

Health and Welfare of European Seamen:

Colonial Indian Port Cities in the Long Nineteenth Century

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Short Abstract

This thesis examines the health, welfare and sanitary regulation of the European seamen in the British naval and merchant fleet in the nineteenth century. The aim, in this study, is twofold. First, to see how and to what extent maritime medicine helped shape the understanding of health and hygiene in the tropics. The agency of European troops and military surgeons in shaping public health in British India has generated a field of historical enquiry, but little is known about the impact of European seamen and maritime medicine. Second, to expand our current understanding of imperial medicine in a British colony through a study of mobile British subjects and health policies across various imperial sites. The thesis argues that seamen's health in transit and in imperial port cities was instrumental in the development of tropical hygiene and sanitary reform as an indispensable mechanism for empire-building. Through a study of these go-betweeners who linked the metropole (Britain) and the periphery (colonies), and the role of imperialism and philanthropy in shaping public health, this thesis broadens our understanding of how the political, medical, and civilian personnel of the British Empire governed poor and vulnerable white imperial subjects.

Long abstract

European seamen had an important role in extending Britain's imperial frontiers as far as South and Southeast Asia, the West Indies, North America and the African coast, defending the homeland and overseas territories from the invasion of rival empires, securing trade routes, and carrying out trade and commerce. Historians of British maritime health in the nineteenth century have argued that the government's efforts to prevent disease on board ships was far from adequate, or successful. Not only was maritime medicine chronically underfunded, merchant services followed almost none of the health regulations set by the naval authorities in the first half of the century. It was alleged that the British government treated seamen's health with seriousness mainly when the country was under threat from epidemic diseases, seamen were seen as propagators of disease from the colonies to Britain. It would seem beyond dispute that infected seamen disseminated the deadliest of diseases to different communities more than any other group. In the absence of adequate curative medicine and surgery, sanitation and disciplining were the most effective preventive measure against diseases such as cholera and plague, but their implementation across naval and merchant vessels was uneven throughout the nineteenth century.

Seamen's benefactors argued that habitual insobriety, indiscipline, and debauchery made seamen highly vulnerable to disease in transit and in port cities in tropical regions. Many of Britain's colonial outposts like Calcutta and Bombay were considered insanitary spaces that harboured contagious, venereal, epidemic diseases. For Christian seamen thought to be at peril in these places, Christian missionaries operated institutions that doubled as refuges for distressed seamen and as instruments for moral education. The British colonial government undertook a number of reforms in the second half of the nineteenth century, chiefly in response to complaints about seamen's precarious employment, living and health

conditions, the risk of them bringing lethal diseases into Europe, and anxiety about seamen's behaviour catalysing European racial degeneration.

The issues outlined above have not been dealt exclusively in the historiography of the impact of imperialism and race on public health and tropical hygiene in South Asia. The aim, in this study, is twofold. First, to see how and to what extent maritime medicine helped shape the understanding of health and hygiene in the tropics. The agency of European troops and military surgeons in shaping public health in British India has generated a field of historical enquiry, but little is known about the impact of European seamen and maritime medicine. Second, to expand our current understanding of imperial medicine in a British colony through a study of mobile British subjects and health policies across various imperial sites. It argues that seamen's health in transit and in imperial port cities was instrumental in the development of tropical hygiene and sanitary reform as an indispensable mechanism for empire-building. With this aim, the present work examines the health and sanitary problems of British naval and merchant seamen arising from their life on board ships and in colonial Indian port cities. Studying these go-betweeners who linked the metropole (Britain) and periphery (colonies), and the role of imperialism and philanthropy in shaping public health can broaden our understanding of how the political, medical, and civilian personnel of the British Empire governed poor and vulnerable white imperial subjects.

Chapter 1 examines the intersection of maritime and tropical medicine in an age of increased imperial responsibility. It shows the importance of seamen's health for the development of the knowledge of disease and medicine in the nineteenth century, which can be understood through a study of the treatises and articles written by British naval surgeons and physicians, and reports of assemblies and conferences. By looking at knowledge produced in Britain, in transit, and in the India, this chapter describes how the understanding of tropical diseases

emerged as a medical field constructed around the question of the impact of climate on the European body, and the development of climate- and body-specific preventive medicine.

The next chapter looks at medical writings on the prevention of diseases associated with long journeys such as scurvy, the necessity of sanitary reform, the improvement of diet and ventilation on board ships, and the medical guides provided to ship captains. It analyses the state of seamen's health in Indian port cities, based on the writings of British medical practitioners at naval and general hospitals for Europeans in India. It explores the implications of empirical observation and experiment on seamen's diseased bodies in Britain, on board ships, and in India on the development of tropical hygiene.

As the health of seamen in port cities became important for ecclesiastical, naval and urban authorities, a number of reform initiatives came into force. Taking these reforms into consideration, chapter 3 argues that moral reform of seamen acted as a substitute for hospital medicine in nineteenth-century India as part of a global Christian mission of protecting seamen's health and morality. Christian missionaries became seamen's moral guardian and tried to regulate their behaviour through temperance and acceptable forms of entertainment. They often collaborated with state officials and sanitary reformers in curbing the problems of desertion, destitution, and crimping, which were a reason for seamen's ill health and death. The chapter will largely focus on the operation of Sailors' Homes as the nodal points of health and behavioural reform.

The consumption of liquor and its adulterated forms was recognised as a detrimental influence of European seamen's morals and physical health. Addressing this issue, chapter 4 argues that regulation of seamen's drinking was influenced by the contemporary developments in imagining drunkenness as a social and a health problem, anti-vice activism, and recognition of adulteration as a serious threat to health. It begins with an analysis of the

meanings of drinking and drunkenness in a transnational context, emphasising various debates in Britain and India about the necessity for regulation. Then it plods though the fight of British colonial officials against drunkenness and adulteration of liquor. It will enquire if India's image as a diseased and dangerous space had a role to play in the colonial state's management of the liquor problem, public health, and law and order.

Chapter 5 examines how seamen were sought to be protected from cholera on board ships and in Indian sailortowns, so that they did not jeopardise maritime commerce and carry cholera back to Europe. Though ship's passengers have been given the maximum attention in the literature on nineteenth-century epidemic diseases, seamen were no less important as victims and vectors of cholera. The chapter analyses the medical resources mobilised for preventing and treating cholera through the century, and water and sewage management on board ships and in Indian port cities. The ideas of sanitation, contagion, and quarantine, it argues, cannot be understood unless one studies the agency of the most mobile section of people.

As this thesis shows, maritime health intervention in the tropics was a tool of imperial politics as well as a means of understanding the physiological impact of tropical climates and experimenting with tropical hygiene. Through an analysis of the transnational nature of the regulation of seamen's wellbeing, it has developed a conceptual framework for understanding the connected emergence of tropical and maritime hygiene, and the importance of sanitary reform to empire-building. Ships were a productive site for medical practitioners to closely examine the impact of climate upon a large number of people in transit between temperate and tropical regions. The effect of environment was felt most acutely during oceanic journeys as the ship's path crisscrossed various climatic zones. This made ships both hazardous and a favourable place to study and test medicine. The knowledge of symptoms, nutrition, morbidity and climate expanded the understanding of the aetiology of disease. The spaces of the

sailortown were reorganised by health reform as the colonial state and missionaries provided proper food and accommodation for seamen, closed illegal drinking dens, revoked licences of unscrupulous owners who sold adulterated or low-quality drink, and general cleanliness. These measures did not reduce seamen's illness and mortality to the extent expected. Preservation of the sanctity of racialised bodies was arguably a strong motivation behind these measures. Indian port cities in particular were known as places of pestilence and nodes of disease dispersion in the nineteenth century.

This study has expanded the knowledge of seamen's health in a global maritime history context by focusing on imperial non-state actors alongside the government. The regulation of seamen's bodies by the British colonial state, Christian missionaries and indigenous people in India has allowed us to comprehend the complexity of imperial patronage, paternalism and benevolence as evidenced through various welfare measures such as the Sailors' Home, temperance societies and libraries for seamen, floating chapel for spreading the message of the gospel, and establishment of hospitals. The study of missionaries, the most puissant advocates for better treatment of the men who enabled Britain to 'rule the waves', has highlighted the significance of Asian maritime spaces to their global proselytising agenda. Thus, it has added a new dimension to existing studies of the construction of identity, cultural imperialism and networks of mobility in the eighteenth and nineteenth-century that had so far focused solely on the Atlantic and Pacific regions. The study of Indian sailortowns has outlined a new approach to the history of global sailortown culture. Its treatment of the transnational life of itinerant European seamen in the context of tropical regions and Indian port cities has developed our understanding of how the diseases of 'warm climates' shaped seamen's behaviour in Indian sailortowns.

In this thesis, seamen embody the imperial bond that connected India and Britain. As an operative concept in maritime history, sailorhood has reflected and set the context for the

study of maritime and tropical hygiene. More importantly, the British Empire's engagement with European seamen revises the conventional approach to them as a group of subordinates whom the government segregated from colonial society and often bracketed with the problematic class of Asian and white subalterns. On the contrary, seamen were looked upon as imperial agents who were unable to take responsibility for their bodies and needed full public health support. Such patronage was not uniform across the British Empire for want of the means of effective regulation. The complexity of this medical intervention explored in this work, however, has illustrated the importance of seamen to the consolidation of imperialism and tropical maritime hygiene.

More than the vicissitudes and impact, the dynamics of collaborative sanitary and moral regulation across the metropole and periphery, have been the subject of this study. The actions of medical practitioners, naval authorities, sanitary commissioners, and missionaries in preserving the health of a mobile group of people, for whom the centre-periphery or empire-colony divides had little significance, demonstrate the importance of maritime health and hygiene in the making of the imperial tropics. Maritime hygiene affected not only the spaces of ships, but also the sanitation and regulation of urban areas frequented by seamen. The thesis has recovered some narratives of seamen's agency in their interactions with the administrative authorities. Although seamen's personal memoirs are hard to find, numerous sketches of their character and activities in the press helped create a sense of their lifeworld, with special emphasis on their health and moral wellbeing. The regulation of their behaviour by municipal and state authorities, alongside local police and charitable organisations, to maintain social stability was woven into the power dynamics of the British Empire.

Through its analysis of Calcutta as colonial port city, this thesis shows how urban spaces were constructed, reconstructed, perceived and regulated in the colonial context. Seamen's presence effected major changes in the character of the Calcutta sailortown and the

focus of urbanisation. Calcutta was by far the most important port city from the beginning of eighteenth century until the third quarter of the nineteenth century when Bombay emerged as the major commercial hub of British India. The shift in maritime and commercial traffic to Bombay did not reduce Calcutta's political importance as a context for the reproduction of British society and culture in the colony. The spaces of the sailortown were shaped by a negotiation of power between seamen and colonial and naval authorities. The imagination of sailortown was spatially connected with Lal Bazar and Garden Reach – two areas located the closest to anchorages, and full of taverns and boarding houses. The sailortown was not specifically segregated from the rest of the city; its expanse was delimited by a non-negotiable moral boundary imposed by the colonial state's ideologue. The characterisation of seamen's behaviour as bellicose and contemptible, and assigning an unsympathetic image to the places they frequented, established social limits on the acceptability of seamen as members of imperial ruling class. Seamen subverted official policies against disorder and illegal activities such as trade in illicit articles of consumption, and this discourse of the problematic seamen has remained entrenched in most representations, other than those produced by missionaries that claimed seamen's missions were successful.

The thesis acknowledges that hygiene did not necessarily improve seamen's capacity for labour, and the imperial biopolitical agenda of manning the maritime services with healthy seamen was not fulfilled. Within these limitations, however, the development of maritime hygiene throughout the nineteenth century was entangled with certain ideas of the tropics, tropical hygiene, sanitary environment of lived spaces, race, and imperialism. The resulting hygienic and sanitary innovations were products not only of imperial medicine, but also of transnational connection of people, places and ideas. In this way, seamen were central to the history of imperial and colonial public health.

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INTRODUCTION

> Exposure to the sun, immorality, indifferent housing and clothing, the excessive indulgence in unripe fruit and poisonous drink, whilst on shore; together with the use of diseased meat and brackish river water, on board ship; are the principal causes of the crime, sickness, and death which demoralize and decimate this, the most improvident and reckless class of our countrymen.[1]

In one sentence, *The Friend of India* newspaper expressed their utmost concern for the diseases and high mortality rate among British seamen in nineteenth-century India. Like many others of its kind, the report was replete with dramatic references to the effects of the unrelenting tropical sun, seamen's penchant for liquor and unsafe sex, and the failure of the naval authorities and merchant shipping companies to ensure proper employment conditions (such as proper diet and timely salary) for seamen. The correspondent was also unhappy with how the Government of India treated British-origin seamen in comparison with soldiers. The government's sanitary policy was centred largely on military cantonments and European residential spaces till the mid-nineteenth century.[2] Other Europeans and Indians were brought under public health initiatives mainly after the 1850s. Despite their large numbers, conspicuous presence in port cities, and significant role in

[1] *The Friend of India*, August 30, 1866, 4.

[2] Better known as the 'enclavist' argument, first put forward by Radhika Ramasubban in 1988, this view was endorsed by David Arnold and Anil Kumar. The basic argument was that the colonial state neglected the health of Indians and overlooked vernacular forms of medicine in its health policy. Radhika Ramasubban, "Imperial Health in British India, 1857-1900," in *Disease, Medicine, and Empire: Perspectives on Western India and the Experience of European Expansion*, eds. Roy MacLeod and Milton Lewis (London and New York: Routledge, 1988), 38-60; David Arnold, "Touching the Body: Perspectives on the Indian Plague, 1896-1900," in *Subaltern Studies V: Writings on South Asian History and Society*, ed. Ranajit Guha (Delhi: Oxford University Press, 1987), 55-90; Anil Kumar, *Medicine and the Raj: British Medical Policy 1835-1911* (New Delhi: Sage, 1998).

commerce and empire-building, European seamen in British naval and merchant services were in this latter category.

Seamen had an important role in pushing Britain's imperial frontiers as far as South and Southeast Asia, the West Indies, North America and the African coast, defending the homeland and overseas territories from the invasion of rival empires, securing trade routes, and carrying out trade and commerce. Protection of these chief operatives of imperialism from disease and debility should have been a major priority for the British Empire. Referring to treatises on health, historians have said that the 'earliest known work in English on tropical diseases is concerned with ships and sailors.'[3] Diseases jeopardised military manoeuvres leading to defeat, and killed fairly well-trained personnel, which had a huge economic cost. Reports of deaths from an unseen enemy like disease rather than in a glorious battle could be demoralising, and could dissuade potential soldiers from enlisting into the Army and the Navy. Diseases also signalled the military authorities' lack of planning and preparation to handle fatal emergencies.[4] Tropical fevers, poor diet, indiscipline and lack of hygiene were identified by the early nineteenth century as major problems in maintaining Britain's maritime empire.[5] The mitigation of d diseases that originated and prevailed outside Europe evolved over several centuries and was based on extensive observation and experimental intervention.

In his writings about the 'dangers of the sea' in the late Georgian period, the naval historian Michael Lewis mentioned rupture, lunacy and drunkenness as 'occupational

[3] Andrew Balfour and H.H. Scott, *Health Problems of the Empire: Past, Present and Future* (London: W. Collins, 1924), 31. They further said that the influence of public health policies on the British Empire can be gained the best from the sanitary history of the Navy, the Mercantile Marine, and the Army, in connection with overseas colonies in particular.
[4] Erica Charters, *Disease, War, and the Imperial State: The Welfare of the British Armed Forces during the Seven Years' War* (Chicago: University of Chicago Press, 2014), 4.
[5] Pratik Chakrabarti, *Medicine and Empire: 1600-1960* (Basingstoke: Palgrave Macmillan, 2014), ch. 1.

disorders,' and scurvy, yellow fever, typhus and smallpox as the major diseases.[6] In a statistical report in 1867, the causes of the death of merchant seamen included a wide array of diseases (smallpox, typhus, dysentery, diarrhoea, cholera, ague, yellow fever, rheumatism, syphilis, scurvy, delirium tremens, dropsy, phthisis, apoplexy, heart disease, bronchitis, pneumonia, asthma, lung disease, enteritis, liver disease, debility and cold), alongside injury, suicide, sunstroke, murder, and drowning. The data represented a mortality rate of 2.58 percent among non-combatant merchant seamen in 1866, higher than the death of 1.264 percent of officers and 1.549 percent of soldiers in the army stationed outside the Britain.[7] The data on death by disease were not uniformly reliable as surgeons at the time did not follow a single, standard method of classifying diseases. There is no denying, however, that maritime service was hazardous with a high probability of untimely death.

Historians of British maritime health in the nineteenth century have argued that the government's efforts to prevent disease on board ships was far from adequate. Not only was maritime medicine chronically underfunded, merchant services followed almost none of the health regulations set by the naval authorities in the first half of the century. The Merchant Shipping Acts of the 1850s and 60s had little impact on merchant seamen's health, as was evident from the Bord of Trade's survey in 1870.[8] It was alleged that the British government treated seamen's health with seriousness mainly when the country was under threat from epidemic diseases; seamen were seen as propagators of disease from the colonies to Britain. It would seem beyond dispute that infected seamen

[6] Michael Lewis, *A Social History of the Navy 1793-1815* (London: George Allen & Unwin, 1960), ch. 13.
[7] "Births and Deaths of British Subjects at Sea," *Twenty-Ninth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England* (Abstract for 1866) (London: George E. Eyre and William Spottiswoode, 1868), xxx-xxxi.
[8] Tim Carter, *Merchant Seamen's Health, 1860-1960: Medicine, Technology, Shipowners and the State in Britain* (Woodbridge: Boydell Press, 2014), 44.

disseminated the deadliest of diseases to different communities more than any other group. In the absence of adequate curative medicine and surgery, sanitation and disciplining were the most effective preventive measure against diseases such as cholera and plague, but their implementation across naval and merchant vessels was uneven throughout the nineteenth century. Blaming seamen for their insanitary living conditions, wrote Dr Heber Smith, resulted from their 'reckless habits' and 'vagrant propensities'. They needed to be protected by 'sanitary science' if the health and lives of the common people were to be saved.[9]

Several leading newspapers, physicians and government officials in Britain and India were critical of the general neglect of seamen's health. As Rev. J. Charles fulminated at the half-yearly general meeting of the Sailors' Home Society in Calcutta in 1839, the neglect was surprising since 'to them Britain owe[d] her naval glory; through them, the fame of her arms, of her science, of her literature, and of her politics ha[d] reached the utmost bounds of the earth.'[10] Seamen's benefactors, like Rev. Charles, argued that habitual insobriety, indiscipline, and debauchery made seamen highly vulnerable to disease in transit and in port cities in tropical regions. Many of Britain's colonial outposts like Calcutta and Bombay were considered insanitary spaces that harboured contagious, venereal, epidemic diseases. For Christian seamen thought to be at peril in these places, Christian missionaries operated institutions that doubled as refuges for distressed seamen and as instruments for moral education. The British colonial government undertook a number of reforms in the second half of the nineteenth century, chiefly in response to complaints about seamen's precarious employment, living and health conditions, the risk

[9] Heber Smith, "Sailors as Propagators of Disease," *Public Health Reports and Papers 1873* (New York: Hurd and Houghton, 1875), 448.
[10] "Sailors' Home Society," *Calcutta Monthly Journal and General Register for 1838* (Calcutta: Samuel Smith & Co, 1839): 97.

of them bringing lethal diseases into Europe, and anxiety about seamen's behaviour catalysing European racial degeneration.

The issues outlined above have not been dealt exclusively in the historiography of the impact of imperialism and race on public health and tropical hygiene in South Asia. The aim in this study is twofold. First, to see how and to what extent maritime medicine helped shape the understanding of health and hygiene in the tropics. The agency of European troops and military surgeons in shaping public health in British India has generated a field of historical enquiry, but little is known about the impact of European seamen and maritime medicine. Second, to expand our current understanding of imperial medicine in a British colony through a study of mobile British subjects and health policies across various imperial sites. The thesis argues that seamen's health in transit and in imperial port cities was instrumental in the development of tropical hygiene and sanitary reform as an indispensable mechanism for empire-building. Through a studying of these go-betweeners who linked the metropole (Britain) and the periphery (colonies), and the role of imperialism and philanthropy in shaping public health, it broadens our understanding of how the political, medical, and civilian personnel of the British Empire governed poor and vulnerable white imperial subjects.

The importance of seamen in British imperial history

Britain emerged as the world's leading maritime empire in the late eighteenth century. Free trade, expansion of market economy and innovations in nautical technology in the early nineteenth century pushed the development of the nation's imperial and commercial ventures. Integral to the imperial supremacy was the Royal Navy – the 'shield of

empire'.[11] British naval historians have long recognised the importance of naval and merchant seamen to the history of imperialism.[12] They have regarded seamen as invaluable in the conquest of territory, securing new markets, safeguarding trade routes, and constructing a national and imperial identity. Steven Gray argues that the Royal Navy's impact on British imperialism extended beyond defence; it influenced 'labour forces, indigenous societies, imperial networks, and imaginations of empire.'[13] The Navy's function changed in the early-to-mid-nineteenth century, when the Empire changed its focus from conquest to upkeep. Naval battles were scaled down to reduce expenditure, particularly after 1815 as the British government's decision to revoke income tax reduced its income.[14] With switching the emphasis of maritime activities from combat at sea to building commercial strongholds in port cities, the British Empire's attention shifted from naval to merchant seamen.[15] The British Army also became more important than the Navy at this stage for maintaining order in the colonies.

Merchant seamen, who manned the commercial fleet of cargo and passenger ships, were a vital resource for their role in putting the policies of mercantilism and free trade into operation and enriching the empire.[16] These seamen constituted a wide variety of

11 Andrew Lambert, "The Shield of Empire 1815-1895," in *The Oxford Illustrated History of the Royal Navy*, ed. J.R. Hill (Oxford, Oxford University Press, 1995), 161-99.
12 John Leyland, *The Royal Navy: Its Influence in English History and in the Growth of Empire* (Cambridge: Cambridge University Press, 1914); Michael Lewis, *British Ships and British Seamen* (London: Longman, 1940); Christopher Lloyd, *The British Seaman 1200-1860: A Social Survey* (London: Collins, 1968); Paul Kennedy, *The Rise and Fall of British Naval Mastery* (New York: Charles Scribner's Sons, 1976); Nicholas Rodger, *The Wooden World: An Anatomy of the Georgian Navy* (London: Collins, 1986); *The Safeguard of the Sea: a Naval History of Britain, Vol. I, 660-1649* (New York: W.W. Norton, 1997); *The Command of the Ocean: A Naval History of Britain, Vol. II, 1649-1815* (London: Allen Lane, 2004); Daniel Owen Spence, *A History of the Royal Navy: Empire and Imperialism* (London: I.B. Tauris, 2016).
13 Stephen Gray, *Steam Power and Sea Power: Coal, the Royal Navy, and the British Empire, c. 1870-1914* (Basingstoke: Palgrave Macmillan, 2018), 5.
14 Eric J. Grove, *The Royal Navy since 1815: A New Short History* (Basingstoke: Palgrave Macmillan, 2005), 1.
15 Miles Taylor, "Introduction," in *The Victorian Empire and Britain's Maritime World, 1837-1901*, ed. Miles Taylor (Basingstoke: Palgrave Macmillan, 2013), 3-6.
16 The merchant navy was supposed to become a 'nursery of seamen' in times of war, Barry Gough, "Profit and Power: Informal Empire, the Navy and Latin America," in *Gentlemanly Capitalism and British Imperialism: The New Debate on Empire*, ed. Raymond E. Dumett (London and New York: Longman, 1999), 68.

professionals such as mates, midshipmen, quartermasters, boatswains, able and ordinary sailors, apprentices, surgeons, stewards, cooks, carpenters, sailmakers, engineers, firemen, and stokers, not to mention ship commanders and officers.[17] Maritime historians have examined their life and work in order to understand the human-sea relationship in its broadest sense, including the history of navigation, voyages of discovery, nautical technology, shipbuilding, privateering and piracy, maritime law, and the ocean in popular culture.[18] As Sarah Palmer and David Williams write in their historiographical survey of British seamen in the early nineteenth century, scholars have analysed themes such as 'life ashore between voyages, educational and religious influences, desertion, lower deck unrest in the navy and organisation and militancy amongst merchant seamen.'[19] In their opinion, the seaman's life ashore, between voyages in particular, has received the maximum attention due to their impact on British society and importance to the history of labour.[20]

17 "Births and Deaths of British Subjects at Sea," *Thirty-Eighth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England* (Abstract for 1875) (London: George E. Eyre and William Spottiswoode, 1877), cxxv.

