithograph by Maurin, on the contrary, universalizes it by offering a more predictable portrait of plagues across time and space. Through its universality, Maurin's lithograph echoes Renaissance plague art, such as the iconic prints by the Italian engraver Marcantonio Raimondi (after Rafael), especially 'Plague in Phrygia' (1515–1516). In both, we see the same pattern of interconnected scenes, including the central mother–child motif.

Figure 6. Lithograph by Nicolas-Eustache Maurin, 'Barcelone en 1821' (1821). Courtesy of L'Arxiu Històric de la ciutat de Barcelona.

However, in Marcantonio's version, the mother is dead while her child, unaware of the tragedy, attempts to nurse from her breast, thus illustrating the prevalence of theories of contagion, as a passerby quickly intervenes by pulling the child away from the infectious corpse of the deceased mother.

Third, it should be noted that there is not a single doctor in Maurin's lithograph, clearly a striking and perplexing omission given the French political context and the deification of André Mazet. By erasing the heroic figure of the physician and substituting it instead with religious figures with enormous crucifixes and emphatic gestures, Maurin conveys a more ambiguous ideological stance that appears to have resisted the propagandistic narrative of Louis XVIII. Overall, we can conclude that both lithographs offer paradoxical responses to the epidemic, yet they do not necessarily seek to create literal or accurate visions in a strict

Figure 7. Engraving by Marcantonio Raimondi after Rafael, 'Plague in Phrygia' (1515–1516). Courtesy of Wellcome Collection.

sense but rather allegorize the ideological background of France's opportunistic military intervention in Spain.

The Buenos Aires 1871 epidemic

Yellow fever broke out in the South American port city of Buenos Aires in consecutive waves of epidemics in 1852, 1858, 1870, and 1871. The 1871 outbreak was by far the deadliest, claiming an estimated 14,000 lives, which accounted for approximately 8 per cent of the entire population and disproportionately affected the poor (Cueto and Palmer 2015: 78). The image that emerges of the Argentine capital is that of a feverish, sick city, and 'ailing city' – as Diego Armus puts it (2011) – that ostensibly contradicts the ironically named 'Buenos Aires' and its semantic associations with healthiness and salubrious 'good' airs. 'The city stank', writes Mark Harrison, 'and its soil and water were said to be so

polluted as to be beyond salvation' (2012: 117). Harrison's emphasis on the city's filth and repugnant stench suggests that yellow fever was still believed to be a miasmatic disease, a theory that would not be fully debunked until the advent of Carlos Finlay's mosquito theory and its subsequent validation by Walter Reed nearly three decades later, though clearly not soon enough to avert the public-health disaster that afflicted the Argentine capital.

The epidemic of 1871 occurred during a period of significant economic growth in Argentina marked by a 'meteoric development' in the export sector and an accompanying surge in immigration (Rodriguez 2006: 2). After most Spanish colonies gained independence in the first decades of the nineteenth century, the Northern European powerhouses (especially Britain) responded swiftly to this geopolitical change by forging trade relations with the young republics as part of a concerted plan of global economic expansion (Novillo-Corvalán 2018: 30). Jennifer French has shown how the European 'scramble for Latin America' was complexly tied up to a neocolonial capitalist project that rapidly supplanted imperial Spain as the foremost exploiter of Latin America's natural resources (2005: 7). Consequently, the accelerated urbanization and Europeanization of the port city of Buenos Aires (soon to be reinvented as the 'Paris of South America') went hand in hand with British economic penetration during a historical period in which the country experienced the unprecedented phenomenon of mass European migration (Novillo-Corvalán 2018: 36).

Julia Rodriguez states that the proportion of foreign-born individuals in Buenos Aires, which was already considerable at 36 per cent in 1855, had rocketed to 52 per cent by 1895, primarily Italians or Spanish immigrants (2006: 24). Consequently, immigrant groups, especially the poorest, were stigmatized and blamed for spreading the disease, given that the crisis in the city exacerbated class divisions and the widening gap between rich and poor. A large proportion of the Italian immigrant population lived in squalid urban infrastructure with lack of sanitation, which exacerbated the spread of diseases like cholera and tuberculosis. During this period, cramped slum tenements known as *conventillos* sprawled near the city centre, which were denounced by the elites as 'social pathologies' that encapsulated all the 'negative by-products of urbanization' (Rodriguez 2006: 27). The diminutive noun *conventillo*, meaning 'small convent' in Spanish, is an *argentinismo*, which James Scobie describes as patio-style buildings for non-elite groups, typically migrants, with 'a single street entrance, a number of rooms opening off interior patios, latrines at the rear of the building, and no exterior windows except for a few barred ones on the street' (1974: 148).