18 Basil Greenhill and Denis Stonham, *Seafaring under Sail: The Life of the Merchant Seaman* (Cambridge: Stephens, 1981); Marcus Rediker, *Between the Devil and the Deep Blue Sea: Merchant Seamen, Pirates and the Anglo-American Maritime World, 1700-1750* (Cambridge: Cambridge University Press, 1987); Stephen Fisher ed., *Studies in British Privateering, Trading Enterprise and Seamen's Welfare, 1775-1900* (Exeter: University of Exeter Press, 1987); Freda Harcourt, *Flagships of Imperialism: The P & O Company and the Politics of Empire from its Origins to 1867* (Manchester: Manchester University Press, 2006).

19 Sarah Palmer and David R. Williams, "British Sailors, 1775-1870," in *"Those Emblems of Hell"? European Sailors and the Maritime Labour Market, 1570-1870*, eds. Paul C. van Royen, Jaap R. Bruijn and Jan Lucassen (Liverpool: Liverpool University Press, 1997), 111.

20 Examples of works of this kind are Peter Earle, *Sailors: English Merchant Seamen 1650-1775* (London: Methuen, 1998); Ronald Hope, *Poor Jack: The Perilous History of the Merchant Seaman* (London: Chatham Publishing, 2001); Brian Lavery, *Able Seamen: The Lower Deck of the Royal Navy, 1850 to 1939* (London: Conway, 2011); Leon Fink, *Sweatshops at Sea: Merchant Seamen in the World's First Globalized Industry, from 1812 to the Present* (Durham, NC: University of North Carolina Press, 2011). A comprehensive account of British merchant seamen comes from Richard Woodman, *Neptune's Trident: Spices and Slaves 1500-1807* (Stroud: History Press, 2008); *Britannia's Realm: In Support of the State 1763-1815* (Stroud: History Press, 2009); *Masters Under God: Makers of Empire 1816-1884* (Stroud: History Press, 2009); *More Days, More Dollars: The Universal Bucket Chain 1885-1920* (Stroud: History Press, 2010); *Fiddler's Green: The Great Squandering 1921-2010* (Stroud: History Press, 2010). Important local histories of British seamen include E.L. Taplin, *Liverpool Dockers and Seamen, 1870-1890* (Hull: University of Hull Occasional Papers in Economic and Social History, 1974); Jonathan Press, *The Merchant Seamen of Bristol, 1747-1789* (Bristol: Bristol Branch of the Historical Association, 1976).

Envisaged by the British as exceptionally undisciplined and unprincipled since the Middle Ages, seamen were a problematic category of people. In early modern Europe, seamen had the reputation of being rootless, often violent, promiscuous, and dipsomaniac.[21] Their wild and noncommittal character entrenched itself so deeply in popular imagination that many accounts of maritime life, fictional and nonfictional, in the eighteenth and nineteenth centuries described them as inveterate trouble-makers. Isaac Land argues that seamen themselves cultivated this homogeneous identity. Conscripted at a young age from working class households, forced into the hostile environment of ships and unknown regions, and given irregular wages, the sailor was a disgruntled person, without care for social order.[22] Widely considered dangerous and immoral, their activities jeopardised not only their health and careers but also their families, the places they visited or inhabited, military and commercial operations, and various administrative authorities who were in charge of seamen, shipping or port cities. In the English naval towns of Portsmouth and Plymouth, they were said to have cultivated an identity untouched by the metropolitan notions of civility and modernity. They developed subcultures even when they lived within the fortified part of ports and submitted to militarised labour discipline.[23] Commenting on their nature, the eighteenth-century French philosopher Denis Diderot scathingly wrote:

> Long voyages have introduced a new species of anomalous savages; I mean those men who traverse so many countries, and who in the end belong to none; who take wives wherever they find them, and that only from motives of animal necessity; those amphibious creatures, who live upon the surface of the waters; who come on shore only for a moment; to whom every habitable latitude is equal; who have, in reality, neither fathers, mothers, children, brothers, relations,

21 Mary A. Conley, *From Jack Tar to Union Jack: Representing Naval Manhood in the British Empire, 1870-1918* (Manchester: Manchester University Press, 2009), 2.
22 Isaac Land, *War, Nationalism, and the British Sailor, 1750-1850* (New York: Palgrave Macmillan, 2009), 29-30.
23 Brad Beaven, "The Resilience of Sailortown Culture in English Naval Ports, c. 1820-1900," *Urban History* 43, no. 1 (2015): 72-95.

> friends, nor fellow-citizens; in whom the most pleasing and the most sacred ties are extinct; who quit their country without regret; who never return to it without being impatient to go out again; and to whom the habit of living upon a dreadful element gives a character of ferociousness. Their probity is not proof against the crossing of the line; and they acquire riches in exchange for their virtue and their health.[24]

The critical attitude towards seamen arguably started to change in the late eighteenth century as naval authorities, Christian missionaries, authors and playwrights sought to project them as valiant founders of Britain's maritime empire. Subsequently, in Victorian and Edwardian Britain, naval seamen were increasingly portrayed as defenders of the nation and devoted family persons.[25] Their poor reputation was gradually replaced by recognition for their service towards imperialism, and national prosperity.[26] The adulation for seamen in literature, art and other forms of popular culture also counterbalanced the perception of their deviant behaviour.[27] The praise was reserved mainly for naval seamen, whose military heroics and adventures in geographical explorations had an eminent empire-building role, but merchant seamen too received empathy for their hard and brutal life.

In his analysis of English 'nautical novels,' John Peck writes that maritime adventure was an expression of national character.[28] Some novels based on or alluding to maritime life

[24] Abbe Raynal, *A Philosophical and Political History of the Settlements and Trade of the Europeans in the East and West Indies*, *Vol. VI* (Edinburgh: Mundell and Son, 1804), 372.
[25] The same ambivalence could be found in accounts of American seamen. Seamen, 'that vast republic of men who have their dwellings on the seas', so said Edward Griffin in his sermon at the Brick Church, New York, on 7 November 1819, were an unruly group of people with a 'roving way of life'. But they were also 'warm in their attachments, quick to feel for others, easily melted by sympathy, and at the same time strangers to avarice, and liberal even to a fault…' Griffin, *The Claims of Seamen* (New York: J. Seymour, 1819), 7-8. American seamen were presented sympathetically in accounts such as the 1852 annual report of the American Seamen's Friend Society, which stated that more than 70,000 sailors had pledged temperance and nearly 50 Sailors' Homes had been established in port cities. *Annual Report of the American Seamen's Friend Society*, cited in James Haughton, *A Plea for Teetotalism* (London: William Tweedie, 1855), 111.
[26] Kevin Brown, *Poxed and Scurvied: The Story of Sickness and Health at Sea* (Barnsley: Seaforth Publishing, 2011), 163.
[27] Margarette Lincoln, *Representing the Royal Navy: British Sea Power, 1750-1815* (Aldershot: Ashgate, 2002).
[28] John Peck, *Maritime Fiction: Sailors and the Sea in British and American Novels, 1719-1917* (Basingstoke: Palgrave Macmillan, 2001), 5.

portrayed the ship as a social entity different from the political state its successful voyages nurtured. Maritime life was full of masculine aggression and severe regulation. The brutalising of human bodies through hard work, lack of nourishment and insalubrious living conditions was considered normal. It also made sailors highly vulnerable to accidents and ailments such as scurvy, venereal disease and hernia. Their transgressions such as refusal of duty met with severe corporal punishment. Conscription into seamanship separated families and pushed young men into hardships they were not used to. Unforeseen debacles such as shipwrecks forced them to adapt measures sometimes as desperate as cannibalism.[29] These stories generated significant public sympathy for seamen.

Writing in the 1920s about the sailor's detachment from society, Walter Benjamin envisaged them as placeless people, for whom the local character of a city held little meaning – 'he lives on the open sea in a city where, on the Marseilles Cannebière, a Port Said bar stands diagonally opposite a Hamburg brothel, and the Neapolitan Castel del Ovo is to be found on Barcelona's Plaza Cataluña.'[30] Other scholars too have noted seamen's tendency to give up a stable life in favour of an unpredictable seaborne existence that offers them a 'passage' through time and space. Ships are liminal spaces in this mobile world, mediating coastal settlements and life at sea.[31] This dangerous nature attributed to seamen was by no means their only identity. They were portrayed as heroic and valiant in several fictional narratives and temperance journals. However, seamen had a poor reputation for dereliction of duty, drunkenness and crime in India – a representation that remained unchanged throughout the nineteenth century.

[29] Ibid, 6.
[30] Walter Benjamin, *One-Way Street and Other Writings*, trans. Edmund Jephcott and Kingsley Shorter (London: New Left Books, 1978), 102.
[31] David A. Chappell, *Double Ghosts: Oceanic Voyagers on Euroamerican Ships* (New York: Routledge, 1997).

Defining European seamen

European seamen, the primary actor in this study, were a racialised group of white men with understandably little diversity who were employed in the British naval and merchant services. The percentage of white English seamen in the British navy declined over the nineteenth century with the increase in the number of white seamen from other European countries, and seamen from Asia and Africa. In the first quarter of the nineteenth century, two-thirds of the crew in ships from Bengal were required to be European if European seamen were available.[32] In his paper, entitled "The Mercantile Marine of Great Britain," at a meeting of the Society of Arts on 24 February 1875, Capt. Bedford Pim agonised over the increasing racial diversification of seamen decimating British superiority. The discussion of the paper continued in the society's next meeting on 3 March. One of the discussants, H. Liggins, recalled a journey in his father's ship in 1836, when every sailor on board was English and highly efficient in steering the vessel. He did not come across an England-born able sailor in the 1870s. Ship captains preferred Scandinavian seamen for critical jobs such as steering due to their steady, hardworking and persevering nature. He concluded that the preference for non-English seamen showed the deterioration of the quality of English sailors.[33] Dutch, Swedish, and Finnish seamen joined British ships for better payment. They were usually sober, quiet and industrious. The author William Walker thought that American ship captains preferred the 'quiet Belgian, and orderly Dane or Norwegian' to English seamen without exception.[34] British captains were on the lookout for Scandinavian seamen even outside Britain's imperial territory. James Miller, a boarding

[32] *Selections from Calcutta Gazette*, Vol. 4, ed. Hugh David Sandeman (Calcutta: Office of Superintendent Government Press, 1868), 288.
[33] "Twelfth Ordinary Meeting", *Journal of the Society of Arts* 23, no. 1163 (5 March 1875), 340.
[34] William Walker, "Tom Cringle, Bombay, 5th October 1857," in *Tom Cringle's Letters on Practical Subjects, Suggested by Experiences in Bombay* (Bombay: Education Society's Press, 1863), 29.

house manager in St. John, Canada, was notorious for supplying poorly paid Scandinavian seamen to British ship owners. The abundant examples of the crimping of Scandinavian seamen also indicates the indifference of Canadian port authorities to seamen who were not from America or Britain.[35]

The presence of seamen of various European nationalities in the British fleet, particularly in the Royal Navy, generated discussions on racial identity and citizenship. The considerably relaxed attitude of the British legal system towards employing 'foreigners,' except for wartime measures and the reluctance of certain political regimes to offer them *habeas corpus*, helped consolidate the legal rights of these seamen under the British crown. An act passed in 1794 allowed any foreign sailor with three years of wartime naval service and having taken the Oath of Allegiance to be a master of a British ship. Thus, a foreign-born seaman had the opportunity to be naturalised under Navigation Laws and be counted as a British seaman. Legal status as a British subject did not necessarily translate into the person's social acceptance in the circle of Britain-born seamen.[36] Most naval and parliamentary documents from the nineteenth century designated the white seamen drawn from various countries generically as 'seamen' or as 'British seamen' in some instances. Historians of medicine such as David Arnold, Mark Harrison, Harald Fisher-Tiné and many others have all used the term 'European' when referring to troops, seamen, convicts etc. to denote the 'white' component of these forces. The other category of seamen in the British maritime services were the 'lascars' and 'Chinese seamen', who were not governed by the same Navigation Laws and were always mentioned separately and in distinction from 'seamen' as 'Asiatic seamen' in records.

35 Judith Fingard, "Masters and Friends, Crimps and Abstainers: Agents of Control in 19th Century Sailortown," in *Acadiensis* 8, no. 1 (1978): 28.
36 Sara Caputo, "Alien Seamen in the British Navy, British Law, and the British State, c. 1793-c.1815," *The Historical Journal 62*, no. 3 (2019): 685-707.

The term ‘lascar’ usually denoted Indian seamen in the eighteenth century, but was expanded to mean ‘Burmese, Bengali, Malay, Chinese, Siamese, and Surati’ seamen by the mid-nineteenth century.[37] Conrad Dixon estimates that lascars made up 2-3% of maritime labour between 1830 and 1880, though they may have constituted a high 8% of the naval force in the 1850s due to increased demand for sailors to manage the gold rush, the Crimean War and the Indian Mutiny. The first accurate data about the number of lascars employed in imperial trade comes from 1888.[38] In an address about preparing for naval war, delivered on 20 April 1898, Commander W. Dawson, in addition to advocating for the use of merchant vessels, expressed dismay at the declining number of British seamen in the 7,618-strong merchant fleet. He suspected that the cosmopolitan group of ‘28,000 Chinamen and other Asiatics’, ‘the Polynesians, Africans, and South American races’, ‘the Greeks, Levanters, and other Mediterranean’ seamen would not fight with the same tenacity as a British would have done to protect his country. Neither patriotic nor properly trained, these foreign-born sailors would not match up their adversaries at war.[39] His figures were derived from a document named ‘Return of the Number, Ages, Ratings, and Nationalities of the Seamen Employed, on the 25th March, 1896, on Vessels Registered in the British Islands.’ The report used inconsistent and unexplained labels such as ‘Foreigners and Asiatics’, ‘British

37 Norma Myers, “The Black Poor of London: Initiatives of Eastern Seamen in the Eighteenth and Nineteenth Centuries,” in *Ethnic Labour and British Imperial Trade: A History of Ethnic Seafarers in the UK*, ed. Diane Frost (London: Franck Cass, 1995), 8. Other prominent works on the history of Lascars in the nineteenth century include Frank Broeze, “Underdevelopment and Dependency: Maritime India during the Raj”, *Modern Asian Studies* 18, no. 3 (1984): 429-57; Rozina Visram, *Ayahs, Lascars and Princes: The Story of Indians in Britain 1700-1947* (London: Pluto Press, 1986); Gopalan Balachandran, “Circulation through Seafaring: Indian Seamen, 1890-1945,” in *Society and Circulation: Mobile People and Itinerant Cultures in South Asia, 1750-1950*, eds. Claude Markovits, Jacques Pouchepadass, and Sanjay Subrahmanyam (Ranikhet: Permanent Black, 2003), 89-130; Michael H. Fisher, “Working across the Seas: Indian Maritime Labourers in India, Britain, and in Between, 1600-1857,” *International Review of Social History* 51, no. S14 (2006): 21-45; Aaron Jaffer, *Lascars and Indian Ocean Seafaring, 1700-1860: Shipboard Life, Unrest and Mutiny* (Rochester: Boydell Press, 2015).

38 Conrad Dixon, “Lascars: The Forgotten Seamen,” in *Working Men Who Got Wet*, eds. Rosemary Ommer and Gerald Panting (St. John’s: Maritime History Group, Memorial University of Newfoundland, 1980), 265-77.

39 W. Dawson, “The Disappearance of British-Born Merchant Sailors: A National Danger,” *Royal United Services Institution Journal* 42, no. 244 (1898): 641-2.

and Colonial', and 'Colonials'. It arrived at the figure of 115,824 'supposed British-born' persons among the total of 180,366 seamen, constituting approximately 64% of the maritime workforce. African seamen were also employed in imperial trade.[40]

Among the seamen working for the British Empire, 'seamen' and 'lascars' were two sharply differentiated racial categories with separate management, supervision, and legal rights. In missionary records, 'our seamen' meant 'white seamen' without exception, mindful as the authors were about segregating 'Asiatic sailors' in all accounts. This thesis focuses on 'seamen', i.e. the white sailors in the employ of the British maritime services. I have used the term 'European seamen' instead of 'seamen' as the latter could be a confusing, racially neutral term for the personnel in question, and 'British seamen' would be misleading in the context of the white seamen's ever-shifting legal status as citizens and subjects. Usually a conspicuous presence in Indian port cities, 'European seamen' were colourful group of men, who evoked apprehension rather than admiration despite their hard work at sea. As Rudyard Kipling describes the seamen in Calcutta,

> There is a dingy building, next door to the Sailors' Home, at whose gate stand the cast-ups of all the seas in all manner of raiment. There are Seedee boys, Bombay serangs and Madras fishermen of the salt villages, Malays who insist upon marrying native women, grow jealous and run amok: Malay-Hindus, Hindu-Malay-whites, Burmese, Burma-whites, Burma-native-whites, Italians with gold earrings and a thirst for gambling, Yankees of all the States, with Mulattoes and pure buck-niggers, red and rough Danes, Cingalese, Cornish boys who seem fresh taken from the plough-tail, "corn-stalks" from colonial ships where they got four pound ten a month as seamen, tun-bellied Germans, Cockney mates keeping a little aloof from the

[40] Diane Frost, "Racism, Work and Unemployment: West African Seamen in Liverpool 1880s-1960s," *Immigrants & Minorities* 13, nos. 2-3 (1994): 22-33; Alan Cobley, "Black West Indian Seamen in the British Merchant Marine in the Mid nineteenth Century," *History Workshop Journal* 58, no. 1 (2004): 259-74; Ray Costello, *Black Salt: Seafarers of African Descent on British Ships* (Liverpool: Liverpool University Press, 2014).

> crowd and talking in knots together, unmistakable "Tommies" who have tumbled into seafaring life by some mistake, cockatoo-tufted Welshmen spitting and swearing like cats, broken-down loafers, grey-headed, penniless, and pitiful, swaggering boys, and very quiet men with gashes and cuts on their faces. It is an ethnological museum where all the specimens are playing comedies and tragedies.[41]

European seamen were a disreputable section of European settlers in India that the colonial state was unwilling to call attention to. David Arnold writes that the majority of the European migrants in India in the nineteenth century worked outside the elite world of civil and military service, and estate and plantation management. They were rarely present in the romantic imagining of imperial grandeur in contemporary and later writings. The 'poor whites', as Arnold calls them, were a group constituted primarily by soldiers and sailors, who accounted for nearly half of the European community in India. Once their military careers were over, soldiers shifted to professions that demanded semi-skilled labour or mediation between European officers and Indian subordinates, mainly in the railways, public works, prisons, factories and hospitals. Other means of livelihood involved working as servants, masons, coach drivers, nurses, midwives, clerks, teachers and shop assistants for European employers. They had an intermediate position of sociability between the middle-class civil servants who behaved aristocratically in the absence of a proper ruling class, and the distinctive class of orphans, vagrants, prostitutes, convicts, and lunatics.[42] The colonial state's relationship with the white urban poor was uneasy. Its effort to 'civilise' the marginal Europeans have been explored in a number of studies.[43]

41 Rudyard Kipling, *City of Dreadful Night* (New York: Alex Grosset, 1899), 43-4.
42 David Arnold, "European Orphans and Vagrants in India in the Nineteenth Century," *The Journal of Imperial and Commonwealth History* 7, no. 2 (1979): 104-5.
43 Aravind Ganachari, "'White Man's Embarrassment' – European Vagrancy in Nineteenth-Century Bombay," *Economic and Political Weekly* 37, no. 2 (2002): 2477-85; Harald Fisher-Tiné, "Britain's Other Civilising Mission: Class Prejudice, European 'Loaferism' and the Workhouse-System in Colonial India," *The Indian Economic & Social History Review* 42, no. 3 (2005): 295-338; Satoshi Mizutani, "'Degenerate Whites' and their Spaces of Disorder: Disciplining Racial and Class Ambiguities in Colonial Calcutta (c. 1880-1930),"

The entanglement of various bodies has been considered a significant tool for interpreting colonial encounters.[44] In the eighteenth-century, the East India Company regime had a the relatively relaxed attitude towards their white employees and other civilians mixing with non-white subjects. Europeans learnt local languages, indulged in local customs, and had relationships with local women without the fear of debasing their racial characteristics. Durba Ghosh argues that interracial sexual relationships played an important role in the formation of the early colonial state. The criticism of intimate relationships with Indians started as the 'collaborative Raj was phased out by a coercive Raj', which was more concerned about preserving racial integrity.[45] The colonial state after 1857 seemed to firmly discourage and dissociate itself from interracial companionship so that appropriate forms of British civility, status and respectability could be maintained.

Sometimes even colonial officers failed to follow or understand the ideology of separating themselves from the 'natives', especially as the latter considered them outsiders too. The unwillingness of most Indians to see the British as one of their own was an obstacle to assimilation much as the British government's hesitation to approve racial integration. The pressure to uphold their imperial manhood generated a sense of isolation among British expatriates. Ranajit Guha has analysed this distancing as a lens for studying the structure of colonial governance. As the colonial state ruled without the consent of Indians, it could not have entered a cohort with the people it governed. It would rather be anxious to self-differentiate from the ruled in terms of race and culture, however oppressive and exploitable measures would that entail, with the objective of securing the empire. This reading of

in *The Limits of British Colonial Control in South Asia: Spaces of Disorder in the Indian Ocean Region*, eds. Ashwini Tambe and Harald Fisher-Tiné (London and New York: Routledge, 2009), 155-91.

[44] See Tony Ballantyne and Antoinette Burton eds., *Bodies in Contact: Rethinking Colonial Encounters in World History* (Durham, NC: Duke University Press, 2005).

[45] Durba Ghosh, *Sex and Family in Colonial India: The Making of Empire* (New Delhi: Cambridge University Press, 2006), 1.

colonial history destabilises the narrative of imperial conquest, governance and commerce as a controlled, triumphant exercise of power. It draws our attention to the doubts and uncertainties in the minds of the members of the ruling elite regarding the way they were expected to behave in their work for the empire.[46]

Although the coloniser's intention to maintain social distinction from the colonised is artificial, unstable and full of contradictions, they formed and believed in an imagined community as a means to assert this difference.[47] The community was fed by 'everyday cultural idioms of domination' such as racism and self-images of power and prestige.[48] When some participants within this community, especially the poor whites, subverted the discourse of respectability and racial superiority, the ruling elite would be faced with the challenge of preserving these rhetorics. Most of these problems related to interracial sexuality and reproduction. Domiciled Europeans and Eurasians inhabited a problematic in-between space that could subvert the boundaries between national and racial identities. They mimicked European culture but were not considered fit to share the imagined community of the ruling elite.[49] The behaviour of European seamen, commonly expressed through episodes of drunkenness, violence, promiscuity and malingering and desertion, flouted the ideological social propriety of the colonial enclave.

The failure to instil discipline in recalcitrant seamen was embarrassing for colonial administrators, especially after the 1850s.[50] The *Bengal Hurkaru*'s drama critic negatively

[46] Ranajit Guha, "Not at Home in Empire," *Critical Inquiry* 23, no. 3 (1997): 482-493.
[47] Benedict Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism* (London: Verso, 1983).
[48] Ann Laura Stoler, "Rethinking Colonial Categories: European Communities and the Boundaries of Rule," *Comparative Studies in Society and History* 31, no. 1 (1989): 155.
[49] Harald Fischer-Tiné, *Low and Licentious Europeans: Race, Class, and 'White Subalternity' in Colonial India* (New Delhi: Orient BlackSwan, 2009); Laura Gbah Bear, "Miscegenations of Modernity: Constructing European Respectability and Race in the Indian Railway Colony, 1857-1931," *Women's History Review* 3, no. 4 (1994): 531-548.
[50] Ashwini Tambe, *Codes of Misconduct: Regulating Prostitution in Late Colonial Bombay* (Minneapolis and London: University of Minnesota Press, 2009), 27.

reviewed the performance of HMS *Chesapeake* seamen in the Royal Navy-organised charity plays in the Calcutta Lyric Theatre on 25 February 1858. The proceeds from the plays were to benefit the Indian Relief Fund that supported widows and orphans of the 1857 mutiny. Mary Isbell writes that the newspaper's adverse review could have been influenced by the popular conception of seamen as a category that threatened British standards of morality and behaviour. She suggests that the drama critic visualised Royal Navy sailors as both "the uneducated laborers of the Empire" and "heroic representative of English supremacy." The critic might have been uncomfortable with sailors performing in front of a genteel audience. He could also have thought of the performance as offensive to Indian civilians since the Royal Navy, as a military arm of the British Empire, was responsible for protecting imperial interests as the expense of colonial societies.[51]

Historians Harald Fisher-Tiné and Sarmistha De have analysed European seamen in Calcutta as a group of highly visible white subalterns, whose actions threatened to dismantle the edifice of racial and ideological superiority carefully built by the colonial state.[52] The reckless behaviour of these seamen brought them close to the 'uncivilized natives' in the eyes of the state, which was afraid of its ideals of the civilizational purity of Caucasian race and class imploding. Both Fisher-Tiné and De focussed on the colonial anxiety about the high rate of unemployment and mortality among seamen in Calcutta in the 1850s-60s, when disbanding of the armed forces after the Indian Mutiny of 1857, largescale desertion and reduced recruitment left thousands of seamen impoverished. Most of these people became

[51] Mary Isbell, "When Ditchers and Jack Tars Collide: Benefit Theatricals at the Calcutta Lyric Theatre in the Wake of the Indian Mutiny," *Victorian Literature and Culture* 42 (2014): 416.
[52] Harald Fisher-Tiné, "Flotsam and Jetsam of the Empire?: European Seamen and Spaces of Disease and Disorder in Mid-nineteenth Century Calcutta," in *The Limits of British Colonial Control in South Asia: Spaces of Disorder in the Indian Ocean Region*, eds. Ashwini Tambe and Harald Fisher-Tiné (London and New York: Routledge, 2009), 121-54; Sarmistha De, *Marginal European in Colonial India, 1860-1920* (Kolkata: Thema, 2008). The idea of destitute seamen causing the ruling class enough embarrassment for the latter to mobilise its legal resources and social welfare schemes to the benefit of seamen is also articulated by Constance Mary Turnbull with reference to Singapore. C.M. Turnbull, *A History of Modern Singapore, 1819-2005* (Singapore: NUS Press, 2009), 80-81.

vagrants; others resorted to crime as a means of livelihood; while some of them were given shelter by Christian missionaries and sent home by the combined effort of the Church and the colonial state.

European seamen were not present in large numbers in the Indian Navy, which was initially called the Bombay Marine and then the Royal Indian Marine in the second half of the nineteenth century, and tasked with patrolling the Indian Ocean, securing the passage of ships, and surveying new territories.[53] Its military actions were limited mostly to the Anglo-Burmese Wars and prevention of piracy. An additional motive of maintaining the large Indian Navy was to benefit from the knowledge its officers had of Indian people and languages. This knowledge served the British Empire well in their political missions. Capt. Haines was appointed the political agent in Aden due to his knowledge of Arabic. Lt. Lynch, who worked with the Resident in Baghdad, was proficient in Persian and Turkish.[54] I have not studied the European seamen in the Indian Navy here. The reason is, in the words of the Indian Navy's hydrographer Clements Markham, "previous to 1860 there were many and most valuable records of that Service in the India Office, but in that year nearly all were reduced to pulp."[55] Fortunately, the British Navy's records have survived better than the Indian Navy's even though in a highly fragmented form. Yet, it must be noted, naval medical records after 1857, i.e. after the East India Company era, are sparse. Finding medical reports at the Port Trust, state and national archives in India proved to be similar to finding a needle in a haystack. The British archives too have little to show for this period. The absence of surgeon's diaries and reports are particularly baffling, and compels one to look into public discourse as a complimentary source for writing something close to a systematic account of maritime health and hygiene. The absence of official materials dealing with seamen's

53 D.J. Hastings, *The Royal Indian Navy, 1612-1950* (Jefferson, NC: McFarland, 1988).
54 "Indian Navy," *The Times of India* (March 20, 1839), 183.
55 Charles Rathbone Low, *History of the Indian Navy: (1613-1863)* (London: Bentley and Son, 1877), ix.

experience in colonial South Asia is rather telling. The first *Annual Report of the Sanitary Commission for Bengal*, *1864-65*, contained 55 pages on the need for improving the diet and barrack accommodation of troops, and the necessity of new hospitals for them, and three pages on seamen. The difficulty in finding sources is probably the reason for historians not studying the history of European seamen in nineteenth-century India.

The problem has been acknowledged also by Philippa Levine, who has written that disregard for venereal diseases among seamen, despite its high incidence, reflected the army's growing importance for colonial policy.[56] Naval health was given its appropriate attention between the mid-eighteenth and the early-nineteenth century. Around this time naval surgeons demanded equal treatment like army surgeons and a greater share of the medical resources allocated to the military. In justification, surgeon John Huxham referred to Britain's dependence on the Navy for conquest, defence and trade.[57] He contributed to the growing public image of the Navy as an essential tool of empire-building. He also suggested that seamen were undervalued and, given the state of medical provision, almost certain to become ill in the service. Other physicians emphasised the economic benefit of better healthcare at sea, arguing that improved preventive care would reduce the expenditure on hospitals and support for wounded men.[58] Merchant seamen received far less attention than their naval counterparts, without recourse to the service of surgeons and reliant on medicine chests and their captain's ability to use medical guides.[59] The reason for the relative lack of concern was probably that seamen were an expendable workforce, who

[56] Philippa Levine, *Prostitution, Race, and Politics: Policing Venereal Disease in the British Empire* (New York and London: Routledge, 2003), 285.
[57] John Huxham, *An Essay on Fevers* (London: S. Austen, 1750), 264.
[58] Margarette Lincoln, "The Medical Profession and Representations of the Navy, 1750-1815," in *British Military and Naval Medicine, 1600-1830*, ed. Geoffrey L. Hudson (Amsterdam and New York: Rodopi, 2007), 209.
[59] The widespread use of medicine chests and guides reflected the commercialism in healthcare. Self-diagnosis and self-prescription were arguably doubled as life-saving skills and consumption fetish. Marieke M.A. Hendriksen, "Consumer Culture, Self-Prescription, and Status: Nineteenth-Century Medicine Chests in the Royal Navy," *Journal of Victorian Culture* 20, no. 2 (2015): 147-67.

were rarely trained (in merchant service) and did not come from respectable families, both of which devalued their services. They were not the British government's priority till their problems became significant enough to imperil the empire.

Defining port city and sailortown

When seamen stepped on shore, they usually went to areas in the vicinity of the port for temporary residence and entertainment. This maritime district, full of drinking and lodging establishments, many of which were unlicensed and flouted the government's health and business regulations, was the 'sailortown'. The area represented social ties born out of the activities of economic and social actors such as shipping agencies, job contractors, gambling dens and brothels.[60] The obvious question is what separated the sailortown from the port town? Was there any specific boundary? In Graeme Milne's opinion, sailortowns were product of a specific period of European expansion into the Atlantic, Indian and Pacific Oceans and the consequent growth of the mercantile-industrial economy. With increasing activity on the waterfront, districts with dense clusters of warehouses, hotels, pubs and brothels, also labour recruiters and street gangs, spawned in port cities.[61] There was, as such, no geographical boundary separating the area for seamen, but a specific locality with a high concentration of seamen was discernible from its appearance. Naval sailortowns were symbols of imperial powers, but they were no different from mercantile sailortown in the reputation they had as spaces of drinking, prostitution, and disorder. The civic and naval

[60] Stan Hugill, *Sailortown* (London: Routledge and Kegan Paul, 1967).
[61] Graeme J. Milne, *People, Place and Power on the Nineteenth-Century Waterfront: Sailortown* (Basingstoke: Palgrave Macmillan, 2016), 14-15.

authorities created permeable boundaries that separated sailortowns from the rest of the city.[62]

The sailortowns in Indian port cities like Calcutta and Bombay were located centrally – close to the port and in the middle of populous districts, which will be described later. These were transient spaces that shifted with the change in the place for the main anchorage. Stan Hugill, sailor and folk musician known for recording seamen's songs, said that Calcutta had the largest sailortown in the 'whole of orient.'[63] The movement of international seamen facilitated global exchange of goods and ideas, as well as spread of disease. The sailortown, representative of a liminal urban space for both mobile and sedentary workers, was notorious for their squalor and disorderly nature. The distinctive features of these spaces were health and sanitation problems, dynamic relationships between various racial and occupational groups, and the urban and maritime elite's constant effort to segregate them from the more respectable areas of the city. When referring to seamen in Calcutta or Bombay, this thesis essentially talks about seamen in the sailortown, but the sanitary reforms it discusses encompasses entire cities.

Calcutta and Bombay, arguably shaped by the British-Indian transnational networks of trade and conquest in the seventeenth century, bore distinct transnational imprints. These two trading outposts of the English East India Company later expanded into major commercial and administrative centres of British India. As important port cities, they acted as nodal points for the exchange of raw materials and manufactured products, transit of

62 Valerie Burton, "Boundaries and Identities in the Nineteenth-Century English Port: Sailortown Narratives and Urban Space," in *Identities in Space: Contested Terrains in the Western City since 1850*, eds. Simon Gunn and Robert J. Morris (Aldershot: Ashgate, 2001), 137-51; Brad Beaven and Mathias Seiter, "Regulating Sin in the City: The Moral Geographies of Naval Port Towns in Britain and Germany, c. 1860-1914," *Britain and the World* 13, no. 1 (2020): 27-46.
63 Hugill, *Sailortown*, 312.

civilians and soldiers, and later centres of labour organisation and trade unionism.[64] The administration in both cities successfully developed a vast hinterland that aided British trade. Apart from maritime and trading connections, Calcutta was a highly important administrative centre and an archetype of a British colonial capital – cosmopolitan and hybrid. These were places where a large number of indigenous people lived around European settlers. Colonial medicine had a substantial role to play in defining these bodies in terms of gender, race, ethnicity etc, inevitably creating hierarchies, enforcing boundaries, and generating self-images within differentiated categories of people. According to a report in the *Calcutta Review*, in the eighteenth century the military and naval establishment in Bengal consisted of 10 artillery men, 69 seamen and marines, and 48 soldiers, including officers and seven surgeons and assistants.[65] In the late nineteenth century, the number of seamen in Calcutta and other colonial Indian port cities increased to several thousands, most of whom were with merchant vessels. They were particularly vulnerable to disease owing to their precarious employment situations, stereotypical behavioural problems, and 'distressing atmospherical vicissitudes.'[66]

Port towns were important for military strategy, trade and commerce, and social and cultural exchanges. As Tai-Yong Tan writes, the character of port cities is determined by the resident population and the broader economic structures in which they operate. As places of international and interpersonal contact, port cities function as both transit points for the

[64] Nilmani Mukherjee, *The Port of Calcutta: A Short History* (Calcutta: Commissioners for the Port of Calcutta, 1968); Mukherjee, "Port Labour in Calcutta, 1870-1953: Some Trends of Change," *Transactions of the India Institute of Advanced Study* 7 (1969): 404-73; Satyesh C. Chakrabarty, *Port of Calcutta: 125 Years 1870-1995* (Calcutta: Calcutta Port Trust, 1995); Aniruddha Bose, *Class Conflict and Modernization in India: The Raj and the Calcutta Waterfront (1860-1910)* (London and New York: Routledge, 2018); Shantaram D. Chittar, *The Port of Bombay: A Brief History* (Bombay: Bombay Port Trust, 1973); M.V. Kamath, *Tides of Time: History of Mumbai Port* (Mumbai: Mumbai Port Trust, 2000); Marriam Dossal Panjwani, "*Godis, Tolis* and *Mathadis*: Dock Workers of Bombay," in *Dock Workers: International Explorations in Comparative Labour History, 1790-1970 Volume 1*, ed. Sam Davies et al. (Aldershot: Ashgate, 2000), 425-42.
[65] "Notes on the Right Bank of the Hooghly," *Calcutta Review* 3, no. 6 (June 1845): 513.
[66] "The Sick Room in India," *Calcutta Review* 3, no. 5 (January 1845): 81.

movement of goods, labour and capital, and nodal centres for the reception and transmission of culture, knowledge and information. From an economic perspective, the social, political, and cultural identity of port cities are determined by the relationship between the port, its hinterland (or lack of it), and any external economic space it serves.[67] Before the twentieth century, the traffic of people in port cities was often difficult to regulate, which resulted in the spread of disease across coastal areas and shipping routes across to distant shores. Port cities were thus hubs for the dispersion of infectious diseases, most notably cholera and plague in the nineteenth century, acting as 'gateways of disease' and 'portals of death'.[68] In addition, port cities had become infamous for disreputable activities, involving especially seamen. Michel Foucault evocatively described them as places of 'desertion, smuggling, contagion', 'crossroads for dangerous mixtures,' and 'meeting-place for forbidden circulations.'[69] The nature of seamen's daily life on board ships or in port cities played a crucial role in their health and wellbeing.

For instance, colonial authorities implemented an extensive sanitation project in Freetown, Sierra Leone, in the late nineteenth century to neutralise malaria and yellow fever. The project entailed town planning, and what was initiated as a method of protecting imperial trade ended up racially segregating the city's living quarters.[70] Urban planning in Indian port cities such as Calcutta, Bombay and Madras was extensively motivated by public health. The movement of seamen of various nationalities opened these places to a web of colonial entanglements of people and ideas. These settlements expanded into cities in the

67 Tai-Yong Tan, "Port Cities and Hinterlands: A Comparative Study of Singapore and Calcutta," *Political Geography* 26 (2007): 862.
68 Jörg Vögele and Hideharu Umehara eds., *Gateways of Disease: Public Health in European and Asian Port Cities at the Birth of the Modern World in the Late 19th and Early 20th Century* (Göttingen: Cuvillier Verlag, 2015).
69 Michel Foucault, *Discipline and Punish: The Birth of the Prison*, trans. Alan Sheridan, 2nd ed. (New York: Vintage Books, 1995), 144.
70 Leo Spitzer, "The Mosquito and Segregation in Sierra Leone," *Canadian Journal of African Studies* 2, no. 1 (1968): 49-61.

nineteenth century as people with a variety of professions congregated there for livelihood. The influx of people made the civic authorities implement detailed urban planning for British citizens and subjects to be accommodated within a colonial order of habitation and livelihood. Colonial administrators prioritised the development of these cities as they handled high volumes of commercial and passenger exchanges across the Indian Ocean and were thus perennially at risk of circulating diseases. European sailors in particular were highly susceptible to diseases, especially communicable diseases that British surgeons considered to have spread from India.

The theme of European seamen's health in colonial port cities provides a vantage point to examine two interrelated imperial dynamics. First, it allows one to understand how medicine and philanthropy served imperial interests and class divisions in colonial spaces. This will help the thesis to reconstruct the colonial character of transnational presence in Indian port cities. Second, with an eye on seamen's health alone, the thesis will examine the epistemic frames of British imperial medicine. The mobile nature of seamen meant they were subject to different sets of health regulations. The health policy followed on board ships were different from what seamen's hospitals in India operated with. Thus, studying the health of European seamen in colonial port cities provides an excellent look into the defining features and interplay of imperial and colonial health regulations. By doing so, it expands the frameworks of Ruth Rogaski's book on health in the Chinese treaty-port Tianjin and Mark Harrison's article on the Royal Navy's encounters with cholera and venereal disease in Japan's treaty ports. These explored imperial cross-cultural exchange of knowledge through an analysis of the medical inspection of seamen.[71] Rogaski's work in particular made references to the impact of modern surgery, the furnishing of nutritious

[71] Ruth Rogaski, *Hygienic Modernity: Meanings of Health and Disease in Treaty-Port China* (Berkeley: University of California Press, 2004); Mark Harrison, "Health, Sovereignty and Imperialism: The Royal Navy and Infectious Disease in Japan's Treaty Ports," *Social Science Dilman* 14, no. 2 (2018): 49-75.

food, proper dressing and medicine, the ailments caused by exposure to weather, and various local diseases upon the British Navy. With its focus on the crisscrossing of imperial and colonial subjecthoods, this thesis takes a step further in exploring the emergence of new forms of medicine.

Seamen as sanitary subjects

Unlike other agents of the colonial regime, European seamen had a fleeting presence in one place. Their movement and great likelihood of contacting disease branded them as potential carriers of germs. This was a dominant factor, especially after the second half of the nineteenth century, in the British Empire identifying them as sanitary subjects. Despite the scale of disease and mortality among seamen, and the British Empire's involvement in maritime medicine, the attention historians have given to the state of health of seamen has been sparing at its best. Beginning with the four-volume *Medicine and the Navy, 1200-1900*, the first two parts of which were written by the Surgeon-Commander J.J. Keevil and the next two by historian Christopher Lloyd and Surgeon-Captain J.L.S. Coulter, the history of maritime medicine has mostly dealt with naval medicine during war and the fight against epidemic and contagious diseases through preventive medicine.[72] This thesis will draw insights from the works on specific diseases, and experiments and careers of naval surgeons.[73]

[72] J.J. Keevil, Christopher Lloyd and J.L.S. Coulter, *Medicine and the Navy, 1200-1900*, 4 vols. (Edinburgh and London: E & S Livingstone, 1957-63), I: 1200-1649, 1957; II: 1649-1714, 1958; III: 1714-1815, 1962; IV: 1815-1900, 1963.

[73] Laurence Brockliss, John Cardwell and Michael Moss, *Nelson's Surgeon: William Beatty, Naval Medicine, and the Battle of Trafalgar* (Oxford: Oxford University Press, 2005); Brian Vale and Griffith Edwards, *Physician to the Fleet: The Life and Times of Thomas Trotter, 1760-1832* (Woodbridge: Boydell Press, 2011); Iain Milne, "Who Was James Lind, and What Exactly Did He Achieve," *Journal of the Royal Society of Medicine* 105, no. 12 (2012): 503-8.

Histories of the impact of medicine or sanitary reforms upon seamen are few in comparison with the large body scholarship focused on the body of soldiers.[74] Seamen's health in the first half of the nineteenth century is represented poorly in maritime history, while there are some works dealing with the second half.[75] The oversight is even more glaring in the historiography of health and medicine in colonial South Asia. Through a study of seamen's health, this thesis will examine the colonial anxiety around contagion, disease and climates. By looking at how seamen's vulnerability was historically produced as a label, and their daily lives and behaviour regulated by medical discourses, I will show political rationality of the British Empire was influenced by a racial understanding of social space and disease dispersion. The spaces of maritime vessels and sailortowns, so far almost exclusively seen as sites of labour and immigration history in the South Asian context, are examined here to unlock what the medical and moral intervention in seamen's lives tell us about British colonialism.

Regulation of seamen's bodies was a key feature of naval administration. The balance of power between seamen and the officialdom had always been asymmetrically tilted towards the latter. In Michel Foucault's opinion, port authorities necessarily enforced certain forms of discipline in order to control the flow of bodies before their treatment in naval hospitals.[76] This involved partitioning the space of ports so that seamen could be kept separated from the civic population, contagious diseases could be contained, commodities

[74] John Shepherd, *The Crimean Doctors: A History of the British Medical Services in the Crimean War*, 2 vols (Liverpool: Liverpool University Press, 1991); Roger Cooter, *Surgery and Society in Peace and War: Orthopaedics and the Organisation of Modern Medicine, 1880-1948* (Basingstoke: Macmillan, 1993); Roger Cooter, Mark Harrison and Steve Sturdy eds., *Medicine and Modern Warfare* (Amsterdam: Rodopi, 1999); Mark Harrison, *Medicine and Victory: British Military Medicine in the Second World War* (Oxford: Oxford University Press, 2004); Mark Harrison, *The Medical War: British Military Medicine in the First World War* (Oxford: Oxford University Press, 2010); Catherine Kelly, *War and the Militarization of British Army Medicine, 1793-1830* (London: Pickering & Chatto, 2011).

[75] Joan Druett, *Rough Medicine: Surgeons at Sea in the Age of Sail* (New York: Routledge, 2001); Robin Haines, *Doctors at Sea: Emigrant Voyages to Colonial Australia* (Basingstoke: Palgrave Macmillan, 2005); Gordon C. Cook, *Disease in the Merchant Navy: A History of the Seamen's Hospital Society* (London: CRC Press, 2007).

[76] Michel Foucault, *Discipline and Punish*, 144.

could be monitored, and deserters restrained. The hospitals too exerted control by tabulating their regimes of treatment and cure, and registering the identities and behaviour of patients. Foucault explains this using the example of Rochefort, a French naval base and high security penal colony. The elaborate systems of medical surveillance in Indian port cities with commercial potential and large European population, arguably to protect imperial and commercial ambitions, corroborated Foucault's observation.

Regulation has been a dominant aspect in the historiography of seamen's health in European port cities. Sally Sheard's study of health policies in the port of Liverpool between 1875 and 1939 shows that the local government's sanitary measures were aimed at protecting the sedentary from the floating population rather than helping seamen. The Port Sanitary Authority kept a close watch on all seafarers for infectious diseases such as cholera, plague, yellow fever and venereal diseases.[77] Sheard argues that seamen's problems were resolved only when they threatened to snowball into a public health hazard. Common afflictions like fever or cold, or inhospitable living quarters, did not receive adequate medical attention as these did not imperil local public health. Institutions like the Seamen's Dispensary helped enforce this strategy by selective treatment of sailors on shore while the living conditions on board ships continued to be largely neglected. In contrast with such a political response to medical problems in a major port of the British Empire, port authorities in Norway were more attentive to sailors' health. Elisabeth Solvang Koren demonstrates that Norwegian seamen received better food and healthcare aboard ships. The authorities swiftly neutralised the outbreak of beriberi among seamen in the early twentieth century, which was mainly caused by consumption of preserved food, by improving diet at sea. Official reports about health of sailors, unlike in Liverpool, hardly disclosed any additional

[77] Sally Sheard, "Mixed Motives: Improving the Health of Seamen in Liverpool, 1875-1939," in *European Health and Social Welfare Policies*, ed. Laurinda Abreu (Santiago de Compostela: Compostela Group of Universities, 2004), 321-36.

apprehension for port city residents, showing that sailors were not treated any differently than other citizens.[78]

The literature on health in colonial Indian port cities have so far focused on the spread of epidemics, movement of diseased passengers and troops, quarantine, legislations like the Native Passenger Ships Act of 1876 and the Pilgrim Act of 1895, frictions between the colonial government and traders, restrictions in commerce, and the work of port sanitary commissioners.[79] Indian ports were continuously inspected for diseases due to their high traffic of commercial and passenger exchanges across the Indian Ocean, thus being at risk of widely circulating medical and moral problems. European seamen were at the intersection of these problems around whom certain ideas and practices of tropical hygiene were shaped. Going further, I will argue that they were also at the centre of transnational exchanges in the knowledge of health, climate and culture in a colonial setting. A study of seamen's health helps to explain not only the co-constitution of maritime and tropical medicine, but also the interplay of imperial and colonial authorities as well as state and non-state actors in South Asian history.

78 Elisabeth Solvang Koren, "In a Peculiar Position: Merchant Seamen in Norwegian Health Policy, 1890-1940," in *New Directions in Norwegian Maritime History*, eds. Lewis R. Fischer and Even Lange (Liverpool: Liverpool University Press, 2011), 83-100.

79 Mark Harrison, "Quarantine, Pilgrimage, and Colonial Trade: India 1866-1900," *The Indian Economic & Social History Review* 29, no. 2 (1992): 117-44; Mridula Ramanna, *Western Medicine and Public Health in Colonial Bombay, 1845-1895* (New Delhi: Orient Longman, 2002), ch. 4; Sandhya L. Polu, *Infectious Disease in India, 1892-1940: Policy-Making and the Perception of Risk* (Basingstoke: Palgrave Macmillan, 2012); Saurabh Mishra, "Beyond the Bounds of Time? The Haj Pilgrimage from the Indian Subcontinent, 1865-1920," in *The Social History of Health and Medicine in Colonial India*, eds. Biswamoy Pati and Mark Harrison (London and New York: Routledge, 2009), 31-44; Sanchari Dutta, "Plague, Quarantine and Empire: British-Indian Sanitary Strategies in Central Asia, 1897-1907," in *Idem*, 74-92. A number of studies have looked at plague from the perspective of urban history, for example, Ian J. Catanach, "Plague and the Tensions of Empire: India, 1896-1918," in *Imperial Medicine and Indigenous Societies*, ed. David Arnold (Manchester: Manchester University Press, 1988), 149-71; Robert Home, *Of Planting and Planning: The Making of British Colonial Cities* (London: E & FN Spon, 1997), ch. 3; Prashant Kidambi, "'An Infection of Locality': Plague, Pythogenesis and the Poor in Bombay, c. 1896-1905," *Urban History* 31, no. 2 (2004): 249-67.