The transmission of yellow fever owed to a multiplicity of factors, including the rise of steam navigation, economic expansion, and the recent War of the Triple Alliance (1864–1870), a brutal, uneven conflict fought between Paraguay and the tripartite military powerhouse of Argentina, Brazil, and Uruguay. Harrison notes that 'the armies of all the protagonists had been ravaged by cholera and at the end of the war it was joined by yellow fever' (2012: 115). Within Buenos Aires, the president of the Argentine Republic, Domingo Faustino Sarmiento (in office 1868–1874) and his administration encouraged mass European migration – aptly captured in the famous slogan 'governar es poblar' [to govern is to populate] – yet failed to implement the necessary sanitation infrastructure to support the rapidly growing metropolis, contributing to the unprecedented devastation caused by the yellow fever outbreak of 1871 (Novillo-Corvalán 2018: 36).

Worse still, the civic authorities initially downplayed the severity of the epidemic in an effort to conceal their ineptitude and unpreparedness. It was only through the relentless efforts and advocacy of the press – led by the lawyer and journalist Evaristo Carriego (grandfather of the poet Evaristo Carriego) – that news of the galloping epidemic eventually reached the nation (Quiroga Mecheo 2015: 10–11). The press also played a crucial role in mobilizing local communities to swift action, including the founding of the Comisión Popular de Salubridad Pública (Popular Commission of Public Health). Presided by lawyer and mason José Roque Pérez, the Popular Commission immediately took over as the de facto public-health service. When affluent citizens fled the sick city for the countryside, including the president of the republic, members of the commission, among them the indefatigable fifty-six-year-old Roque Pérez, steadfastly remained to care for the sick, especially the forgotten urban poor in the crowded *conventillos*, who were left to die of the disease or were forcibly evicted from their homes by the local authorities for fear of contagion.

Notoriously, the eminent Uruguayan artist Juan Manuel Blanes – celebrated for his pastoral scenes of gauchos and patriotic subjects – decided to immortalize the great plague of Buenos Aires, making the heroic Roque Pérez a central figure in the composition. Blanes's painting also drew on a true story dubbed by the press 'dantesque' (Quiroga Micheo 2015: 16). According to reports, on 17 March 1871, an officer patrolling the *conventillos* on Balcarce Street discovered a young woman, later identified as Italian immigrant Ana Bristiani, dead on the floor of her room with her infant son still trying to nurse. The scene was reported to the police and the child was taken into care.

Titled *Un episodio de fiebre amarilla en Buenos Aires* ['An Episode of Yellow

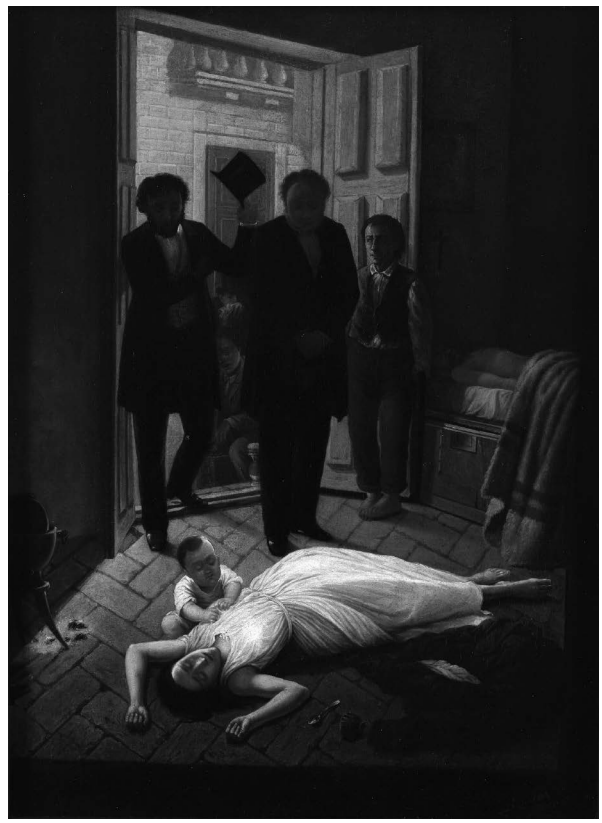

Figure 8. Oil painting by Juan Manuel Blanes, *An Episode of Yellow Fever in Buenos Aires* (1871). Courtesy of Wellcome Collection.