This exercise of power over seamen's body presents us with a challenge of understanding what constituted imperial and colonial about medicine.[80] The main emphasis in the history of medicine in colonial India have been on the themes of the making of medicine through knowledge exchange, medicine as colonial modernity and power over Indians, pathological categories in the vernacular, and the meanings of medicine and body.[81] The handful of works to have focussed on the health of Europeans in India, such as Mark Harrison and David Arnold's research on the impact of tropical climate on the racialised European body, and Waltraud Ernst's study of the European lunatics in India, are centred on the question of how medicine served the imperial mission.[82] Several studies of medicine and the colonial armed forces explore the beginning of the collection of health, disease and mortality statistics, clinical trials of preventive medicines, and establishment of specialised hospitals.[83] This study of mobile seamen and surgeons bring in a fresh perspective. Surgeons with the merchant fleet had a different mandate of imperial command from naval surgeons, while surgeons employed in general hospitals in port cities were under authority of the particular provincial government. What was then imperial or colonial about European seamen's health in India? What do we know about the relationship between medicine and British power from the way seamen's health was administered? To answer these questions, the thesis looks at the fundamental principle of colonialism as a system that uses force and

80 Shula Marks pertinently pointed out the necessity of considering what precisely constituted the 'colonial' in the overlap between the colony and the metropole. She specifically highlighted the desire of British colonisers to uphold certain ideologies of governance, and the differences they thought separated the coloniser from the colonised. Shula Marks, "What Is Colonial about Colonial Medicine? And What Has Happened to Imperialism and Health?" *Social History of Medicine* 10, no. 2 (1997): 205-19.

81 David Arnold, *Colonising the Body: State Medicine and Epidemic Disease in Nineteenth-Century India* (Berkeley: University of California Press, 1993); Projit Bihari Mukharji, *Nationalizing the Body: The Medical Market, Print and Daktari Medicine* (New York and London: Anthem Press, 2009); David Hardiman and Projit Bihari Mukharji, eds. *Medical Marginality in South Asia: Situating Subaltern Therapeutics* (London and New York: Routledge, 2013).

82 Waltraud Ernst, *Mad Tales from the Raj: The European Insane in British India, 1800-1858* (London and New York: Routledge, 1991).

83 Erica Wald, *Vice in the Barracks: Medicine, the Military and the Making of Colonial India, 1780-1868* (Basingstoke: Palgrave Macmillan, 2014); Chakrabarti, *Medicine and Empire: 1600-1960*, ch. 3.

consent to implement medical and sanitary programmes. It is hard to tell if force was more prevalent as we have no record from the seaman's perspective telling us how they related to the medical systems they were subject to. There are evidences, however, of their world being reordered by new sanitary policies, and they refusing to comply to the regulations. A study of such episodes of contestation, I argue, will bring out the ideological pressures of imperialism and colonialism.

The administration of seamen's health was not characterised by extensive medicalisation that was a precondition of the interlinking of governments and bodies through biopower. Going beyond regulation of bodies through medical systems, my thesis takes into account control of seamen's behaviour by Christian philanthropists, who, I argue, had greater share of biopower over seamen than the state had. Michel Foucault introduced the concept of biopower as a form of institutional control over subjects that emerged in the second half of the eighteenth century. This new form, he says, was distinctive from the overtly disciplinary control of the body of individualised subjects through a 'disciplinary technology of labour', which had been prevalent since the seventeenth century. It sought to regulate rather than force ('not disciplined, but regularised') human behaviour as a means to discourage what the governing institution envisaged as disagreeable conduct.[84] Biopower was mainly aimed at regulating the biological aspects of social life to ensure the collective prosperity of society. Its main function was in the area of public health, to make the subjects follow the institution's standards of sexuality, reproduction, fertility, morbidity, overcrowding, cleanliness etc. As diseases depleted the productive capacity of society at a quotidian level, its eradication was a priority for the post eighteenth-century industrial state. Surveillance and segregation of the ill, sanitary measures, and vaccinations were some of

84 Michel Foucault, *"Society Must be Defended": Lectures at the Collège de France, 1975-76*, eds. Mauro Bertani and Alessandro Fontana, trans. David Macey (New York: Picador, 2003), 239-63.

the methods through which biopower was exercised. It wanted, Foucault says, to "exert a positive influence on life, that endeavours to administer, optimize, and multiply it, subjecting it to precise controls and comprehensive regulations."[85] He connects it with the emergence of state medicine, which, he says, developed in seventeenth-century Germany as a system of observation of disease, compilation of health statistics, standardising of medical instructions and service, and medical administration.[86]

Foucault's idea of biopower, fragments of which are scattered throughout his extensive writings, can be read into the government's strategic intervention in collective behaviour to maximise the socio-economic capacities of its subjects. European seamen were undoubtedly regulated by the biopolitical British state through naval hospitals, quarantine, and preventive medicine. The decentredness of power in Foucault's theory also keeps open a space for non-governmental institutions to exercise a similar unconventional authority. Such institutions subvert a single modality of sovereign power, which is often equated with the power of the state, but have their own spheres of influence. The totalising influence of religion on social life, for instance, has been a powerful alternative to state sovereignty. Religion, supported by its philanthropic overtone, can create a moral economy for its followers in which little compensation is asked for its services. Christian clergy were an important group in addition to the colonial state in the governance of public life. In addition to social control, I examine their combined effort through the lens of paternal responsibilities. Paternalism had a wide appeal in Victorian England, but was it simply control with a human face? It is essentially problematic as it interferes with the free will and autonomy of the beneficiary. This coercive aspect is counterbalanced by the intention of

85 Michel Foucault, *The History of Sexuality Volume 1: An Introduction*, trans. Robert Hurley (New York: Pantheon Books, 1978), 137.
86 Michel Foucault, "The Birth of Social Medicine," in *Power*, ed. James D. Faubion, trans. Robert Hurley (New York: New Press, 2000), 140-1.

uplifting people unable to look out for themselves. The work of Christian missionaries in colonial India is an excellent context for questioning the nature of British paternalism in the nineteenth century.

Seamen and contact zones in global history

The dynamic, shifting nature of maritime medicine arguably owed much to the ability of surgeons to travel, experiment, and observe patients across oceanic routes. A surgeon's table on board ships or in hospitals was more than a piece of furniture; it connected itinerant people, being located at the interstices of societies and cultures. Compared to military surgeons, naval surgeons did not come in contact with local medical practices as often, rooted as they were in ships. Their knowledge of hygiene and medicine, therefore, was developed through revision and reworking of metropolitan science by clinical observation to a greater extent than interaction with indigenous science. This study of the medical discourses produced by European doctors and seamen, who were an undifferentiated racial group, does not follow Kapil Raj's circulatory model of knowledge exchange, or Simon Schaffer's insistence on the simultaneously dualistic and antagonistic nature of exchanges between Europeans and other peoples.[87] Rather, the actors in my thesis correspond with Suman Seth's formulation that mobile surgeons did not necessarily blur boundaries, but brought into existence new 'socially imbricated, tentative, and complex' categories and binaries.[88]

87 Kapil Raj, *Relocating Modern Science: Circulation and the Construction of Knowledge in South Asia and Europe, 1650-1900* (Basingstoke: Palgrave Macmillan, 2007); Simon Schaffer et al., eds., *The Brokered World: Go-Betweens and Global Intelligence, 1770-1820* (Sagamore Beach: Science History Publications, 2009).
88 Suman Seth, *Difference and Disease: Medicine, Race, and the Eighteenth-Century* (Cambridge: Cambridge University Press, 2018), 11.

With this approach, the thesis argues that the traditional centre-periphery model of knowledge transmission or diffusion, which required two sites with unequal power over modes of circulation, can be operationalised in a different manner, in which one person can represent both the core and the periphery – 'familiarity and strangeness.' European surgeons and seamen reinvented the core through their experience at the periphery. Instead of collapsing or reifying the analytical distinction between the centre and the periphery, they negated the boundary separating them. As my thesis will show, surgeons on board ships and surgeons in the Indian Medical Service worked with two distinct epistemologies. The first revised metropolitan science through observations made across geographical sites; the second posed a greater challenge by redefining metropolitan knowledge through their embeddedness in colonial medicine, which was shaped through the interaction of British and Indian knowledge systems. I could not explore the second category in detail for want of archival sources on seamen's hospitals in India, and compared to surgeons on board ships, colonial surgeons published almost no research in medical journals.

This thesis uses the conceptual framework of global history, which helps it to understand connected historical processes, especially the complex relationship among of medicine, spaces, and imperial modernity. Global history provides the analytical structure for exploring the process of how the world is not merely a 'Western' invention and has been co-produced by creative forces working simultaneously across regions. C.A. Bayly considered global history to be more useful than transnational history as a method for historians of kingdoms, empires and sovereign city-states that existed before the twentieth century.[89] He acknowledges that a sense of nationality existed in parts of the non-Western

[89] C.A. Bayly, Sven Beckert, Matthew Connelly, Isabel Hofmeyr, Wendy Kozol, and Patricia Seed, "AHR Conversation: On Transnational History," *American Historical Review* 111, no. 5 (2006): 1440-64.

world, but the absence of nation-states as such contravenes the idea of interpenetration of national cultures. Global history circumvents this problem of categorising spatial units into geopolitical concepts, and mobilising actors within and without the nation. Patricia Clavin's definition of transnationalism transcends the methodological restrictions imposed by the nation-state by stressing the concept's importance as a measure of the limits of the latter.[90] She envisages a transnational community as a 'honeycomb' which frames the identities of nation-states, institutions and spaces, and whose boundaries ought to remain porous and interactive for its survival. The importance of nation-states as historical characters is thus acknowledged and reinforced with every retelling of transnational connections. The present work approaches the history of maritime and littoral health and sanitation from an intra-imperial rather than a transnational perspective that seeks to 're-centre' the empire. It acknowledges the British imperial hegemony over medical administration of oceanic routes to India and Indian port cities as part of its public health imperative of protecting the British maritime working-class. It takes a top-down approach to the questions of agency and power, especially the manner in which actors and institutions connected and disrupted spaces and cultures of medicine.

Historians have also acknowledged the significance of oceans as zones of human interaction and not merely as settings for maritime adventures. Amelia Polónia identifies the subfields of maritime history as technology, vessels, labour, merchants and firms, ports, fisheries, war and diplomacy.[91] She has described maritime history as an ideal 'gateway to global history' since maritime exchanges tend to circumvent the political and cultural borders enforced by people. To add more nuance to the argument, it can be said that territorially bounded empires and nations launched the maritime commercial and military

90 Patricia Clavin, "Defining Transnationalism," *Contemporary European History* 4, no. 4 (2005): 421-39.
91 Amélia Polónia, "Maritime History: A Gateway to Global History?" in *Maritime History as Global History*, eds. Maria Fusaro and Amélia Polónia (Newfoundland: St. John's, 2010), 1-20.

networks that regulated the circulation of people and commodities across oceans. These empires even split maritime spheres of influence by drawing frontiers and fought between themselves over allegations of infringing these boundaries. As Mark Harrison remarks, 'pathogens know no borders and lend themselves to histories that are global or transregional in scope.'[92] The history of global transmission of diseases and the international sanitary conferences taking place in the late nineteenth century to generate plans for stopping them are cases in point. Although they are receptive to the potential of comparative and connected histories, scholars such as Polonia and Patrick Manning have missed out on the potential for writing about maritime disease and health from a global history perspective.[93] This thesis takes a global history approach in its explication of the connections across oceanic sites and actors in regard to disease and hygiene. It is aware that imperial history cannot be neatly folded in global history, and asymmetries of power and diversity of colonial experience need to be stressed.[94] Through a study of the interrelationship between European seamen, ports, the sea, and imperial politics, it will seek to understand how the discourses arising from public health predicaments upheld or disrupted the dominant ideologies of racial and social hierarchy within the British Empire. Reading various sources including administrative reports and official statistics, magazines, medical treatises, news articles and letters to periodicals using the explanatory framework of medical and maritime history, it will explore the complex world of peripatetic people from several interconnected angles.

92 Mark Harrison, "A Global Perspective: Reframing the History of Health, Medicine, and Disease," *Bulletin of the History of Medicine* 89, no. 4 (2015): 646.
93 Patrick Manning, "Global History and Maritime History," *International Journal of Maritime History* 25, no. 1 (2013): 1-22.
94 Tony Ballantyne and Antoinette Burton, *Empires and the Reach of the Global 1870-1945* (Cambridge, MA: Harvard University Press, 2014); Simon J. Potter and Jonathan Saha, "Global History, Imperial History and Connected Histories of Empire," *Journal of Colonialism and Colonial History* 16 (2015), http://muse.jhu.edu/journals/journal_of_colonialism_and_colonial_history/vo16/16.1.potter.html.

Structure of the thesis

Chapter 1 examines the intersection of maritime and tropical medicine in an age of increased imperial responsibility. It shows the importance of seamen's health for the development of the knowledge of disease and medicine in the nineteenth century, which can be understood through a study of the treatises and articles written by British naval surgeons and physicians, and reports of assemblies and conferences. By looking at knowledge produced in Britain, in transit, and in the India, this chapter describes how the understanding of tropical diseases emerged as a medical field constructed around the question of the impact of climate on the European body, and the development of climate- and body-specific preventive medicine.

The next chapter looks at medical writings on the prevention of diseases associated with long journeys such as scurvy, the necessity of sanitary reform, the improvement of diet and ventilation on board ships, and the medical guides provided to ship captains. It analyses the state of seamen's health in Indian port cities, based on the writings of British medical practitioners at naval and general hospitals for Europeans in India. It explores the implications of empirical observation and experiment on seamen's diseased bodies in Britain, on board ships, and in India on the development of tropical hygiene.

As the health of seamen in port cities became important for ecclesiastical, naval and urban authorities, a number of reform initiatives came into force. Taking these reforms into consideration, chapter 3 argues that moral reform of seamen acted as a substitute for hospital medicine in nineteenth-century India as part of a global Christian mission of protecting seamen's health and morality. Christian missionaries became seamen's moral guardian and tried to regulate their behaviour through temperance and acceptable forms of entertainment. They often collaborated with state officials and

sanitary reformers in curbing the problems of desertion, destitution, and crimping, which were a reason for seamen's ill health and death. The chapter will largely focus on the operation of Sailors' Homes as the nodal points of health and behavioural reform.

The consumption of liquor and its adulterated forms was recognised as a detrimental influence of European seamen's morals and physical health. Addressing this issue, chapter 4 argues that regulation of seamen's drinking was influenced by the contemporary developments in imagining drunkenness as a social and a health problem, anti-vice activism, and recognition of adulteration as a serious threat to health. It begins with an analysis of the meanings of drinking and drunkenness in a transnational context, emphasising various debates in Britain and India about the necessity for regulation. Then it plods though the fight of British colonial officials against drunkenness and adulteration of liquor. It will enquire if India's image as a diseased and dangerous space had a role to play in the colonial state's management of the liquor problem, public health, and law and order.

Chapter 5 examines how seamen were sought to be protected from cholera on board ships and in Indian sailortowns, so that they did not jeopardise maritime commerce and carry cholera back to Europe. Though ship's passengers have been given the maximum attention in the literature on nineteenth-century epidemic diseases, seamen were no less important as victims and vectors of cholera. The chapter analyses the medical resources mobilised for preventing and treating cholera through the century, and water and sewage management on board ships and in Indian port cities. The ideas of sanitation, contagion, and quarantine, it argues, cannot be understood unless one studies the agency of the most mobile section of people.

CHAPTER 1

British maritime medicine, ship surgeons, and tropical hygiene

In early March 1837, Dr Alexander Grant boarded a 1,400-ton merchant ship from Gravesend for Madras, Calcutta and Canton.[1] He was responsible for 103 seafarers including officers, servants and sailors. Many seamen fell ill in the first few days of the journey in severe rain and snow. The patients, too many to be held in the small sick room, were made to stay among the healthy people. The lack of a sanitary environment delayed their recovery, which in turn disrupted the lives of the healthy crew members. As the only person on board with some knowledge of medicine, Grant was at once a surgeon, an apothecary, and a nurse. In the detailed notes he published serially in the *Medical Times*, he fretted over how different the symptoms of diseases were from their descriptions in medical textbooks in Britain. This made diagnosis and treatment difficult. Some of his patients, for example, with symptoms of both influenza and inflammatory fever, were detected with a fever not yet classified by European doctors. Grant's experience reflected a general concern among ship doctors, whose first-hand observations of diseases of the warm climates differed from existing knowledge.

In the eighteenth century, the study of prevention and treatment of diseases became critically important for reducing mortality in the British armed forces. The development of medicine in the early days of the Empire owed much to medical practitioners in the military services, whose studies of members of the armed forces in non-European disease environments helped refine medical theories and establish military medicine as a branch of the medical

[1] Alexander Grant, "Young Surgeon on Shipboard – Chap II," *The Medical Times* 3, no. 56 (October 17, 1840): 29.

sciences.[2] Surgeons in the British Army played an important role in facilitating circulation of medical knowledge between the metropole and the periphery, starting in the eighteenth century, if not before. As Erica Charters writes, surgeons in Britain collected and examined the recorded experiences of even 'lowly' military surgeons during the Seven Years' War as 'reliable observations and informed medical judgments.'[3] Irrespective of how accurately they presented the data and interpreted their observations, these writings added to the body of scholarship on tropical diseases. It has been pointed out that they examined a rather small variety of diseased bodies, as nearly all of their patients were young European men.[4] The variety of patients changed in the late eighteenth century as many non-white soldiers were inducted into the British Army, giving surgeons the empirical benefit of observing both white and non-white soldiers under the same climatic conditions.

Mark Harrison ascribes importance to military hospitals as the leading centres of medical activity, and military and naval surgeons led the way in developing new theories of the relationship among disease, place, climate and race. Their expertise was sought after following their return to Britain at the end of their colonial career. Some of them, who were employed in fever hospitals in Britain, applied the knowledge gained from their experience in colonial hospitals, were regarded as authorities on ailments such as fevers, dysentery, and hepatitis.[5] Drawing upon Harrison's study, Suman Seth has explored the hardening of a racialised medical culture in the context of Caribbean slavery and abolitionism, which he suggests was built around medical theories developed through the exchange of ideas of

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2 Catherine Kelly, *War and the Militarization of British Army Medicine, 1793-1830* (London: Pickering & Chatto, 2011).
3 Erica Charters, *Disease, War and the Imperial State: The Welfare of the British Armed Forces during the Seven Years' War* (Chicago: University of Chicago Press, 2014), 35.
4 J.D. Alsop, "Warfare and the Creation of British Imperial Medicine, 1600-1800," in *British Military and Naval Medicine, 1600-1830*, ed. Geoffrey L. Hudson (Amsterdam: Rodopi, 2007), 37.
5 Mark Harrison, *Medicine in an Age of Commerce and Empire: Britain and Its Tropical Colonies, 1660-1830* (Oxford: Oxford University Press, 2010).

surgeons in the British metropole and colonies.[6] The insights the doctors gained through daily interactions with their patients proved invaluable in developing new understandings of disease and climate.

Situated at the centre of the East India command of Britain's maritime empire, which stretched from the Isthmus of Suez to the north to the island of Tasmania to the south, India provided an ideal context for observing the diseases of the tropics. The East India and China stations were infamous for their high mortality rates for the naval forces. The average daily sick rate from 1856 to 1858 was 93 per 1,000 men, considerably higher than 68 men in the second-placed West Coast of Africa station.[7] Philip Curtin estimated that overall European mortality being four times higher in West Africa than in South Asia and the West Indies in the 1840s.[8] This indicates seamen were more likely than other classes of Europeans to succumb to diseases in Asia than in Africa station. The surgeons on board naval and merchant ships, and those working for the Presidency governments, documented the diseases in these regions and helped expand the knowledge of medicine in Britain. Seamen of non-white races such as lascars rarely featured in treatises written by naval surgeons, and when they did, they served as entities for comparative analysis rather than subjects of study.

This chapter examines the writings of British surgeons, who had little personal experience of maritime life in the tropics and based their writings on statistical accounts and surgeons' diaries, and the ship surgeons who travelled in tropics and documented their experiences. Naval physicians and surgeons who seldom left Britain relied on the case reports of surgeons, apart from captains' logs and statistical reports, in writing authoritative texts on seamen's health and diseases in the tropics. Ship surgeons published their own treatises with a

6 Suman Seth, *Difference and Disease: Medicine, race, and the Eighteenth-Century British Medicine* (Cambridge: Cambridge University Press, 2018).
7 Gavin Milroy, *The Health of the Royal Navy Reconsidered* (London: Robert Hardwicke, 1862), 9.
8 Philip D. Curtin, *The Image of Africa: British Ideas and Action, 1780-1850 Volume 1* (Madison, WI: University of Wisconsin Press, 1964), 71.

wealth of information on new symptoms, ailments, and remedies. The chapter analyses the extent to which the expression of racial pathology in maritime medical writings and reports was rooted in ideas about the relationship between health, location and bodies in transit. Over the course of the nineteenth century, this relationship informed, among others, two major discussions of the time: the impact of tropical climate on the physical constitution of the European body, and the development of climate- and body-specific preventive medicine.

The maritime medical practitioners

In modern maritime Britain, the responsibility of keeping naval and merchant seamen healthy rested upon physicians, surgeons, and sometimes ship captains. Hospitals had been established in the busiest British ports by the end of the eighteenth century. The number of surgeons in the Royal Navy increased from 550 in 1794-95 to 720 in 1806. The first *Steel's Navy List* from 1814 enumerated the employment of 14 physicians, 850 surgeons, 500 assistant surgeons, 25 apothecaries and 50 hospital mates in the Navy.[9] Naval surgeons and physicians had different functions as medical practitioners. Physicians worked with a fleet or at naval hospitals after obtaining their medical degrees. They were employed as medical officers, well-paid, and very few in number. They reported directly to the admiral or commander-in-chief, stayed either with the flagship or the hospital ship, supervised the surgeons working for the ships under a squadron, examined the invalids, wrote annual reports, and inspected the medical inventory for the fleet. They did not perform surgery on patients, which, according to historian Roy Porter, 'bred an enduring medical division of labour in which surgery was viewed as inferior, and the

[9] Lawrence Brockliss, John Cardwell and Michael Moss, *Nelson's Surgeon: William Beatty, Naval Medicine, and the Battle of Trafalgar* (Oxford: Oxford University Press, 2005), 11; In comparison, the army had over 60 physicians, a surgeon and two assistants on an average for every regiment of over 500 soldiers, and a separate medical establishment for the artillery. Peter Mathias, "Swords and Ploughshares: The Armed Forces, Medicine and Public Health in the Late Eighteenth Century," in *War and Economic Development: Essays in Memory of David Joslin*, ed. J.M. Winter (Cambridge: Cambridge University Press, 1975), 74.

work of hand not head.'[10] Paid less than their counterparts in the army, they protested in the late eighteenth century under the lead of Sir Gilbert Blane, then a Commissioner of the Sick and Wounded Board and physician to St Thomas' Hospital. Although the payment discrepancy was not resolved, naval physicians were appreciated for their investigation of disease and efforts in preventive medicine and dietary improvement.

Surgeons, colloquially called the ship's doctor, were trained by the Company of Barber-Surgeons till 1745 to treat casualties on board without really understanding the nature of diseases. The latter usually apprenticed with elder surgeons and passed an examination at Surgeons' Hall. Successful candidates received a certificate that enabled them to apply for jobs to treat patients at sea, appointments that physicians would not take up because of the hardship of living on board ships. Surgeons often refused to look after the health of the ship's crew, arguing they were employed to treat passengers. This model of employment of naval surgeons was widely criticised as the Parliament became anxious about any incompetent person becoming a naval surgeon after spending some time learning how the human body works, writing a thesis, or simply paying for the certificate, and later jeopardising the lives of seamen. In 1745, surgeons started training under the Company of Surgeons, reading on anatomy, botany, chemistry and surgery. By 1780, most the naval surgeons were medical school graduates who passed first a rigorous course of study and then an interview, in which their knowledge of human body, diseases, and treatments was tested, before their appointment as assistant surgeons in the navy.[11]

These assistant surgeons, called surgeon's mates before 1805, attended patients, maintained medical instruments and kept records of medicines and expenditure before they were promoted to the rank of surgeon. The surgeon became a physician when appointed chief

[10] Roy Porter, *Blood and Guts: A Short History of Medicine* (London: Penguin, 2002), 110.
[11] Christopher Lloyd and John Coulter, *Medicine in the Navy, Vol. 3* (London: E & S Livingstone, 1961), 10-11.

medical officer of a hospital or fleet. A new position of staff surgeon was created in 1855, who looked after dockyards, marine infirmaries, naval hospitals, flagships on foreign stations, and hospital ships.[12] Not all these surgeons were equally adept at their job but their image had considerably improved from the days of the barber-surgeons. The poor reputation of surgeons could be attributed to a general misunderstanding of the nature of their work and isolated terrible experiences of some of the narrators with surgeons on board ships, as Iris Bruijn's shows in her research on the history of the Dutch East India Company's surgeons.[13] Such characterisation of surgeons as victims of perception could be true for the British context as well.

Surgeons purchased their personal medical instruments and medicines and then approached the shipping company for a job. The small fee they received from every medical examination defrayed the initial investment. They dealt with a wide range of surgical (from wounds and cuts to burns and fractures) and medical cases (from tropical fever to frostbite) than army doctors.[14] Despite their relative lack of experience in war surgery than military surgeons, they were more resourceful due to their greater autonomy and responsibility at work, at least from the mid-nineteenth century.[15] Those working in passenger ships additionally delivered babies and took ante- and post-natal care of mothers and their newborn children. They stitched wounds, set sprained limbs and broken bones, operated on hernia and other ailments, and sometimes did post-mortems.[16]

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12 David McLean, *Surgeons of the Fleet: The Royal Navy and its Medics from Trafalgar to Jutland* (London and New York: I.B. Tauris, 2010), 32.
13 Iris Bruijn, *Ship's Surgeons of the Dutch East India Company: Commerce and the Progress of Medicine in the Eighteenth Century* (Leiden: Leiden University Press, 2009).
14 Peter Stanley, *For Fear of Pain: British Surgery, 1790-1850* (Amsterdam and New York: Rodopi, 2003), 98-99.
15 John Shepherd, *The Crimean Doctors: A History of the British Medical Services in the Crimean War, Vol. I* (Liverpool: Liverpool University Press, 1991), 55.
16 Robin Haines, *Doctors at Sea: Emigrant Voyages to Colonial Australia* (Basingstoke: Palgrave Macmillan, 2005), 8.

Ship surgeons kept a journal and maintained a day to day record of the ill onboard including their names (with divisions of those taken ill during the outward voyage, in ports, and on the homeward voyage), medical problems, symptoms, locations (latitude-longitude or region) of illness, time of illness, treatment methods, time in care, recovery, death. The most notable case histories and observations during the voyage were discussed in more details at the end of the journal. The surgeons were expected to visit the patient twice or more frequently if required. The condition of the ill was reported to the ship captain on a regular basis especially if the disease was found to be contagious in which case the patient was isolated from the rest of the crew members. If a specific patient needed additional care, food and drink supplies, and articles or further comfort, an application had to be made to the commander, its outcome recorded, and those particular cases discussed in details. Once the ship completed its journey, surgeons calculated the numbers of embarkation, ill patients, and recovered or dead patients. This detailed journal was submitted for verification and certification to the physician appointed by the company, and later passed on to the shipping office at the East India House for processing the payment of surgeons.[17]

The living quarters and work stations for surgeons on board ships were usually inconvenient and difficult. They constantly complained about the insanitary condition in which patients were kept and the lack of a well-defined and well-equipped work station. Lind wrote, 'The place commonly allotted for the sick, is either the fore part of the gun deck, called the bay, which is the most damp and unwholesome part of a ship; or, what is nearly as bad, and very incommodious, the fore part of the hold. Both these confined places have too often proved a seminary of infection to her whole company.'[18] He recommended keeping patients in the forecastle, below the deck in the frontal region where the crew stayed, in warm climate in order

[17] "Instructions for Ship Surgeons," *The Asiatic Journal* 25 (March 1828): 378-79.
[18] James Lind, *Two Papers on Fevers and Infection* (London: D. Wilson, 1763), 96.

to protect them from rain and dampness. Before the 1790s, surgeons stayed on the lowest deck, usually below the water line, in a space lit by lanterns and without fresh air. They treated the wounded and the ill at the latter's berth and performed surgery on a table, or a cluster of wooden chests if a table was not available, at their own living quarter. After 1790, ship designers started building a permanent place for the sick below the front deck, with natural light and fresh air. As shipbuilding advanced through the nineteenth century, the larger size of ships did not automatically lead to more spacious quarters for seamen. Merchant ships were especially notorious for allocating very small spaces for their crew. It took several shipping acts to persuade them to commit to upholding the standard for healthy living on board ships.

Surgeons were initially ranked low in the ship's hierarchy of officers.[19] On naval vessels, the executive authority lay (as with the army) with combatant officers or the most senior officers on board though surgeons always decided what measures to implement to deal with an epidemic for example and he would ultimately take responsibility for the hygienic condition of the ship. In 1804, a memorandum was drafted to increase the payment, supply free medicine, and provide surgeons with uniforms, all of which cost £41,726-9s-2d. An Order in Council on 23 January 1805 mandated equal status for naval and military surgeons. The Admiralty raised the fees of surgeons after the Napoleonic Wars as their service became essential.[20] The government thus expected to persuade qualified candidates to join the service.

It was not until 1838 that the pay and rank of assistant surgeons were elevated to nearly the same standing as for their military counterparts. The campaign conducted by a number of doctors and parliamentarians, particularly Thomas Wakley, editor of *The Lancet*, was instrumental in the reconsideration of the status of naval surgeons. A Commission of inquiry

19 R.S. Allison, *Sea Diseases: The Story of a Great Natural Experiment in Preventive Medicine in the Royal Navy* (London: John Bale Medical Publications, 1943), 113-15.
20 Lloyd and Coulter, *Medicine and the Navy, 1200-1900*, 32.

into military and naval expenditure in 1838-39 reported continuing discrepancy in regard to rank, salary and retirement conditions between military and naval surgeons. An article in *The Lancet* claimed that not only were assistant surgeons poorly paid, they also succumbed in droves to 'the baleful shores of the West of Africa, the West Indies, and the other unhealthy climates of [Britain's] tropical colonies.' While the rate of death among British citizens at the time was 11 in every 1000 people, 34 out of 1000 assistant surgeons were known to die on duty.[21] The author argued that the threefold increase in likelihood of death should be recompensed by pay hike. This did not happen and as the Commission report from 1847 suggests, every medical rank in the navy was below in pay and respect than the same rank in the army. The inferior status of assistant surgeons in the Navy was responsible for many young surgeons preferring the Army.[22] Sending surgeons out on duty to ships travelling a vast distance became difficult and only the new recruits could be convinced to undertake these journeys at this time [23] The disparity not only demoralised naval surgeons, but 'embarrassed' an entire section of practitioners who desired equality. Later, in the 1850s, the public concern for the plight of seamen in the West Africa Squadron provided further impetus to improvement in naval health and raising the pay and rank of naval surgeons.[24]

The discrepancy between the privileges of military and naval surgeons became a matter of debate in the 1850s. In a parliamentary debate on 8 April 1850, former army Capt. Henry Boldero stated that an army assistant surgeon could interact with the regiment's commander

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21 *The Lancet* 2 (June 16, 1838): 406.

22 An excellent example was Dr Henry Marshall, who started his career as a surgeon's mate in the Royal Navy in 1803 and shifted to the Forfarshire Militia as an assistant surgeon in 1805. He went to become "a respected naturalist, a gifted historian, the first medical officer in the British army to compile vital statistics of troops garrisoned throughout the Empire, and he was the foremost early Victorian advocate of army reforms to benefit enlisted men." Richard L. Blanco, "Henry Marshall (1775-1851) and the Health of the British Army," *Medical History* 14, no. 3 (1970): 260.

23 A Naval Medical Officer, *An Exposition of the Case of the Assistant-Surgeons of the Royal Navy* (London: John Churchill, 1849).

24 Mark Harrison, "An 'Important and Truly National Subject': The West Africa Service and the Health of the Royal Navy in the Mid Nineteenth Century", in *Health and Medicine at Sea, 1700-1900*, eds. David Boyd Haycock and Sally Archer (Woodbridge: Boydell & Brewer, 2009), 108-27.

and other officers, live in comfortable quarters with a proper study, and expand his professional knowledge. A naval assistant surgeon, despite similar education, lived in the cockpit with teenage naval cadets and slept in hammocks or cots, with little opportunity to keep abreast of the latest developments in medical science. To make matters worse, an army assistant surgeon travelling on a ship would be accommodated in a ward room, which the ship's doctor could not access. Even carpenters, gunners and boatswains had their individual cabins. Boldero argued that the inferior status of the naval surgeon meant the better candidates would not opt for maritime service. Admiral Sir James Dundas opposed his remark, saying that the number of applications for naval service was on the rise. He added that on board experience was highly educative for naval surgeons, and offering them separate cabins would be injudicious. Admiral Maurice Berkeley too thought the present system was perfect and would not deter bright young medical students.[25] The naval authorities were clearly not inclined to act upon the complaints made by naval surgeons.

It is interesting to note that a compliant racial identity was a requisite for being a naval surgeon. Later in the nineteenth century, the eligibility criteria for taking the examination for naval medical service included qualification to practice both medicine and surgery, registration under the Medical Act, and a certificate of moral character. Furthermore, the candidates were required to be between the ages of 21 to 28, healthy, and descendants of 'unmixed European blood'. The condition was relaxed for entrants to the Indian Medical Service, who could be 'natural born subjects of Her Majesty'.[26] The entrance examinations took place in London in February and August each year. Successful candidates did a course of naval hygiene at Haslar Hospital in preparation for active duty. Their salary remained the same from the 1870s till the end of nineteenth century. The racial policy could have served two purposes: it ensured that

[25] "Supply – Medical Officers in the Navy," *House of Commons Debate* 110 (April 8, 1850), 3-14.
[26] "The Army, Navy, and Indian Medical Services," *The Lancet* 124, no. 3185 (September 13, 1884): 463.

naval servicepersons were loyal to the crown, as serving in the Navy entailed military responsibilities as well as medical commission; and whiteness gave surgeons a ground of authority over European seamen, who were generally disdainful and probably would not have trusted or taken orders from a non-white person.

ROYAL NAVY.

Rank.	Daily pay.	Half-pay.	Gratuities and retired pay. Rank.	Gratuity.
	£ s. d.	£ s.		
Surgeon	0 11 6	0 6	Surgeon and Staff.	
aft. 2 years' f. p. in rank	..	0 7	‡Surgeon:	
4 ,,	0 13 6	0 8	aft. 8 years' f. p.	£1000
6 ,,	..	0 9	12 ,,	1500
8 ,,	0 15 6	0 10	16 ,,	2250
10 ,,	..	0 11		
Staff Surgeon:				
on promotion	1 1 0	0 12		
aft. 2 years' f. p. in rank	..	0 13		
4 ,,	1 4 0	0 14		
6 ,,	..	0 15		
Fleet Surgeon:			Fleet-Surgeon.	Daily.
on promotion	1 7 0	0 17	aft. 20 years'	£1 0 0
aft. 2 years' f. p. in rank	..	0 18	24 ,,	1 2 6
4 ,,	1 10 0	0 19	27 ,,	1 5 0
6 ,,	..	1 0	30 ,,	1 10 0
8 ,,	1 13 0	..		
Deputy Inspector-General:				
on promotion	2 2 0	1 5		1 15 0
aft. 2 years' f. p. in rank	..	1 7		
4 ,,	..	1 9		2 0 0
Inspector-General	2 15 0	1 18		

The half-pay, retired pay, and gratuities on retirement are liable to reduction in cases of misconduct.

When an officer retires or withdraws *on a gratuity* his widow and children will have no claim to pension or compassionate allowance.

The hospital allowances for Medical Officers at home and abroad in lieu of provisions for themselves and servants and for fuel and light, are as follows:—

Rank.	At home.	Abroad.
	£	£
Inspector-Generals of Hospitals	85	130
Deputy Inspector-Generals	67	112
Fleet Surgeons and Staff Surgeons	5	112
Surgeons	39	108

Figure 1.1: Medical ranks in the Royal Navy. 'The Army, the Navy, and Indian Medical Services,' *The Lancet* 154, no. 3966 (September 2, 1899): 644.

Surgeons with merchant services worked under even greater constraints. All East India Company ships were required to have a surgeon on board, but one cannot ascertain if rules were followed. Most shipping companies were forced to employ surgeons only after the Merchant Shipping Act of 1894 stipulated having a surgeon on board ships with more than 100 passengers.[27] Earlier, unscrupulous ship owners often employed young apothecary apprentices or sons of druggists as surgeons in exchange for a modest sum of money or passage to a new continent. The government provided gratuity money, usually 15s. for every soldier to be transported to India, for appointing surgeons on ships. Ship owners reportedly pocketed the money and paid the doctor £20, sometimes nothing.[28] In most cases, ship surgeons were either newly qualified young men who wanted to see the world without paying passage fare, or experienced practitioners who went to the sea to recuperate from ill health, and none of them stayed with a shipping company after a few voyages.[29] Many of the companies did not employ a surgeon, and asked captains to tend to their crew. These captains had to serve as a 'physician, surgeon, apothecary, obstetrician, dentist, and nurse,' and keep medical manuals, surgical and dental instruments, catheters and numbered medication handy at all times.[30] They relied on medical guides and medicine chests recommended and approved by the naval authorities for treating sick seamen on board.[31] It has been pointed out that ship owners were highly suspicious of surgeons being more concerned about their professional career than the interest of the shipping industry. To avoid paying their seafaring employees during illness, ship owners often demanded that surgeons declare ill seamen unfit for service so that they could discharge non-productive staff. Refusal was taken as a sign of arrogance and insubordination.[32] Such

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27 Tim Carter, *Merchant Seamen's Health, 1860-1960: Medicine, Technology, Shipowners and the State in Britain* (Woodbridge: Boydell Press, 2014), 51.
28 "The Delights of Serving as Surgeon in Merchant Vessels," *The Lancet* 44, no. 1101 (October 5, 1844): 61.
29 F.B. Ryan, "The Medical Service of the Merchant Marine," *The Lancet* 160, no. 4114 (July 5, 1902): 45-46.
30 Zachary B. Friedenberg, *Medicine under Sail* (Annapolis, MA: Naval Institute Press, 2002), 25.
31 Carter, *Merchant Seamen's Health*, 53-54.
32 Ibid, 57.

behaviour and substandard pay dissuaded many competent surgeons from joining merchant vessels, unless they were desperate for a job.

Several medical practitioners protested against the disdain showed towards surgeons in the merchant fleet. They pointed out the corrupt nature of these enterprises, which privileged financial profit from trade over safeguarding the people instrumental in their operations. The Naval Medical Reform Association, formed in 1855, collected fund for petitioning the Parliament for improving the employment regulation for assistant surgeons.[33] The association was dissolved in 1858 as the objective succeeded.[34] The regulation did not necessarily improve the treatment of surgeons. On his return from Calcutta in December 1876, medical officer Edward Piggott was summoned to meet one of the managing directors of the Peninsular & Oriental company. In the meeting, he was asked by the company's senior surgeon to retract his candid observations on the ship's insanitary condition during the journey. As he declined to do so, he was promptly discharged from service. Piggott urged the Board of Trade to take up exclusive right to appoint medical officers, which he thought would give these officers greater freedom and prevent shipping companies from interfering with the work of surgeons.[35] No such regulation came to pass, so merchant surgeons were in for little relief.

The discussion of surgeon's work in the British naval and merchant services points out, chiefly, that maritime administrators did not adequately recognise the importance of surgeons as the primary scientific agency for understanding shipboard diseases. The lack of respect, remuneration and resources was probably due to the administration's intention to cut costs, which is evident in the mercantile context. Under such circumstances, it was difficult for surgeons to fulfil their scientific interest in studying the relationship of topography, disease and

[33] T. Holmes, "Naval Medical Reform Association," *Association Medical Journal* 3, no. 125 (May 25, 1855): 492.
[34] T. Holmes, "Naval Medical Reform Association," *British Medical Journal* 1, no. 71 (May 8, 1858): 380.
[35] "Sanitation at Sea," *The Lancet* 136, no. 3500 (September 27, 1890): 691.

climate. The next section will discuss the historiography of their role in the making of the tropics and tropical diseases as subjects of knowledge.

The warm climate as a medical problem for European seamen

The regions indicated as tropical in British medical discourse varied considerably in climate, vegetation and nature of diseases, while the term 'tropical disease', that was first used by Benjamin Moseley, a naval surgeon in the late eighteenth century, became an umbrella term for uncommon ailments or those believed to have originated outside the temperate zone represented by Europe.[36] A distinct branch of medicine – the medicine of warm climates – developed in response to the diseases endemic in these regions. It was shaped by a combination of military and naval medicine, and commercial motives. British military and naval surgeons in South and Southeast Asia, Africa, and in the Caribbean Islands wrote extensively on these diseases. They tested, corroborated, challenged, and revised the ideas promoted by the medical practitioners in Britain. Their first encounters with people and places of a completely different character led them to question the disease theories encapsulated in medical textbooks. They made excellent use of their experience in revising the theories of disease and treatment when they returned to Britain.[37] Their writings were often found have been embedded deeply in the social and political context of their production, which was manifested profoundly in the opinions about acclimatisation and tropical ailments. Medical practitioners in Britain consulted this body of medical texts, essays and pamphlets on tropical diseases to further their understanding of health and disease beyond the West.

[36] Benjamin Moseley, *A Treatise on Tropical Diseases* (London: T. Cadell, 1792).
[37] Harrison, *Medicine in an Age of Commerce and Empire*, 4-5.

The tropical climate appeared to endanger Europeans more than the denizens of tropical lands, generating a 'fear of hot climates' or anxiety about the detrimental effect of particular places on the unacclimated bodies of newly arrived people.[38] The anxiety was informed by to an extent by humoral theory, which suggested that exposure to new climate, especially hot climate, affected the balance of bodily humors. In the nervous theory of disease, temperature and other external factors were known to affect nervous balance, leading to problems affecting organs or the circulation and accumulation of bodily fluids such as bile. Long before the germ theory of disease gained in popularity, surgeons had created a medical dogma based on the humoral theory for ascertaining the nature of diseases. The effects of new diseases encountered by Europeans in tropical climates, such as yellow fever and malaria, were usually described in horrifying detail in medical texts.[39] Eighteenth-century naval surgeons such as Charles Curtis believed that Indian and European bodies responded differently to climate and disease.[40] A number of British surgeons expressed the opinion that exposure to tropical climate, local people, and exotic food in India and other tropical regions were more dangerous for Europeans than the indigenous people.[41]

Suman Seth has argued that 'climatic, cultural, and dietetic explanations of racial disparities' was the dominant medical discourse throughout the eighteenth century.[42] He shows, drawing upon the Caribbean context, that British surgeons were influenced by the Hippocratic paradigm that human constitution was shaped by their geographical location. They

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[38] Karen Ordahl Kupperman, "Fear of Hot Climates in the Anglo-American Colonial Experience," *The William and Mary Quarterly* 41, no. 2 (1984): 213-40.
[39] David Arnold, "India's Place in the Tropical World, 1770-1930," *The Journal of Imperial and Commonwealth History* 26, no. 1 (1998): 1-21.
[40] In view of the perceived uniqueness of India, Curtis considered every known disease he encountered in the country as a somewhat distinctive variant of its European form. Several other surgeons expressed their conviction that multiple forms of diseases like hepatitis and dysentery occurred only in India. Curtis helped develop area-specific expertise in medicine by his detailed observations on how Europeans should conduct themselves in tropical climate. Charles Curtis, *An Account of the Diseases of India, As They Appeared in the English Fleet, and in the Naval Hospital at Madras, in 1782 and 1783* (Edinburgh: W. Laing, 1807).
[41] Mark Harrison, "The Tender Frame of Man: Disease, Climate, and Racial Difference in India and the West Indies, 1760-1860," *Bulletin of the History of Medicine* 70, no. 1 (1996): 68-93.
[42] Seth, *Difference and Disease*, 248.

assumed that Africans, Europeans, and Creoles developed different physiologies on account of their distinct environmental surroundings, which was also responsible for their different degrees of susceptibility to diseases. Seth thinks that the attenuation of climate's importance in writings of this genre undermined the notion of intrinsic difference between people from different geographical regions. Nevertheless, the difference in dietary habits and behaviour, as determining factors of one's resistance to disease, helped keep a distinction between races.[43] It was thought that these extraneous factors could be amended through 'seasoning' – adapting to a different climate through a period of stay. The early texts were optimistic about the ability of Europeans to acclimatise to tropical climate over a period of time. The main impetus behind this optimism came from the experience of surgeons in treating indigenous people, who apparently were not affected by 'seasoning sickness.' Underlying this belief was the assumption that race was mutable and can be influenced by environment.[44] A majority of diseases were thought to be generated by environment rather than individual behaviour in this period.

The eighteenth-century medical literature focused on the characteristics of a single regions, while in the nineteenth century the focus largely shifted to similarities or differences between various regions. When writing about the diseases of warm climates in more than one region, especially when explaining why a disease like yellow fever occurred in the West Indies but not in India, some surgeons suggested that certain diseases were endemic in specific regions. In their explanation of why a disease occurred in various forms and intensities in a region, cultural differences such as diet, clothing, housing and behaviour, rather than climate, were foregrounded, gradually and never completely, as causes of the different degrees of

[43] Ibid, 262.
[44] Mark Harrison, *Climates and Constitutions: Health, Race, Environment and British Imperialism in India, 1600-1850* (New Delhi: Oxford University Press, 1999).

people's susceptibility to disease.[45] The idea met with more scepticism after the 1820s as Europeans showed little sign of conquering adverse climate. Finally, by the 1850s, race was firmly established as immutable and the hope of adapting to alien climates through residence discarded.[46] By examining people of different physiologies, colonial surgeons more often than not emphasised race as a visible and dominant factor in the degree of one's vulnerability to disease.[47] The diseases causing high mortality among Europeans received a broad-brush designation as tropical, though some of them were prevalent only in a specific location.

As the point of origin of most epidemic diseases, India had been an important site for studying tropical diseases since the late eighteenth century.[48] The geographic and climatic influences on health was elaborated in a series of medical topographic works on British India. These surveys helped to form an ideology of racial classification of places and people. Originating in surveys of the availability of resources in newly acquired Indian territories, medical topography was a method of mapping colonial territories to indicate which regions were beneficial or detrimental for the health of European settlers. Influenced by the theory that diseases were environment-specific, the authors of these topographies identified regions which would suit European settlements in India. They initially thought that years of residence in India and an appropriate living situation would help the outsider acclimatise to local conditions. The search for a logical explanation of the connection between health and environment took a racial turn by the 1820s. The opinion on difference now extended beyond the domain of medicine

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[45] Seth, *Difference and Disease*, 249. Harrison differs with Seth, suggesting that differences in the nature of fevers were explained also by local differences in climate and vegetation. In the case of some diseases such as malarial fevers and cholera, climatic and environmental factors remained important for a longer period, though other factors were accentuated from time to time.

[46] Warwick Anderson, "Disease, Race, and Empire," *Bulletin of the History of Medicine* 70, no. 1 (1996): 62-67.

[47] Harrison, "The Tender Frame of Man," 68-69.

[48] Towards the late nineteenth century, the region emerged as a 'laboratory' and an 'experimental field' for the study of the allied fields of medical sciences such as bacteriology. Several sites such as the tea plantation region of North Bengal, imagined to be hotbeds of specific diseases, were home to research centres and enabled medicine to act as a tool of constructing the British Raj. Pratik Chakrabarti, *Bacteriology in British India: Laboratory Medicine and the Tropics* (Rochester: Rochester University Press, 2012); Nandini Bhattacharya, "The Logic of Location: Malaria Research in Colonial India, Darjeeling and Duars, 1900-30," in *Medical History* 55, no. 2 (2011): 183-202.

into moral, political, aesthetic ideas of human behaviour, and racialised pathological anatomy. Most medical treatises promoted the idea that race determined physiological and intellectual capacities, which is why one race was better suited than another for certain tasks or living in a particular climate.[49] This theory also helped justify that Europeans and Indians were susceptible to different kinds of diseases, giving disease a racial dimension.

In his presentation to the Epidemiological Society of London in 1856, Dr Alexander Keith Johnston mentioned Europeans in the coastal regions suffered the most from dysentery, liver affections, fevers and rheumatism, while Indians were likely to contract leprosy, elephantiasis, guinea-worm, ophthalmia and beriberi. Diseases of the liver and bowel, not known to be fatal among Indian, apparently caused half the mortality of the European population.[50] Apparently, two characteristic features of the tropics were invented in the nineteenth century. First, the tropics promoted a notion of alterity that separated hot and humid tropical regions from the temperate climate of Western Europe. This climate-based marker of differentiation reflected the way non-European societies and ecologies were perceived in Britain. Second, using local elements such as particular drugs to combat diseases incidental to a specific region influenced Europeans doctors and travellers to conceptualise the indigene as the other – something without parallel in the world they had so long inhabited. As David Arnold argues, by classifying a part of the world as the tropics, the 'Western world' geographically, topographically, and environmentally segregate regions they had just begun to understand.[51]

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[49] There was often some ambiguity as to the influence of innate characteristics and cultural/educational factors, e.g. Ranald Martin's Medical Topography of Calcutta. Mark Harrison, "Difference of Degree: Representations of India in British Medical Topography, 1820-c.1870," in *Medical Geography in Historical Perspective*, ed. Nicolaas A Rupke (London: Wellcome Trust Centre for the History of Medicine 2000), 51-69; Wendy Jepson, "Of Soil, Situation and Salubrity: Medical Topography and Medical Officers in Nineteenth Century British India," *Historical Geography* 32 (2004): 137-55.