Fever in Buenos Aires'] (1871), Blanes's painting transmutes what is, essentially, a tabloid snippet into a hyper-stylized artwork. That said, the painting retains the key ingredients of the original story, namely the *conventillo* setting, the mother–child motif, and yellow fever imagined as a disease of poverty and deprivation, not unlike the depictions of tuberculosis described by Sontag in *Illness as Metaphor*: 'thin garments, thin bodies, unheated rooms, poor hygiene, inadequate food' (1983: 15). Most significantly, Blanes superimposed two prominent figures of the Popular Commission into the composition: lawyer Roque Pérez and physician Manuel Gregorio Argerich, both of whom contracted the disease while caring for the sick and tragically died. However, it must be emphasized that neither Roque Pérez nor Argerich had actually visited the *conventillo* on Balcarce Street; that is, their presence was entirely fabricated by Blanes. While, in essence, this aspect of the artwork was fictitious, it was entirely believable to the citizens of

Buenos Aires because the Popular Commission had selflessly cared for the sick when the civic authorities did nothing.

Closer scrutiny of the painting reveals that Blanes could not resist the temptation of recasting the woman as a saintly victim and Roque Pérez and Argerich as the patriotic heroes. The emphasis on her phantasmal body dressed in a white, almost phosphorescent, tunic creates a chiaroscuro effect that draws the viewer's gaze towards her. Like the child in Raimondi's depiction of the plague, her restless infant tries to nurse from her breast, though in this case nobody intervenes, not so much for fear of contagion but out of a sense of guilt. By the door stand two imposing figures in smart suits, the lawyer and physician who have arrived too late at the tragic scene, the elder (Roque Pérez) with his hands clasped in a gesture of resignation, while the younger (Argerich) takes off his hat as a sign of respect. Both men have their gazes fixed on the mother–child duo, setting up a further contrast between rich and poor, high and low, those below (on the floor) and those above (by the door). Less prominent details in the background are also worth paying attention to. By the *conventillo*'s open door stands a barefoot squalid young boy dressed in rags looking away from the tragic scene and staring at the smartly dressed men. On the right-hand side, the blurred, amorphous corpse of a man (the woman's husband?) lies forgotten on a bed. Finally, outside the room, there is the indistinct figure of a man who is covering his face with a handkerchief, most likely for fear of contagion, wrongly believing that yellow fever, like tuberculosis, was an airborne disease.

Laura Malosetti Costa (2005) suggests that the Sarmiento administration used the painting as a convenient tool to divert attention from its disastrous handling of the health crisis. In so doing, she contends, it shifted public focus away from its catalogue of failures, highlighting instead the collective themes of heroism and solidarity. Exhibited to the Argentine public with great fanfare in the foyer of Buenos Aires's opulent Teatro Colón (opened in 1857) in the aftermath of the epidemic, Blanes's iconic painting gave immediate visibility to the horrors of yellow fever, capturing the public imagination as a cathartic ritual for a society deeply shaken by trauma. Hundreds of bereaved *porteños* formed long queues every day to get a quick glimpse of the sensational masterpiece.[2]

Like André Mazet in Barcelona and Major Jesse Lazear in Cuba, both Roque Pérez and Argerich were martyred by yellow fever. However, unlike their French and American counterparts, they were not acting on behalf of an official medical commission but were part of an informal mechanism of social participation engaged in acts of charity and solidarity in an uncertain time of profound crisis. Political manoeuvring by the Sarmiento government reduced a locally mobilized

community of citizens into a cathartic narrative that turned collective suffering into myth. Still, even if Blanes was complicit in mythologizing the Buenos Aires epidemic, he simultaneously challenged the sublimated political narrative with a morally constituted humanitarian message of social injustice that exposed the city's elitism and stark societal divisions between rich and poor. In short, the spectre of yellow fever haunted the city's interstitial spaces, with an emphasis on the *conventillo* as the specific locus of disease, a liminal zone that exposed the tensions between centres and margins, inclusion and exclusion, tradition and modernity, and civilization and barbarism.[3]

Conclusion

The great scientific breakthrough that a mosquito was the agent of transmission of yellow fever marked a turning point in the understanding of the disease, influencing public-health policies worldwide – including the development of a vaccine by South African virologist Max Theiler in 1937 (Watts 1997: 218) – while instantly wiping out outdated fomite and miasmatic theories. Finlay's mosquito paradigm, however, was framed by the tense political backdrop of America's intervention in Cuba, which provided contested ground for the scientific discovery, leading to the clash between Finlay and Reed over scientific credit, as both Cuba and the US elaborated hagiographical narratives of their exalted physician–heroes. When American historians elided or sidelined Finlay's contribution, Cuban scientists and sanitarians denounced what they perceived as another instance of US imperialism, resulting in the construction of an anti-colonial rhetoric around Finlay that placed him in the honorable company of nationally canonized figures such as José Martí and that proved to be a bulwark to the development of scientific knowledge in the periphery.

In a different form of imperialism, but with convergent military priorities, the France of Louis XVIII similarly exposed the politicization of yellow fever, which resulted in the opportunistic subordination of a declining imperial power, Spain, as part of France's emerging global imperial ambitions during a fluid and chaotic historical period. Artistic depictions created in response to the Barcelona epidemic added cultural fodder to the ideological strategies of Louis XVIII's regime, which exploited the crisis by instilling patriotic sentiments that elevated physician André Mazet as France's national hero. In the case of Buenos Aires, apart from laying bare societal cleavages between rich and poor, Blanes's painting spectacularly construed an invented myth of the epidemic that a deeply traumatized society eagerly adopted as a cathartic symbol of memory

and redemption, while those in power capitalized on its rhetoric of nationalism and emotionally charged theme elevating physicians as heroes and depicting the universalist mother–child trope.

Overall, the voyage of yellow fever from its origins in West Africa to Cuba, then from Cuba to Spain, and later southward to Buenos Aires, has revealed that epidemics across time and space share overlapping meanings and political consequences that are central to the understanding of the complicated entanglements between disease, empire, and society. As we have seen, prior to Finlay's discovery, few would have suspected that a puny mosquito, exported by imperialism, could be responsible for some of the worst epidemics across both sides of the Atlantic over the course of nearly three centuries.

Notes

1 Another problematic aspect of the history of tropical medicine is the 'relative absence of Latin America from the story', as Julyan Peard has observed (1996: 108). She argues that despite the fact that Latin America has experienced some of the most catastrophic epidemics of the last two centuries, the bulk of the research has predominantly focused on the British, French, and Dutch colonial empires. Therefore Latin America, she contends, deserves a more thorough examination in this subfield of research, one that adopts both global and local perspectives through more comprehensive understandings of these health challenges.

2 Furthermore, Malosetti Costa analyses the creative genesis of the painting, focusing on an earlier draft where the woman was portrayed as a robust working-class immigrant, with the infant grotesquely nursing from her breast, while the men at the door were simply anonymous bystanders. She suggests that in the final virtuosic painting Blanes romanticizes the woman, transforming her into a beautiful and attractive body dressed in a classic white dress (Malosetti Costa 2005: 54–56).

3 Literary depictions of yellow fever include a novel by the Anglo-Argentine writer and naturalist W. H. Hudson. Entitled *Ralph Herne*, this novel was written in English and first serialized in the London magazine *Youth* in 1888. It was published in book form in 1923, shortly before Hudson's death (Lencina 2022). It tells the story of a newly qualified English doctor who emigrates to Buenos Aires in the late nineteenth century and witnesses the yellow fever epidemic in the summer months of 1871. Like the heroes of the Popular Commission, Hudson's selfless protagonist stays to treat and tend the sick. The novel is told from the perspective of an omniscient third-person narrator, giving Hudson the

necessary distance of a detached observer, or even a historian, who chronicles the events with meticulous detail, even if he did not witness the epidemic first-hand. Another literary portrait of the epidemic is Jorge Luis Borges's 1929 poem 'Muertes de Buenos Aires: La Chacarita' [Deaths of Buenos Aires: La Chacarita], an elegiac lament that similarly addresses the interplay between disease and marginality, reflecting the city's socio-economic pressures and the hasty construction of a new cemetery in the Chacarita area of Buenos Aires, as the city grappled with an overwhelming number of dead bodies. A train service luridly known as 'tren de la muerte' [train of death] was also launched, transporting coffins in scenes eerily evocative of Charon's ferrying souls to the underworld.

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