[50] Alexander L. Johnston, "On the Geographical Distribution of Health and Disease, in Connection Chiefly with Natural Phenomena," *Transactions of the Epidemiological Society of London* 2, no. 6 (1856): 31-32.

[51] David Arnold, "Introduction: Tropical Medicine before Manson," in *Warm Climates and Western Medicine: The Emergence of Tropical Medicine, 1500-1900*, ed. David Arnold (Amsterdam and Atlanta, GA: Rodopi, 1996), 6.

The tropics were construed as 'fiercely malevolent' for the health of Europeans 'even where they did not actually cause it', says Arnold, 'just as the abundant and tiresome insects, the rapid processes of putrefaction and decay, and the offensive smells of swamps and rotting vegetation added to the acute, indeed palpable, sense of tropical danger.'[52] This image of the non-European world generated presuppositions such as miasma that underpinned much of imperial medical writings throughout the nineteenth century. Medical topography lost its relevance in the 1870s as sanitation became the colonial government's preferred method of improving the environment.[53] The perception of the tropics as a pathogenic space arguably helped the British colonial state justify these sanitary measures. Regulating the bodies of subjects was now supplemented by ordering physical spaces in pathological terms.

The necessity of understanding the aetiology of certain diseases compelled British surgeons to locate them in isolated physical and cultural landscapes, which ranged from the vast landmass of India to the confined space of a ship. Writings on the colonial construction of India's environment as diseased have referred to the rich history of 'epidemiological exchanges and biocultural transferences' across the Atlantic.[54] In addition to military campaigns, writes David Arnold, the expansion of the maritime pilgrim trade, supported by railways and steamships, and the congregation of multitudes of pilgrims in overcrowded and insanitary port cities were responsible for the oceanic spread of epidemics. He acknowledged that colonial port cities were sparsely mentioned in accounts of disease transmission despite their epidemiological significance. As he wrote, places like Calcutta, Bombay and Hong Kong were

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[52] Ibid, 7.

[53] Harrison, "Difference of Degree."

[54] Alfred Crosby has argued that Europeans transmitted several infectious diseases to the indigenous American population during the voyages of exploration in the early modern age. The 'native' Americans, having no exposure and resistance to these diseases, readily succumbed to them. Emmanuel Le Roy Ladurie called such periodic widespread deaths 'bacteriological genocides', which had no parallel in other continents. Alfred W. Crosby, *The Columbian Exchange: The Biological Consequences of 1492* (Westport: Greenwood, 1972); Emmanuel Le Roy Ladurie, "A Concept: The Unification of the Globe by Disease (Fourteen to Seventeenth Centuries), in his *The Mind and Method of the Historian*, trans. Sián Reynolds and Ben Reynolds (Chicago: University of Chicago Press, 1981), 28-83.

important spaces of epidemiological study as disease entrepots where disease pathogens could be spread both inward to the port's hinterland by road and rail and outward though oceanic voyages:

> Moreover, by virtue of their geographical position and social characteristics, port cities might also be singularly suited as reservoirs and incubators of infectious disease. Nowhere was this more evident than in the case of Calcutta… The dissemination of cholera from Calcutta by soldiers and sailors, pilgrims and migrant labourers, reflected the wider patterns of human and disease mobility in India and throughout the vaster region of which it in some senses served as capital.[55]

Despite the troubling revelation of their innate incapacity to adapt to the tropics, European powers did not abandon their tropical empires. Soldiers and seamen were the most likely to be ill due to the nature of their jobs. A discourse of racial susceptibility to disease was drawn around their vulnerability, suggesting naturally acquired protection would help only to an extent, and precaution was the ideal way of avoiding disease. In particular, seamen, who spent most of their life in transit between places, received the least help due to the constraints of medical resources on board British vessels. Hospital ships and seamen's hospitals on shore offered curative medicine and surgery for the survivors of the voyage. Ship surgeons operated mainly with preventive medicine and the limited resource of the sick bay. Around this time, says William Bynum, preventive medicine was "imperfectly conceived, even less rigidly followed and in any case required a level of self-consciousness and economic security."[56] Seamen were unlikely to benefit from development of preventive medicine as medical supplies on board ships were most often substandard and easily exhaustible. The narratives of the

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[55] David Arnold, "The Indian Ocean as a Disease Zone, 1500-1950," *South Asia: Journal of South Asian Studies* 14, no. 2 (1991): 10.

[56] William Bynum, *Science and the Practice of Medicine in the Nineteenth Century* (Cambridge: Cambridge University Press, 1994), 55.

surgeon's struggle with limited resources, however, raise some interesting questions about the relationship among disease, environment and the European body.

British maritime medicine in the nineteenth century

Despite the obstacles and hardship of shipboard life, a number of ship surgeons did studies of tropical ailments that proved to be critical for advancing tropical hygiene. Living in proximity with their patients, often sharing their living quarters, helped them monitor diseases at all stages. They maintained detailed journals with case histories and observations on aetiology and improvement of sanitation on board ships. Additionally, as Elise Smith writes, they participated in debates over the classification and nature of infectious diseases in regard to the impact of geography, climate and contagion on the cause and transmission of disease. They also took atmospheric measurements and recorded every stage of illness to look for correlation between environment and disease.[57] The documentation of these systematic observations resulted in a large body of writings with a strong tropical hygiene focus.

Writings on maritime health and hygiene began in earnest in the mid-eighteenth-century coinciding with the high noon of British imperialism. The earliest books were on ailments commonly encountered in voyages to the Mediterranean, Equatorial Africa and the West Indies. The representation of South and East Asia in the books on the diseases of warm climates increased in the late eighteenth century. A 1793 catalogue of books on seamen's health published by J. Murray contained several works that referred to the diseases seamen encountered during their travels to South Asia.[58] Written by naval physicians and surgeons

[57] Elise Juzda Smith, "Cleanse or Die: British Naval Hygiene in the Age of Steam, 1840-1900," *Medical History* 62, no. 2 (2018): 191.
[58] *A Catalogue of Medical Books, Chiefly Those upon Diseases of Seamen, As Well As Those Incident to Hot Climates and in Long Voyages* (London, 1793).

such as Gilbert Blane, John Clark, Thomas Girdlestone, James Lind, Stephen Matthews, Frederick Thomson, Thomas Trotter and John Peter Wade, some of these books had multiple editions. The length of the list shows that writings on maritime health in tropical regions had enough takers among surgeons, medical societies and schools, and the naval authorities, though the popular appeal of these books cannot be discerned. Among these authors, Blane and Trotter's publications in the late eighteenth and early nineteenth centuries surveyed the diseases of seamen in various climatic conditions. Apart from theirs, the works of C.F. Vandeburgh, John Wilson, Thomas Turner, John MacDonald and others encapsulated the interrelationship between hospital and transit medicine. More importantly, surgeons such as Charles Curtis, James Johnson and Norman Chevers put their long periods of service in India to good use by studying new diseases from up close and reshaping British medical theories of tropical hygiene. Apart from educating medical personnel, the medical treatises on maritime health also served as popular guides for surgeons and ship captains for treating seamen on board.

The development of maritime medicine and hospitals in the late eighteenth and early nineteenth century owed much to the importance given to economic and efficient maintenance of naval manpower. Apart from the British, the French probably addressed the problem most efficiently. Michael Osborne's research on the development of colonial naval medicine in French ports and coastal settlements in the nineteenth century highlights the integration of local medical traditions into naval medicine, which was contrary to the ongoing standardising of medical knowledge in Paris.[59] Naval medical schools were established in the eighteenth century in the port towns Brest, Rochefort-sur-Mer, and Toulon, and later in the larger commercial port cities Bordeaux and Marseilles. These schools developed regionally distinctive naval medical knowledge to combat disease at sea and ports. Osborne argues that in the early-to-mid-

[59] Michael A. Osborne, *The Emergence of Tropical Medicine in France* (Chicago and London: University of Chicago Press, 2014).

nineteenth century, local institutions influenced the training of French doctors and practice of tropical medicine. These traditions of knowledge were later assimilated into naval and tropical medicine where applicable. The practice of treatment followed by French and indigenous surgeons in the colonies became increasingly standardised with the centralisation of the knowledge of health in France. Osborne states that the colonial medical careers of many of these surgeons were shaped by the depth of their embedding within French and colonial medical traditions. However, French naval medicine developed mostly independent of this homogenising tendency and owed more to local traditions of healing prevalent in specific port regions or areas in which the surgeon grew up or practiced.

Naval medicine developed in a more centralised way in Britain. Edinburgh and London emerged as the main centres of studying medicine. British naval physicians were highly regarded since their knowledge of disease prevention not only improved health in the Army and Navy but was also applied to sanitising cities and protecting the urban poor from epidemic and venereal diseases. Blane noted that the rate of sickness in the naval brigades fell from 1 person in 2.45 in 1779 to 1 person in 10.75 in 1813, while death rate in the same period diminished from 1 in 42 to 1 in 143.[60] It was evident from the scurvy mortality rate before and after 1795 that anti-scorbutic diet saved the lives of nearly 100,000 seamen between 1795 and 1814.[61] In his capacity as the Physician to the Fleet, Trotter put special emphasis on cleaning and fumigating the sick wards at hospitals, shifting toilets away from reservoirs of drinking water, keeping fever patients in isolation in well-ventilated rooms, and not allowing visitors.[62]

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60 Gilbert Blane, "Statements of the Comparative Health of the British Navy, from the Year 1779 to the Year 1814, with Proposals for Further Improvement," in *Medico-Chirurgical Transactions VI* (London: Longman, 1815), 539-40.

61 Thomas Trotter, *A Practicable Plan for Manning the Royal Navy and Preserving Our Maritime Ascendancy without Impressment* (London: Longman, 1819), 26.

62 Ibid.

Such attitudes professionalised medical services to a great extent, spreading awareness of public health.

The tendency among naval surgeons such as Lind and Blane to emphasise on 'rules of conduct' for preventing ship fever, and debate the efficacy of one's methods rather than discuss the correct aetiology, has led historian Thomas Osborne to aver, 'fever was more easily manipulated than defined.'[63] Such characterisation of fever resonates with Christopher Hamlin's observation on fever as a historical problem. According to Hamlin, the definition of fever must take into account several factors such as its status between a disease and a symptom; the classification and distinction between fevers; the detection of fever; and the theory of fever as a challenge to the body.[64] Osborne further stated that while maintenance of health in the eighteenth century was based on the individual's disciplined diet, exercise, rest, sleeping and waking, defecation and sexuality, the idea of preserving an individual as a way of protecting the collective changed in the nineteenth century. The government proactively imposed a general requirement of hygiene upon a community under a broad infrastructure of medicalisation.[65] The planning of indoors and outdoors architecture with the aim to segregate people from likely problems was precipitated by the increasing differentiation between the medical qualities of confined spaces and open air, wherein the way of living was given high importance as determinant of one's immunity.[66]

Royal Navy surgeons and physicians wrote several comprehensive treatises and reports on the mortality and morbidity of seamen that provides us with their conceptualisation of

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[63] Thomas Osborne, "Security and Vitality: Drains, Liberalism and Power in the Nineteenth Century," in *Foucault and Political Reason: Liberalism, Neo-Liberalism and Rationalities of Government*, eds. Andrew Barry, Thomas Osborne and Nikolas Rose (Chicago: University of Chicago Press, 1996), 109-10.
[64] Christopher Hamlin, *More Than Hot: A Short History of Fever* (Baltimore: Johns Hopkins University Press, 2014).
[65] Osborne, "Security and Vitality," 110.
[66] Vladimir Janković, *Confronting the Climate: British Airs and the Making of Environmental Medicine* (New York: Palgrave Macmillan, 2010).

disease. Lind observed that extreme change in temperature during voyages to the tropics usually induced plethoric disposition among sailors such as pain and dizziness of head, heaviness and dullness of the eyes, inflammation of tunica conjunctiva, breathing trouble, quickening of pulse, fever, and diarrhoea, for which naval physicians prescribed blood-letting. Once seamen were accustomed to the sultry tropical weather, they suffered illnesses such as inflammation of the bowels which became more severe when they returned to cold weather.[67] European seamen were more susceptible to rapid changes in weather than inhabitants of tropical regions. Their intemperance and choice of recreation rendered them more vulnerable to inflammation than any other group of people. Heat caused 'relaxation of the fibres' and 'expansion of blood and other fluids' among inexperienced seamen, leading to haemorrhage from the nose. Local and veteran seamen coped better with the change of weather, especially the locals who had developed more 'rigid fibres' and 'compacted blood' in the course of evolution.[68] Later surgeons discarded these observations as the humoral theory went out of favour.

Harrison gives Blane much credit for astutely framing his reform policies in economic terms, which made the Admiralty take his recommendations for hygiene and sanitation seriously. Blane's line of reasoning was preservation the health of the crew was less expensive than compensating for the 'ravages of disease.'[69] He identified several other problems such as pulmonic inflammation caused by people shifting between hot and cold places on ships. He suggested that seamen should sleep in warm places and avoid cold air which could be achieved by constructing air-pipes. He also warned against falling asleep in the open air, especially on guard duty, and recommended wearing apparels made of flannel and quick changing out of wet clothes in the tropical climate. He criticised the limited use of soap on board ships, which he

[67] Lind, *An Essay on the Most Effectual Means*, 128.
[68] Ibid, 130-31.
[69] Harrison, *Medicine in an Age of Commerce and Empire*, 69.

found startling since slop and tobacco were seen to be present in greater quantities in a seaman's possession. Since unkempt appearance was often punished and seamen usually lacked the money or particular currency to buy personal articles in foreign ports, the shipping company and the state should have ensured supply of the basic body care product. The soap made of double proportion of soda or barilla would have helped to negate the effects of saline water on skin. Like Lind, Blane too singled out intemperance for rendering sailors vulnerable to fevers and physical injury at work. Blane marked out several local diseases such as the 'swelled leg' of Cochin and the goitres of 'certain mountainous districts' that stumped unaware travellers. The most frequent and fatal disorder in India were dysentery and liver ailments. He reckoned the problem of typhoid could be circumvented by not overcrowding military transports as was often the case with shipments to the West Indies. Sending soldiers to India in small detachments might have saved them from typhus fever despite the oppressive heat at their destination.[70]

Trotter reported the increase of nervous disorders among seamen. Occurrence of a disease, thought of as an affliction of women and rich men, among the section of people known for living perilously, disturbed Trotter so much that he visualised the downfall of the British Empire in the corruption of its most robust men. He wrote that the increased wealth, leisure, and consumption engendered by commercial and imperial expansion had weakened the British people.[71] Harrison asserts that his 'medical analysis' of society comprised of seven occupations categories of people who were prone to various categories of ailments, and he mentioned persons returning from colonies to being debilitated by their exposure to the tropics.[72] Trotter was not an expert on tropical diseases as most of his medical career was spent as part of the Channel Fleet. His sole encounter with diseases of the hot climate was during his visit to the

[70] Blane, "Statements of the Comparative Health of the British Navy," *Medico-Chirurgical Transactions* 6 (1815): 536-37.
[71] Trotter, *Medicina Nautica*, 38.
[72] Harrison, *Medicine in an Age of Commerce and Empire*, 247.

West Indies in 1793. Hence, like Lind and Blane, he relied upon the accounts and statistics provided by ship captains and other surgeons such as James Johnson.

British maritime medicine influenced naval health in other countries. Dr Edward Cutbush, surgeon in the United States Navy, acknowledged his debt to the works of Lind and Trotter before itemising the necessary sanitary measures on board ships in order of importance. These were keeping the ship dry and well ventilated; instructing the crew to regularly clean themselves and their clothes; asking them to be careful against cold, fatigue and intoxication; using fire in the winter months to keep the living quarters warm; and providing the crew with nutritious food and clean water.[73] His suggestions about tackling contagious diseases on board ships included isolating the sick from the unaffected; maintaining the ship's cleanliness, dryness and ventilation; keeping sailors away from cold, fatigue and intoxicants; lighting fire to dissipate moisture between decks; and frequently whitewashing the berth deck with lime.[74] These and other instructions offered in the book mirrored the British treatises on maritime health that Cutbush often cited in the text. Such awareness and praise for British medical knowledge by the person whom historians consider to be the father of American naval medicine reflect the former's transatlantic recognition.

The narrative of medical treatises followed a pattern of setting the scene, providing evidence and interpreting data with an aim to understand the nature of diseases and prescribe their treatment. In addition to detailed descriptions of maritime health and hygiene, these books provide invaluable sources for understanding the transformation of medical writing. Written often in an engaging, personal style, the medical case reports of patients had detailed description of symptoms, treatment, and information on recovery or death. Margarette Lincoln

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[73] Edward Cutbush, *Observations on the Means of Preserving the Health of Soldiers and Sailors; and on the Duties of the Medical Department of the Army Navy with Remarks on Hospitals and Their Internal Arrangement* (Philadelphia: Thomas Dobson, 1808), 131-32.
[74] Ibid, 132.

has remarked that these books were written as guides for naval surgeons, mainly for their authors to achieve higher status among peers. They were particularly helpful for surgeons who had not received proper training and now had these texts in addition to their experience of treating patients.[75] The handbooks, essays and lectures on specific diseases and epidemics also brought public attention to naval affairs. People without easy access to hospitals and clinics often turned to treatises about military or naval health for self-treatment for common ailments. The editors of various periodicals such as the *Gentleman's Magazine* published articles on sailors' health in the belief that readers could learn treating wounds and chronic problems from them.[76] They also published reviews of medical treatises and articles on recent debates and developments in maritime hygiene.

The systematic gathering of health statistics in the navy started when Sir William Burnett, Director General of the Navy Medical Service, commissioned Dr John Wilson to edit the first *Statistical Report on the Health of the Navy* for the period 1830-1836. He showed an inclination to record-keeping on his appointment as a Medical Commissioner to the Navy in 1822, when he asked all medical officers of ships and hospitals to send him detailed accounts of their work, including mortality rate, causes of death, and methods of treatment.[77] They prepared three types of documents: a daily sick book, monthly or quarterly nosological returns, and a journal of medical and surgical practice. The sick book contained the 'name, age, quality, nature of disease or hurt, date of discharge from the list, and the issue of complaint, whether in cure, removal to hospital, invaliding, or death' of patients and was sent annually to the Director General.[78] The nosological returns listed all cases of disease and injury and submitted monthly by ships in home stations and quarterly by ships in foreign stations. They contained information

[75] Margarette Lincoln, "The Medical Profession and Representation of the Navy, 1750-1815," in *British Military and Naval Medicine, 1600-1830*, ed. Geoffrey L. Hudson (Amsterdam and New York: Rodopi, 2007), 202.
[76] Ibid, 203-4.
[77] McLean, *Surgeons of the Fleet*.
[78] *Statistical Reports on the Health of the Navy for the Years 1830, 1831, 1832, 1833, 1834, 1835 and 1836* (London: William Clowes and Sons, 1841), 7.

on the number of seamen discharged to duty, sent to hospital, dead, invalided, bedridden, convalescent etc. The journal kept detailed records of the symptoms of disease and injury, their treatments, and general remarks on the subject, and was submitted annually. Surgeons were encouraged to note the origins of diseases, weather conditions, temperature, the state of the ship's interior, and anything they considered could have bearings upon the health of seamen.[79]

In the preamble to an account of his experience on board a merchant ship headed to India and China, Dr Alexander Grant welcomed the publication of this book as the beginning of systematic recordkeeping. As he wrote, the rarity of comprehensive books on naval medicine and surgery meant doctors had to consult either journals or 'expensive' treatises on specific diseases such as scurvy, dysentery, and yellow fever for relevant information.[80] He expected the detailed report to address gaps in the knowledge of naval surgeons. The second volume, edited by Dr Alexander Bryson, covered the period from 1837 to 1843. Naval historian Christopher Lloyd wrote that Bryson's masterful grasp of statistics made this volume much more reliable and professional.[81]

Royal Navy doctor and researcher F.P. Ellis argues that both these volumes were incomplete and unclear in parts.[82] The reports contained extracts from journals of medical officers, statistical analysis of case history, results of clinical trials, and original observations by naval surgeons.[83] Ellis contends that latter volumes, which began to be published annually from 1856 after a hiatus and continued till 1915, used more precise nosology, conforming to the advances in classification of disease. Wilson's report and the first volume of Bryson's

79 Ibid, 8.
80 Alexander Grant, "Introductory: Health and Habits of Seamen," *The Medical Times* 3, no. 55 (October 10, 1840): 17.
81 Christopher Lloyd, *Medicine and the Navy 1200-1900 Vol. IV* (Edinburgh: E & S Livingstone, 1963), 268.
82 F.P. Ellis, "The Health of the Navy: The Changing Pattern," *British Journal of Industrial Medicine* 26, no. 3 (1969): 192.
83 James Watt, "Naval and Civilian Influences on Eighteenth- and Nineteenth-century Medical Practice," in *The Mariner's Mirror* 97, no. 1 (2011): 157.

report had used William Cullen's nomenclature. Bryson shifted to a customised version of Cullen's nosology in 1859 in keeping with new categories such as zymotic disease, which was communicated to medical officers of ships as the appropriate method of writing their statistical returns. The next volumes, beginning with the 1869 report that came out in 1871, used the nomenclature recommended by the Royal College of Physicians of London in 1869.[84] The shift made the older entries obsolete for want of precision but the new nosology, based on symptoms rather than underlying cause, created confusions in regard to diseases with similar symptoms such as fever and cough. Therefore, distinguishing cholera from dysentery for example depended on the expertise of the reporting surgeon at times, with no certainty that the annual estimate reflected the real situation.

The historical data available from the statistical series need to be considered in the context of the Admiralty's motivation for documenting seamen's health. One reason was to upstage the merchant service by showing fewer mortality in Royal Navy ships. At the same time, the naval authorities needed to know why certain diseases occurred more frequently among seamen and how to avoid them. Furthermore, reports showing improvement in health could dispel popular prejudices about the hardship of maritime labour. Finally, proper records of mortality and accidents helped to understand the origin of tropical diseases, plan the prevention of contagion, and validate claims about the role of geography and climate in the spread of epidemic diseases.[85] Medical officers submitted health reports for every voyage first to the ship's captain and sent the record for a full year to the director general and his deputy. Proximity to their patients over a long period of time helped surgeons take copious notes, though the quality of observation depended on the person's competence.

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84 Ellis, "The Health of the Navy," 193.

85 Vaughan Miles Dutton, "Royal Navy Data in the 19th Century: Factors Affecting Data Quality," *http://doc.ukdataservice.ac.uk/doc/7390/mrdoc/pdf/guide.pdf*, 5-6.

1860-1864	
Drowning	606
Wounds and injuries	444
Phthisis and haemoptysis	587
Continued and remittent fever	477
Dysentery	355
Yellow fever	324
Inflammation of lungs and pleura	232
Diseases of heart	179
Cholera	136
Other causes	801
All causes	4,141

Figure 1.2: Main causes and number of deaths in the Total Force, Ellis, 196.

The reliability of information about the nature of diseases remained a concern for most of the nineteenth century. The Board of Trade's annual publication about mortality at sea in the year 1867 mentioned 5,283 deaths from 16 causes. Physicians expressed their dissatisfaction with this tabulation since the list was compiled from statistics supplied by ship captains who were mostly unaware of the aetiology of diseases. Captains were known to provide false information when unable to determine the exact cause and circumstances of the death of their crew, which was highly problematic. The high number of deaths attributed to accidents raised concern about the propriety of classifying deaths, especially in the context of the reckless life of sailors and inability of captains to control their behaviour or provide medical solution to health problems. Therefore, physicians demanded medical officers be appointed to enquire into the mortality of seamen on ships without a surgeon on board.[86] Naval officers in general were not trusted by surgeons. An editorial in *The Lancet* about the proposed medical reforms in 1870 mentioned that many naval and military officers were forced to resign during the preceding 20 years on account of their alcoholism.[87] Medical men were naturally averse to take the words of naval officers who could be embedded within the problem they sought to redress. As custodians of an increasingly important aspect of modern communication, trade and warfare, their expertise

86 "Causes of Death at Sea," *The Lancet*, 94, no. 2401 (September 4, 1869): 355.
87 "Medical Reform and the Medical Council," *The Lancet*, 95, no. 2427 (March 12, 1870): 383-84.

became an organised discipline if study in the late nineteenth century. This is evident from the seventh International Congress of Hygiene and Demography in 1891 having a long session on naval and military hygiene, concerned chiefly with quarantine and sanitation aboard battleships.[88]

> TUESDAY and WEDNESDAY, August 11th and 12th.—
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> Inaugural address by the President, Lord Wantage. Dr. Stopford Taylor, of Liverpool, 'Medical Supervision of the Mercantile Marine'; Dr. Waltord, of Cardiff 'Port Sanitary Administration'; Dr. Spooner, of Liverpool, 'Diet Scales of Mercantile Marine, with Special Reference to Scurvy '; Dr. Curnow, of London, 'Diseases Prevalent Amongst Seamen '; Dr. Harris, of Sunderland, a paper; Dr. Montizambert, of Quebec, 'Modern Quarantine in Canada and the United States'; Dr. Valentin Vignard, of Paris, 'Quarantine and Medical Inspection'; Dr. Duchaussoy, of Paris, 'Tentes et Bavaques'.
>
> THURSDAY and FRIDAY, August 13th and 14th.—
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> Professor J. Lane Notter, of Netley, 'Enteric Fever in the European Army in India, its Etiology and Prevention'; Brigade-Surgeon C. H. Godwin, of Netley, 'The Duties of the Medical Staff on Active Service'; Surgeon A. M. Davies, of Netley, 'Enteric Fever Amongst Troops on Active Service'; Mr. Cunningham, of Cambridge, 'Dental Reform in the Army and Navy'; Lieut.-Colonel A. Wintle (late R.A.), 'Dietary of Our Troops'; Surgeon Addison, Netley, 'Ambulance Organization and Medical Arrangements of an English A my Corps in the Field; Dr. J. E. Squire, of London, 'Camp Fevers, their Origin and Spread '; Fleet-Surgeon R. W. Coppioger, of Haslax Hospital, 'Sanitation Afloat in the Royal Navy.'

British ship surgeons in India

[88] "Seventh International Congress of Hygiene and Demography", *Public Health* 40 (August 1891): 483.

The opportunity to observe ill seamen during the journey from a temperate to a tropical climate enabled many ship surgeons to offer answers to the vexing question of the impact of climate on European constitutions. Their studies of illness in the tropics complimented the work of British naval surgeons who lacked work experience in the tropics. Blane, who was familiar with the West Indies but never visited India, relied on statistical reports when he remarked in 1815 that troop ships to India encountered fewer deaths than those going to the West Indies. He thought it was because passengers to India had more individual space on board, and malignant fevers were less prevalent in the Bay of Bengal ports compared to the Caribbean ports. At the same time, he admitted that these occurrences were 'quite inexplicable in [their] present state of knowledge.'[89] The statistical reports on the health of the Navy for the years 1830 to 1836 mentioned problems of alimentary organs, including cholera, causing the maximum number of deaths in this region. Diseases of liver, noted as 'inflammatory, acute, or chronic' in nosological returns, did not kill as many but invalidated a large number of people. 'Febrile' diseases were very common as elsewhere but 'idiopathic fever' resulting from a 'peculiar endemic cause' rarely turned out to be fatal. Naval surgeons were still unable to answer:

> Why one disease, or class of disease, prevails in one place, and another, in another. Why, for example, is dysentery, not fever, the most fatal disease of the east? Why, on the West coast of Africa, and at Jamaica, is there little mortality from any disease but fever? And why is the fever different in the two places? Why, on the other hand, is there no epidemic, and little epidemic, disease on the coast of Brazil? The maladies which occur there being the effect of simple

[89] Gilbert Blane, "Statements of the Comparative Health of the British Navy, from the Year 1779 to the Year 1814, with Proposals for Further Improvement," in *Medico-Chirurgical Transactions VI* (London: Longman, 1815): 535.

> atmospheric action, errors in diet, exercise, and the abuse, or improper application of what the ancients quaintly called 'nonnaturals.'[90]

The refrain of difference was underlined in studies of Indian diseases and preventive medicines throughout the nineteenth century. The writings on health often mimicked travelling accounts and administrative reports that emphasised India's environmental uniqueness. Arnold argues that colonial rulers observed and appropriated the Indian landscape as an area of both opportunities and scenic beauty on the one hand, and death, disease, and despair on the other hand. Colonialism was as much a cultural process as it was economic, and colonisation of a space involved generating and communicating knowledge of the territory under control. The tropics were the product of Europe's encounters with India, invented no less by the intention to culturally characterise a little-known region by quantifying its resources and demographics.[91] For this reason, historians have examined medical texts as repositories of the colonial discourse of environment, race and science.

One of the first British naval surgeons to ponder the difference in the nature and degree of diseases affecting European seamen in India was James Johnson. His treatise on the effect of Indian climate on European seamen mentioned a number of diseases not seen in Europe. One of them, the 'Marsh Remittent Fever,' killed about 300 seamen every year in the stretch between Calcutta and Kedgeree (Khejuri).[92] Johnson saw an outbreak of the disease during his first visit to Calcutta. He soon realised that the preventive medicines prescribed by Lind and Clarke were ineffective against this fever.[93] While Clarke's description of the disease completely matched his observation, the same line of treatment was ineffective. After a few

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90 "Statistical reports on the Health of the Navy for the Years 1830, 1831, 1832, 1833, 1834, 1835, and 1836, Part II," in *Parliament Accounts and Papers Vol. V* (1841), 78.
91 David Arnold, *The Tropics and the Traveling Gaze: India, Landscape, and Science, 1800-1856* (Seattle and London: University of Washington Press, 2015), 3-4.
92 James Johnson, *The Influence of Tropical Climates on European Constitutions*, 3rd ed. (New York: Evert Duyckinck, 1826), 41.
93 Ibid, 45.

experiments, Johnson perfected phlebotomy and a concoction that worked. He criticised the Bengal government for 'the apathy or impolicy' of cleaning the woods and marshes of Diamond Harbour, the main anchorage of British ships. An estimated one-fourth of the crews of ships died as a result.[94] Having dismissed the theory that the dense jungles protected the harbour from storm, he recommended clearing the jungle along a radius of 6 miles in Diamond Harbour. The miasma causing the fever could also have been destroyed by draining or opening the Diamond Point to the movement of the tide. He suggested docking ships at Sagar Roads, further away from the shore, rather than at Kulpi or Kedgeree, in order to save seamen's lives.

Johnson also wrote that the climate worsened seamen's 'depressing passions' and 'galling disappointment.'[95] These ailments needed a method of treatment involving early evacuations, and the use of means to remove the 'congestions from the head and liver'. In fact, he felt that seamen of a 'timid disposition', who were easily frightened by the endemic diseases of India, succumbed more frequently than robust and boisterous seamen.[96] The continuance of this idea for over half a century was evident in military surgeon Julius Jeffrey's treatise on the British army in India, published in 1860. Jeffrey stated that no British people except those with Mediterranean features survived the tropical sun without serious physical harm.[97] Johnson's later work had a deeper focus on the impact of climate on people moving between tropical and temperate countries, based on the medical records of his patients and himself.[98] He believed that extensive exposure to tropical climate had transformed his body, leaving him in an intermediate stage in which he was neither fully acclimatised to India nor ready for a life in

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94 Ibid, 61.
95 Katherine Foxhall has found that surgeons on ships bound for Australia considered 'depressing passions' a precondition for scurvy. These surgeons thought raising the morale of the crew was part of their responsibility, and a positive outlook (evidenced by exuberant behaviour) helped avert disease. Foxhall, *Health, Medicine and the Sea: Australian Voyages c. 1815-1860* (Manchester: Manchester University Press, 2012).
96 Johnson, 64.
97 Harrison, *Public Health in British India*, 49.
98 Harrison, *Medicine in an Age of Commerce and Empire*, 236.

England. This was for him the curse of imperialism, which endangered the collective health of English people in colonial service and threatened to debilitate generations to come.

Johnson refuted the existing idea that Europeans would be seasoned if they spend a long time in India, which he thought was 'erroneous' and 'uncharitable'. Many seamen saw their mates dying from the diseases of the warm climates and thought their fate was to be 'sacrificed to the climate.'[99] Johnson suggested two methods of sustaining seamen's health. The first and most effective method was to increase the fleet size of the East India station so that no ship had to spend a long time in India. He was aware that some people would think the longer seamen spent in India, the more inured they would be to the regional climate. However, he did not consider seasoning a viable option. He thought that limiting seamen's exposure to warm climate was a better way of protecting their health. The longer they are in the region, the weaker they would grow. So, service period of ships should be as short as possible. Additional ships needed to be deployed for this reason. Discussing the threat of scurvy in large ships, Johnson pointed out that the recently conquered Cape of Good Hope would provide ships a place to replenish their stock with fresh vegetables, reducing the chance of scurvy. In response to the second of objection, he asserted that Europeans were at their best health within the first three years of their stay in India before starting to degenerate and become more vulnerable to disease.[100] In support of his argument, he mentioned that the rate of death among the crew of the frigate *Caroline* in the most 'sickly' parts of India increased the longer the crew spent time in the country.[101] The second plan, easier to execute but potentially less effective, was to send seamen in larger numbers to Indian ports so that those serving in the country could be sent back before long.[102]

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[99] James Johnson, *The Oriental Voyager* (London: James Asperne 1807), 270-80.
[100] Ibid, 281.
[101] Ibid, 282.
[102] Ibid, 283.

A number of surgeons described fevers as a product of the hot and humid climate of Indian port cities. Naval surgeon George Kirk wrote that most of the crew would fall ill during their stay in Calcutta and invariable suffer from fever as the ship made its way along the Hooghly river.[103] The 'excessive sultriness' of the weather resulted in 'coup de soleil', a form of apoplexy caused by exposure to the vertical sun.[104] Many scholars have examined the problems of the production of knowledge about the low tolerance level of European to the tropical sun.[105] While much of the concern was bound to a larger anxiety over preserving racial sanctity, the ill effect of the severe sun as part of the tropical climate upon the nervous systems of European seamen became a practical problem for naval and merchant services. The annual returns of diseases treated at the Medical College Hospital in Calcutta in 1842-43 enumerated the death of eight seamen out of eleven mortalities from apoplexia, thought to have resulted from exposure to the mid-day sun in a state of inebriation (the reports also pointed to a great many deaths from 'cholera morbus').[106] The forecastles of ships stationed at Calcutta were seen to be 'veritable sun-traps' due to their exposure to the 'direct rays of a nearly vertical sun for right or nine hours a day.'[107] To mitigate the overheating of the crowded deck space, the Lieutenant-Governor of Bengal proposed covering the iron roof with wooden planks in all India-bound ship. It was noticed that seamen were sometimes asked to paint the sides or work in the bilges, boilers or double-bottoms of vessels during the day. This prompted the port officer to issue a circular to ship captains requesting them not to make seamen work between 11 am and 4 pm in overheated conditions. Some captains turned a deaf ear to such pleas, which would

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103 George Kirk, "Observations on Sea-Scurvy, as it Occurred in the Private Ship – during a Passage from Bombay to England," *Edinburgh Medical and Surgical Journal* 32, no. 100 (1829): 46.

104 For details on coup de soleil see Colin Chisholm, *A Manual of the Climate and Diseases of the Tropical Countries* (London: Burgess and Hill, 1822), ch. 22.

105 Dane Kennedy, "The Perils of the Midday Sun: Climatic Anxieties in the Colonial Tropics," in *Imperialism and the Natural World*, ed. John M. MacKenzie (Manchester: Manchester University Press, 1990), 118-40; Warwick Anderson, *Colonial Pathologies: American Tropical Medicine, Race, and Hygiene in the Philippines* (Durham, NC: Duke University Press, 2006).

106 *Third Report of the Committee for the Establishment of a Fever Hospital* (Calcutta: Bishop's College Press, 1847), 40.

107 "The Protection of Seamen in Port from Heat and Sun," *Indian Medical Gazette* 27, no. 11 (1892): 337.

result in mishaps such as a German sailor, working on a scaffolding over the side of his ship, fainting, falling into the river, and drowning. Another sailor, who fainted while chipping the bottom of his vessel, was fortunate to be caught by native boatmen before he drowned.[108]

Alexander Grant provides excellent insights into the trouble with using existing knowledge in treating seamen in transit.[109] The methods of treatment was still very rudimentary – four sailors were treated by bleeding from the arm, active purgation, diaphoretics and blisters, whereas nine others were given emetic, purgative, and nauseating doses of tartrate of antimony. It took the ill 14 days on an average to recover and 28 days to resume duty. Like many other surgeons, Grant favoured flannel as the appropriate tropical wear for European seamen, as the material prevented sudden chill in the otherwise warm weather by absorbing perspiration. He considered light clothing to be more effectual in countering tropical heat than any medicine.

The surgeon's concern with environment becomes evident from how frequently he mentioned sailors being ill from 'excess and exposure' during the time spent in Calcutta. An instance of phthisis in a servant was traced to two years back, when the person was in Bengal. He was weakened enough by a bout to fever to be discharged and obliged to return to England. His health deteriorated on his way home, and after a long struggle with hemoptysis he was advised by a physician to try another sea voyage in the hope of a change in weather improving his condition. However, his health declined as the ship passed the equator, the combined effect of 'rarefied atmosphere' and crowded living quarter severely impairing his vital functions.[110] Scurvy was by then nearly eradicated from merchant navy. Grant treated a single scorbutic patient on board. The person had developed other maladies that he had failed to classify, which later led to the patient's death at a hospital in Calcutta. Otherwise scurvy was kept under control

[108] Ibid, 338.
[109] "Young Surgeon on Shipboard – Chap II," *The Medical Times* 3, no. 56 (October 17, 1840): 29.
[110] "Young Surgeon on Shipboard – Chap III," *The Medical Times* 3, no. 57 (October 24, 1840): 41.

by provision of 'suet, flour, peas, vegetables, and lime juice', along with proper cleanliness and ventilation. A case of 'tropical dysentery' soon gave him the chance to revisit and revise the treatment prescribed by James Johnstone and James Annesley. He concluded that young surgeons should critically think through every case and not faithfully execute recommendations made by stalwarts, as every manifestation of a disease could be different from a previous instance.[111] As Grant's ship arrived in Madras in July, seamen indulged in a variety of fruits without regard to quality or quantity, which soon caused diarrhoea. The onward journey to Calcutta was uneventful except for a case each of cholera and delirium tremens.

Grant drew attention to the problem of malingering on board ships. Army and navy personnel were known to feign illness to get discharged from service. Sailors in the merchant navy avoided labour by pretending to be ill. They swallowed medicine, and had their liquor allowance stopped and diet cut to bland meals. The person in Grant's account complained of pain in the back and head but showed no symptom. For three weeks he gulped the nauseating medicine given to him with a straight face. Finally, as Grant increased the dosage out of suspicion that his patient was deceiving him and the officers, he admitted to feeling better and offered to resume his duties. But Grant kept testing him, insisting he needed more medication, and he finally confessed to playing truant. He deserted as soon as the ship anchored in Calcutta.

The ship's crew spent the months of August and September in Calcutta. The stench of rotting plants and animal carcasses that were stuck in mud near the river banks made living in the ship very difficult after it was moored. Organic matter rapidly decomposed in the high heat and moisture, emitting the nauseating 'poisonous miasma' that caused the Bengal remittent fever, especially when water level subsided at the end of the rainy season. Grant disagreed with physicians restricting the diet for sailors in tropical regions. In his opinion, while such a limited

[111] "Young Surgeon on Shipboard – Chap IV," *The Medical Times* 3, no. 58 (October 31, 1840): 52.

diet worked for people without activity, hardworking men such as sailors needed nutritious diet and controlled consumption of 'stimulants' to keep up their health and strength. The challenge to sailors' health was the 'licence to indulge in every species of excess and of folly' on their weekend leave, which often resulted in they spending the night in the open and roaming around without adequate cover in daytime. The maximum cases of illness would follow a day of leave. Diarrhoea and fever were the most common illnesses that Grant treated in those two months. He determined the cause of diarrhoea to be eating fruit, drinking dirty water, cold caught by sitting in wet clothes, and exposure to sudden chill. More interesting were the three cholera cases he handled. He described them as British cholera instead of Asiatic cholera.[112]

Grant documented a sailor's violent convulsions and mental instability, wherein the patient spoke coherently only in intervals and had no memory of his illness after convalescence. The sailor blamed his illness on having drunk excessive arrack and being exposed to the sun during his two-day trip to the shore. Heat and diet seemingly accounted for nearly every case of seizure. Sailor fell ill variously while working at the forge in daytime, shortly after eating an unripe fruit, and a day trip to the city.[113] Other diseases he treated in these two months were 11 cases of syphilis, 9 cases of gonorrhoea, and several ulcers from mosquito bites. He surmised the venereal diseases to have been contacted while sailors visited Calcutta. Incidentally, no such cases were found during the trip to China, the port cities of which was inaccessible to sailors as per government directive.[114] He found a specific case of syphilis very interesting since the symptoms were unlike anything recorded and needed innovative treatment.[115] Mosquito bites were a comparatively benign irritant that 'the skin of the

[112] "Young Surgeon on Shipboard – Chap V," *The Medical Times* 3, no. 59 (November 7, 1840): 65. The difference between British and Asiatic cholera will be examined in detail in a subsequent chapter.
[113] "Young Surgeon on Shipboard – Chap VI," *The Medical Times* 3, no. 61 (November 21, 1840): 89.
[114] Ibid.
[115] "Young Surgeon on Shipboard – Chap VII," *The Medical Times* 3, no. 62 (November 28, 1840): 101.

European' was initially 'very sensitive' to.[116] Ulcers resulting from it could be painful but usually did not interfere with the patient's daily work.

The publication of the detailed account of Grant's work on board a merchant ship reflected the increasing importance now given to understanding diseases during sea voyages and in the tropical region. Grant's articles contained minute details about the probable causation, manifestation and prevention of diseases that medical establishments in Europe felt must have was useful knowledge. It was the time when physicians in Europe were taking a greater interest in the works of surgeons in East India Company's medical services in the presidencies as cholera pandemics spread to Europe in the 1820s. These men represented a transnational community of physicians who judiciously explored indigenous medical traditions in the colonies, mostly in India but sometimes other places during sea voyages and military expeditions, gaining in this process a balanced understanding of various approaches to medical problems. Years of field experience with Indian patients and knowledge of the relationship between climate and diseases favourably placed them as architects of contemporary epidemiology. Harrison argues that the respect given to British doctors working in India demonstrates the independence of 'colonial science' from the metropolitan tradition. Especially after 1860, medical practitioners in India emphasised new ideas of aetiology. Coupled with the shifting perceptions of Indian society and culture in European imagination, these ideas served to deteriorate the image of India as 'intrinsically pathogenic' while its inhabitants were assumed to be 'reservoirs of dirt and disease'.[117]

A major aspect of maritime hygiene was reinforcing the theory of the endangering of the European constitution in tropical climate. If tropical diseases were a short-term setback to

[116] "Young Surgeon on Shipboard – Chap VIII," *The Medical Times* 3, no. 65 (December 19, 1840): 137.
[117] Mark Harrison, "Tropical Medicine in Nineteenth-Century India." *The British Journal for the History of Science* 25, no. 3 (1992): 300-1.

British imperial operations, the fear of racial degeneration loomed large as a long-term consequence of Britain's possession of tropical colonies as noted by Trotter as early as the 1800s. Most of the writings in this genre were by Army surgeons, who arguably led a more sedentary life in the barracks with far greater access to patients, records and other resources in peacetime. Ship surgeons had the advantage of observing and making comparative analysis of a larger spectrum of people, including military personnel in transit, and diseases, thus enabling their readers to grasp the condition of maritime health from a very broad perspective. They were naturally concerned with diseases like scurvy or fevers related to exposure to rotting vegetation in marshes that hardly took extreme forms in army cantonments. Their location on a vessel that connected various parts of the world placed them in an advantageous position to understand the distinctive influence of geography, weather, demography and culture upon the health of people. Although seamen were widely envisaged in nineteenth-century Britain as pawns in the game of imperial expansion and naval medical service unpopular for low pay and presumed inferior status, maritime medical practitioners were able to contribute towards understanding tropical hygiene.

Conclusion

The chapter has examined how ship surgeons preserved the health and reduced mortality of naval and merchant seamen in the nineteenth century. Although experimental subjects were available in large numbers, the lack of a standard method of nomenclature of disease and conducting controlled experiments meant the debate on identification and treatment of disease never ceased. The impact of these surgeons upon the field of tropical hygiene was still significant in regard to the knowledge of aetiology and prevention of disease. Naval authorities collected a significant amount of medical data that helped them to identify and solve problems.

They published a number of medical guides for ship captains who were given the responsibility of looking after their crew in the absence of surgeons. The chapter has also referred to the British government's policies regarding seamen's health and welfare. Overall, it has made the case of the making of maritime medicine that incorporated naval and mercantile practicalities, and how maritime surgeons influenced the practice of imperial medicine.

This chapter has drawn attention to how British surgeons viewed and understood unknown symptoms, treated diseases encountered in tropical regions and during long voyages, and contemplated the impact of climate on European bodies. The focus was on empirical observation and trials in transit and in the colonies, the challenge to mainstream scientific ideas in circulation in the British metropole, and the innovative, context-specific recasting of medical practice. The distinctiveness of maritime medicine as a counterpoint to military medicine in the colonies lay in the former's unorganised, independent nature. Most ship surgeons were employed temporarily, very few had any connection or influence upon medical practitioners in Britain, and only a handful sent articles to medical journals for publication. As a result, their knowledge of tropical hygiene was not transferred to the medical community in Britain, in the first half of the nineteenth century in particular, as widely as was military medicine. Though not as vigorously as military medicine, the writings on maritime medicine in leading medical journals of the time and medical treatises created some discussion in British medical domains.

Some discoveries were made in regards of optimal diet and routine of daily life, but the legacy of ship surgeons was new evaluation of the impact of climate, confined spaces, and food on human body not only in a specific region, but across the path of journey traversing the globe. Some of these works followed the trajectory of a travelogue in which the authors narrated their experience as both a participant and observer of maritime life. Their study of the health problems on board ships simultaneously analysed the conduct of seamen in their floating society and the potency of tropical climate in intensifying their maladies. Most of the medical

writings in this genre were exploratory, as the emphasis was on identifying new problems and starting a conversation with the aim of revising existing recommendations. Understanding the interaction between Europe and their tropical world – the familiar and the foreign – was at the heart of nineteenth-century nosological writings in medicine. The discussion of the ideas of shipborne and tropical diseases will be followed by a study of medical intervention on board ships and at the port cities in the next chapter.

CHAPTER 2

Maritime preventive medicine in the tropics

For most of the eighteenth century, surgeons devised remedies for a number of diseases including scurvy and smallpox. Their empirical experimentation, quantification, and description of symptoms generated extensive knowledge about the prevention of diseases and infections, as well as the relationship between human physiology and climate. When humoral theory was the conventional framework of examining the human body, measures such as vomiting agents, bleeding, consumption of fruits and vegetables, hygiene, and appropriate clothing were favoured as methods of treatment.[1] The field of remedies broadened as other paradigms such as nervous pathology emerged. With Britain's commercial connection with tropical regions increasing, medical practitioners needed to come up with better strategies for protecting the health of seamen, which necessitated taking into account the impact of climate on seamen's constitution. Nineteenth-century maritime medicine was a product of the debate between the scientific 'orthodoxy' and proponents of new aetiological and hygiene theories.[2] With a view to unpacking these debates, this chapter discusses the preventive measures taken to protect seamen's health on board ships through hygiene and diet plans, and medicine chests provided to ship captains. It examines how the knowledge of maritime and tropical diseases was translated into a broad spectrum of preventive medicine, constituted by diet, sanitation, and hygiene prevent diseases and ailments.

1 Patricia Kathleen Crimmin, "British Naval Health, 1700-1800: Improvement over Time?" in *British Military and Naval Medicine, 1600-1830*, ed. Geoffrey L. Hudson (Amsterdam and New York: Rodopi, 2007), 195.
2 Elise Smith, "Cleanse or Die: British Naval Hygiene in the Age of Steam, 1840-1900," *Medical History* 62, no. 2 (2018): 178.

Apart from these preventive measures, specialised and general hospitals were established in port cities for treating ill seamen. These hospitals were built mainly around naval bases and initially for naval seamen, but the services were extended to all European seamen in the late eighteenth century. The records of these institutions exist in fragments, which reveal glimpses into how the idea of the warm climate underpinned seamen's treatment, and how surgeons developed new theories of disease causation and treatment by observing seamen's illness. More documents, from the last quarter of the nineteenth century in particular, refer to the British colonial state's fiscal administration of these hospitals and the admission statistics of patients. Government records and newspaper reports reveal how hospitals reflected the colonial state's concern for and power over the imperial working class. Through a study of seamen's diet as preventive medicine, the substitution of surgeons with medical guides on board ships, and the administration of seamen's hospitals in colonial India, this chapter illustrates the relationship between maritime medical innovation and the politics of public health.

Hygiene and diet in the tropical waters

To tolerate the perils of sea voyages and hard work on board ships, seamen had to be strong and vigorous in mind and body. On the question of selecting seamen for long voyages, Dr James Lind cautioned against recruiting men from the streets and prisons. These people, thought to be unclean, could infect their co-workers with venereal and other diseases commonly associated with polluted, filthy, and insalubrious places. Lind also warned against recruiting men returning from the tropical regions (Asia, remote parts of Africa, and the Caribbean Islands) who could have been too debilitated by scurvy and other disorders to endure

the hardship of another trip.[3] He suggested eating fresh vegetables instead of salted meat for recuperating from a long voyage. For maintaining health on board ships, he recommended regular and thorough cleaning of decks, hammocks, and clothes. Among the methods were the use of fire of dried wood in summer, twice daily fumigation of the entire ship during monsoon, and use of warm clothes (flannel under-jacket) and bedding, and covering of hammocks with a painted or tarred canvas, in winter.[4] A bill passed by Lord of the Admiralty Sir James Graham in 1835 made these victualising and clothing recommendations compulsory for the merchant service.[5] Scurvy, though in decline in the nineteenth century after the increased use of citric fruits and fresh vegetables in seamen's diet, was a major threat to maritime health. It was seen to cause more debilitations in certain years, and did not abate in the course of the century, showing medical knowledge was not a matter of unidirectional progress and did not translate into effective policies.

Scurvy in tropical regions offers a unique perspective into understanding the nature of medical debates. In 1797 the Victualling Board had implemented reforms with an aim to reduce scurvy. Before that, Dr Norman Chevers wrote, large number of seamen succumbed to scurvy, ulcers and putrid fevers on shipboards, especially in the 'Indian seas.' During the first journey of an East India Company ship to India, 105 men out of the crew of 424 died of scurvy. A staggering 514 among the 1,334 patients admitted to the hospital in Bombay between November 1755 and April 1756 suffered from scurvy.[6] Surgeons' views on the origin of scurvy at this time was inspired by theories and debates on humor, perspiration, fermentation, putrefaction, contagion, food poisoning and physical properties of gases and chemical

3 James Lind, *An Essay on the Most Effectual Means of Preserving the Health of Seamen in the Royal Navy* (London: D. Wilson, 1762), 2.
4 Ibid, 7-15.
5 Andrew Henderson, "The Result of the Experience in Sea-Scurvy, with Remarks on its Prevention and Treatment," *The Edinburgh Medical and Surgical Journal* 52, no. 140 (July 1, 1839): 2.
6 Norman Chevers, *On the Preservation of the Health of Seamen* (Calcutta: Military Orphan Press, 1864), 7-8.

reactions.[7] Many physicians had recommended lime juice for preventing scurvy, including John Woodall in 1617 and James Lind in 1747. Lind, not very sure of the efficiency of citric juice alone, emphasised the necessity to prevent excessive perspiration and the utility of ventilation, cleanliness, and discipline.[8] The difficulty of preserving citrus fruits during sea voyages and scepticism among naval officers and surgeons about their efficiency meant Lind's suggestion was not fully implemented till the end of the eighteenth century.

Lind's concoction of boiling or filtering purified juice of orange and lemon was tried along with 'MacBride's Malt', 'Sour Kraut', and 'Portable-Soup' on the expeditionary voyages commandeered by James Cook. The low occurrence of scurvy on board ships made the naval authorities notice the antiscorbutic properties of fresh vegetables rather than lemon juice. It is notable that the admiralty preferred MacBride's Malt to lemon juice in seamen's ration till the 1790s.[9] In the 40 years since Lind's trial and the British Navy's sanction of lemon juice, other nations such as America, France, Spain and Austria acknowledged the benefit of citric fruits in preventing scurvy. The quality and longevity of lemon syrup improved over the years. Trotter developed the method of straining instead of heating lemon juice and covering the mouth of the bottle with olive oil before sealing it. Blane advocated mixing a small quantity of spirits with lemon juice. These methods ensured the juice retained its anti-scorbutic value for months. A controlled experiment on a polar expedition from 1850 to 1853 proved this to be very effective.

Both Blane and Trotter discarded the humoral theory influenced assumption that unhygienic living led to scurvy. Mark Harrison's analysis of the literature on scurvy shows that towards the late eighteenth century naval surgeons started emphasising nervous theories of

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[7] Kenneth J. Carpenter ed., *The History of Scurvy and Vitamin C* (Cambridge: Cambridge University Press, 1986).
[8] Jeremy Hugh Baron, "Sailors' Scurvy before and after James Lind – A Reassessment," *Nutrition Review* 67, no. 6 (2009): 318.
[9] Ibid, 322.

disease rather than humoral theory. The Edinburgh professor William Cullen considered nervous disorder the cause of nearly every known disease. The physician Francis Milman wrote that scurvy resulted from nervous 'debility' due to 'exciting' and 'predisposing' causes, not putrefaction of the humours.[10] In contrast, Trotter believed that the disease was caused by the lack of fresh vegetable and not putrefaction or indigestion. In his book *Observations on the Scurvy*, published in 1786, he supported lemon juice but was sceptical about effectively storing lemon on a long voyage. He conceded that the disease could be caused by dampness and cold, and even idleness and depression, but never from environmental factors alone. In the second edition of his book published in 1792, he argued that citric fruits and fresh vegetables prevented scurvy since they were full of 'vital air' (oxygen).

Critics of Trotter pointed out several inconsistencies in his use of chemical terms such as the emphasis placed on food and oxygen content. The physicians Thomas Beddoes and Seguin Henry Jackson attributed scurvy to unhealthy environments and the accumulation of 'phlogiston' – thought to be a component of combustible substances that is released during combustion – in blood respectively. Through observation of seamen's diet as Physician to the Channel Fleet in 1794, Trotter demonstrated that scurvy was caused by dearth of fresh vegetables and aggravated by other conditions such as low temperature, alcoholism, and epidemic diseases.[11] Trotter's initial appeal to the Victualling Board for compulsory distribution of lemon juice was refused. After several deputations and meetings, the Sick and Hurt Commission agreed in May 1796 to provide it to every vessel journeying to foreign shores. In his later book, *Medicina Nautica* (1803), Trotter wrote that addition of fresh vegetables to lime juice worked even better. He forbade the dilution of lime juice with acetous acid and other materials that reduced the beverage's quality as a medicine. He also advocated

[10] Mark Harrison, "Scurvy on Sea and Land: Political Economy and Natural History, c. 1780-c. 1850," *Journal for Maritime Research* 15, no. 1 (2013): 10.
[11] Ibid, 11.

for the establishment of a Board of Health to supervise the health of East India Company's seamen and ferrying regular supplies of fresh vegetables to ships that had been sparingly done since the latter part of 1800.[12]

Blane's first book on scurvy, *Observations on the Diseases Incident to Seamen* (1785), supported Milman's arguments of the causes of scurvy (idleness, moisture, filth and cold) and the humoral theory of disease. The second and third editions of the book shifted the emphasis on the importance of nervous physiology in their explication of the cause of scurvy. Blane thought that lime juice prevented scurvy more effectively than anything else by stimulating the nervous system and providing 'refreshment' rather than nourishment. Surgeons disagreed about the cause and nature of scurvy but accepted the effectiveness of lime juice. Contrary to Blane's contention in 1815 that scurvy had largely disappeared from the Navy, the disease continued to break out on British cargo and passenger ships.

A strange discovery of anti-scorbutic diet took place in India that went largely unnoticed in Europe. Dr James Anderson, physician general of Madras, discovered anti-scorbutic properties in nopal, a prickly pear cactus indigenous to Mexico, but his findings were not publicized and disappeared with his death.[13] Nopal was used as a long-lasting vegetable in the men-of-war in the India station, and was claimed to have eradicated scurvy among naval seamen. The origin of nopal cultivation in the Madras botanical garden lay in the East India Company's intention to produce red and crimson cochineal dye to end Spanish monopoly over the expensive product. The dye came from the cochineal insect that lived as a parasite on the nopal plant. Although opposed to the idea of competing with Spain, Anderson took charge of

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12 Thomas Trotter, *Medicina Nautica: An Essay on the Diseases of Seamen III* (London: T.N. Longman and O. Rees, 1803), 389.

13 John Keevil, Christopher Lloyd, Jack Leonard, Sagar Coulter, *Medicine and the Navy 1200-1900: Volume 3 – 1714-1815* (London: E & S Livingstone, 1961), 177.

the nursery, initially named the 'Honourable Company's Nopalry' in 1789.[14] Different specimens of the host plant collected from China, Philippines, the Cape of Good Hope, and Kew Gardens. At this time, Mediterranean lemons were used for scurvy prevention on the EIC's ships. The paucity of such lemons in India prompted Anderson to experiment with various vegetables, and he found nopal leaves to be efficient against scurvy.

Anderson promoted the use of nopal as a replacement for lemon juice, which spoilt more quickly than the sturdy vegetable. As a fleshy and succulent plat, nopal remained fresh without water for a long time. Anderson made his first public claim about his discovery in the *Madras Gazette* on 4 May 1808, where he wrote that several naval commanders and surgeons had expressed their satisfaction with the efficacy of nopal in preventing scurvy and bowel complaints. Shortly afterwards, he published an article in *Madras Courier* on the medicinal value of nopal. He drew attention to the facts that nopal lasted longer than most vegetables, grew around the year, was nutritious, could be consumed raw, cut into small pieces, or boiled in soup. In the spring of 1808, he had issued the naval ships of the India station 64 baskets filled with 22,400 nopal leaves.[15] He received many requests for nopal leaves in response to his advertisement regarding his willingness to share nopal leaves with ship captains and surgeons. In a letter to Sir Joseph banks, president of the Royal Society, dated 15 July 1808, he wrote about the use of nopal as an antidote to scurvy on naval and merchant vessels. Appended to the letter was an extract of a message dated 16 November 1795 from Ambrose Kepling, commander of the cargo ship *Two Brothers*, who said,

> It is not in my power to express the value of Dr. Anderson's excellent Nopal, I have tried it every way, boiled, salad, currie, and in soup; it equals any vegetable I ever saw in use;

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[14] David Mackay, *In the Wake of Cook: Exploration, Science & Empire, 1780-1801* (Wellington: Victoria University Press, 1985), 177-8; Richard Drayton, *Nature's Government: Science, Imperial Britain, and the "Improvement of the World* (New Haven: Yale University Press, 2000), 120.
[15] *The Naval Chronicle* 22 (July-December 1809): 378.

> its glutinous quality enriches the soup surprisingly, and makes it much more nourishing and well flavoured; its power as an antiscorbutic must be a great recommendation to the use of mariners.[16]

Anderson mentioned that he had published the letter as soon as he received it, but it did not have any effect on the provisioning board of the naval fleet. Now, encouraged by the results of his experiment, he published a pamphlet about the efficacy of nopal and tuna (Spanish for the fruit of nopal) as vegetables.[17] He fostered a partnership with Charles Ednam, surgeon of HMS *Russell*, who trial of nopal as a provision in 1808 resulted in all 96 of the scurvy patients recovering in the course of the journey.[18] R. Jeffreys, surgeon of HMS *Dover*, wrote on 4 August 1808 of an accidental experiment. The available nopal was divided as the quantity was not sufficient for the entire crew: 40 men were given nopal once a day, and those who seemed to be in worse health, twice a day. Not one of them had scurvy and many had ulcers healed. Those who were not given nopal showed symptoms of scurvy.[19]

Anderson received a number of requests to supply the plant to individuals, institutions and ships. One of the letter-writers, John Shapier, expressed his happiness in knowing the nopal plants in his garden in Mamalong had nutritional value, and requested Anderson to send two baskets of the leaves. William Doig, commander of the brig *L'Union*, was satisfied after using a small quantity in soup, and asked for four baskets of nopal for his journey to Penang. Anderson obliged and asked him to hand any leftover to one of his friends in Penang for planting in his garden.[20] Dr James Shadforth, assistant surgeon at the Masulipatnam garrison, wrote he had been hearing about the benefits of nopal ever since arriving in India. He wanted

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16 Ibid., 376.
17 James Anderson, *Journal of the Establishment of Nopal, and Tuna, for the Prevention or Care of Scurvy, Dysentery, and Ulcers, on Shipboard, and Mitigation of Famine on Shore* (Madras: Madras Gazette Press, 1808).
18 Ibid.
19 *The Naval Chronicle*, 379.
20 *Madras Courier*, September 14, 1808, 1.

to start cultivating the vegetable in the port town for the sake of the seafaring and landed community. Captain of the 80th Regiment, James Cookson, gushed about the 'unrivalled efficacy' of the plant in his request for sufficient leaves for the 50-60 invalids travelling to England.[21] Government officials asked for samples to be planted in places like Cuddalore, Verdatchellum, the Ceded Districts (the areas in modern Andhra ceded by the Nizam in 1800), Nellore, Vizag, Samulcottah, Cocanada and Ganjam.[22] Anderson seemed to have been against commercial use of the plant. While he supplied the Madras Naval Hospital, Christian missionaries, and a large number of ships (HMS *Samarang*, HMS *Psyche*, HMS *Fox*, HMS *Dasher*, HMS *Procris*, HCS *Walthamstow*, HMS *La Piedmontaise*, HMS *Barracouta*) and floated the idea of cultivating the plant in St. Helena, he refused to send samples to Colingapatam for one Rebecca Sheridan, who wanted to start a business of nopal cultivation after her cotton enterprise failed.[23]

Word soon spread that nopal was working wonders in preserving seamen's health. In 1809, the surgeon of HMS *La Piedmontaise* wrote in his request letter that nopal bore 'the testimony of the most respectable authorities.'[24] The surgeon of the flag ship wrote favourably of the utility of nopal throughout the squadron to the Commissioner of the Sick and Hurt.[25] Dr Adam Baildon, medical superintendent of St. Helena, hailed Anderson's discovery as the greatest assistance to the health of soldiers in the island where vegetables were scarce. In a letter to the island's governor on 21 August 1809, he wrote that nopal would be 'pleasant vegetable' for regular consumption, a useful addition to hospital diet, a nutritious food for soldiers, and an antidote to scurvy for newly arrived seamen.[26] *The Scots Magazine* reported that though nopal did not have any specific virtue, it was an excellent choice as a scurvy-

[21] Ibid., October 5, 1808, 1.
[22] Ibid., October 19, 1808, 1; April 5, 1809, 1.
[23] Ibid., September 28, 1808, 1.
[24] Ibid., May 10, 1809, 1.
[25] Ibid., June 21, 1809, 1.
[26] Alexander Bateson, *Tracts Relative to the Island of St. Helena* (London: W. Bulmer, 1816), lxxvii.

preventing green vegetable due to its longevity in warm climates. One had just to keep the leaves in fresh air, preferably strung upon a line, stretched on each side of the beams of a deck. In this state, not only did they stay fresh, but they continued to grow.[27] Anderson's death in 1809 put an end to the discussions around the use of nopal as an anti-scorbutic vegetable. Medical practitioners working the Channel Fleet and more influential in making decisions regarding seamen's provision preferred continuing with citric fruits and vegetables like potato and onion. The disappearance of Anderson's popular remedy for scurvy shows mobility of surgeons was important for the successful transmission of ideas to the metropole. The publication of a pamphlet and numerous newspaper articles did not help Anderson get the attention of the naval authorities the same way James Johnson was able to do on his return to England.

The problem of scurvy continued to be debated in Britain as the naval authorities were not persuaded to make provision of fresh vegetables compulsory. In a long letter to the editor of *The Lancet* in 1838, Dr Ninian Hill remarked that the British should collect facts and furnish materials to assist the government's effort to preserve the health and promote the comfort of the Royal Navy – the people 'so *indispensable* to our prosperity and superiority as a people.'[28] As much as he resented the indifference to the health of naval crews, he was astonished by how little veteran ship captains knew about proper diet. The retired captains in the mercantile marine he interviewed told him they had no scurvy on their ships and considered vinegar to be a useful remedy despite its proven inefficacy. Scurvy was ignored in many instructional books circulated by apothecaries and druggists of Glasgow and other sea ports. Hill hoped that scurvy would be taken more seriously and lemon juice provided in proper quantity, the price of which at the time was 3s. 6d. a gallon.[29] He believed that Scottish ships were less susceptible to scurvy

[27] *The Scots Magazine*, September 1, 1809, 673-74.
[28] "Health of the British Navy," *The Lancet*, 30, no. 785 (September 15, 1838): 865.
[29] Ibid, 866.

than English ships since the former's barley broth and pottage was more nourishing than the latter's plum pudding. French sailors suffered less from scurvy, especially in the tropics, as they drank soup instead of rum.[30] 'A Naval Surgeon of the Present Century' urged immediate reform of the diet on ships in 1838. He criticised the use of 'preserved meat' as the contents of a canister could spoil in tropical climate even before it was opened. Wine could also become 'thick and sour'.[31]

The Times expressed grievance at the continued menace of scurvy in the merchant service long after it had been 'absolutely extirpated' from the Royal Navy. It reported that the supply of adulterated lime juice, manufactured from tartaric and other acids and flavoured with lemon essence, was the primary reason scurvy continued. Storage of lime juice without the requisite addition of 10% spirit and non-use of glass bottle or stone jar as container often caused poisoning. The crew often lacked the discipline to consume the prescribed four to seven ounces of lime juice a week.[32] Stricter inspection of noncompliance and punishment for the culpable ship was recommended. In response, John Piothall, surgeon with the Indian Medical Service, recounted that half of the seamen admitted to the European General Hospital in Howrah suffered from scorbutic dysentery. Nearly all of them complained the supply of lime juice ran out several weeks before their ships reached Calcutta.[33] In his response to the letter, Harry Leach mentioned that the ships must ensure storage of sufficient lime juice, especially if fresh vegetables were difficult to store.[34] The long voyages from India and China were the worst hit by scurvy.

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30 Ibid, 866-67.
31 A Naval Surgeon of the Present Century, "Abuses in the Medical Department of the Navy," *The Lancet* (February 10, 1838): 712.
32 *The Times*, January 10, 1866, 9.
33 Ibid, January 12, 1866, 7.
34 Ibid, January 17, 1866, 7.

An article in the *British Medical Journal* claimed that British-owned ships were the most susceptible to scurvy. 12 scorbutic patients from two ships arriving from Calcutta were admitted to the *Dreadnought* hospital-ship in 1867. Another ship arrived from Calcutta to Liverpool the same year with six scurvy patients among the crew. They were found to have joined the crew in Calcutta only 6 days after returning from another long oceanic voyage, and hence deprived of fresh vegetables for nearly 8 months at a stretch. The lime juice provided during the second journey was proved to be adulterated, and the ship captain was accused of deliberately not purchasing a fresh supply during the ship's stopover at the Cape of Good Hope.[35] Ship owners were severely criticised for failing to stock fresh vegetable even when ships lay for weeks in tropical ports where those were cheap and abundant.[36] In the debate that continued for a year, medical practitioners weighed in on the necessity of fresh vegetables. A number of doctors stated that potatoes, mustard and cress were full of antiscorbutic properties, and recommended their use in addition to lime juice. These measures helped to reduce maritime scurvy in the late nineteenth century.[37] The observation of the near absence of scurvy among the 'many millions of vegetarians' in India, and the relatively higher occurrence of the disease among the population of the arid regions of Sindh and Punjab where fresh vegetables were scarce, helped British medical practitioners understand the anti-scorbutic property of the acid and potassium contained in vegetables.[38]

The transition from sail to steam ships in the nineteenth century increased the size of vessels, cargo volume and speed of journey, facilitating the expansion of maritime networks and the

[35] Gordon C. Cook, "Scurvy in the British Mercantile Marine in the 19th century, and the Contribution of the Seamen's Hospital Society." *Postgraduate Medical Journal* 80 (2004): 227.
[36] Walter Dickson, "On Scurvy in the Mercantile Marine," *Transactions of the Epidemiological Society of London* 2 (1867): 448.
[37] Ibid.
[38] Cameron MacDowell to the Editor, *The Lancet* 120, no. 3091 (November 25, 1882): 912-13.

length and frequency of commercial voyages to the tropics. Steam power cut journey time, enabling ships to make more stops to obtain fresh provisions without compromising their mission. This should have stopped the problem of scurvy, which usually manifested weeks into the voyage when the supply of fresh vegetables ran low and vitamin deficiency set in among the crew.

In response to these questions about seamen's diet, the parliament issued a directive in 1867, saying the lemon or lime juice used on board ships must contain 15% 'proper and palatable Proof Spirits' and have its quality certified by an inspector appointed by the Board of Trade. It was made compulsory for the masters of ships to provide one ounce of juice or other known anti-scorbutic food to every crew member ten days into voyages, except when the ship would anchor at a port. A correspondent to *The Times* wrote that this paper laid the groundwork for the Mercantile Maritime Amendment Bill prepared under the aegis of the President of the Board of Trade.[39] According to a report in *The Lancet*, the critical points addressed by the Bill were inspection by certified medical officers, the supply of spirits in front of the customs officer, and appointment of supervisors by the Board of Trade. The Merchant Shipping Act was duly revised in July 1867, incorporating the society's recommendations about diet, a medical handbook for sailors, and suitable living quarters on board ships.[40] It made adequate supply of lime juice to seamen compulsory, but did not mention fresh vegetables. Seamen were to be punished for refusing to drink lime juice, though the stringency of this regulation remains unknown.

Among other ailments of seamen, insanity was a serious problem that was claimed by some surgeons to have been curable by tobacco. W.J. Moore, Honorary Surgeon to the Viceroy of India, remarked that use of tobacco seemingly maintained mental equilibrium. Citing the

[39] Cook, "Scurvy in the British Mercantile Marine," 228.
[40] Ibid, 122.

low incidence of psychological disorder among Turkish people, who refrained from alcohol due to religious belief but smoked, he suggested that promotion of smoking among sailors and soldiers could be an effective means of protecting them from insanity. Moderate consumption of tobacco could help when they were fatigued and without food and drink. The author claimed to have 'heard' sailors on duty insist that they would prefer smoking if asked to choose between food and tobacco.[41] He deliberated on the right quantity and frequency of tobacco usage that would calm the nerves, and deduced from his review of existing writings and statements of smokers that the benefits of controlled smoking outweighed the disadvantages. Finally, he concluded on a self-contradictory note saying smoking should be discouraged despite its apparent usefulness for mental wellbeing.[42]

The discourse of insanitary living conditions reappeared at this time. A correspondent, Mercator, pointed out that while the indiscrete behaviour of naval seamen could be blamed for their higher mortality than passengers, sailors in the merchant navy were more often victim of poor living conditions.[43] At a meeting of the Economy and Trade Department of the National Association for the Promotion of Social Science, held on 19 November 1866 and attended by ship captains, a ship owner and a medical inspector, Capt. Joseph Toynbee proposed several measures for welfare of merchant seamen. He wanted modification of the Merchant Shipping Act to empower the Board of Trade and its officers to inspect the forecastle (upper deck living quarters for sailors) and provisions ('especially lime juice') before, during, and after voyages. He recommended preparing a document with descriptions of the forecastle's size, height, ventilation, drainage, and protection from sea and rain. The provision needed to conform contemporary standards, and instructions from Local Marine Boards were to be sought if

41 W.J. Moore, *Health in the Tropics, or Sanitary Art Applied to Europeans in India* (London: John Churchill, 1862), 212.
42 Ibid, 213.
43 "Shipboard Accommodation for Merchant Seamen," *The Nautical Magazine and Naval Chronicle for 1867* (January 1867): 36.

needed.[44] At the meeting, noted sanitary reformer Edwin Chadwick proposed the formation of an organisation to voice support for merchant seamen's health.

Dr Chevers wrote a detailed account of the occurrence of diseases of seamen due to miasma, unpleasant air, harsh climate, poor diet, adulterated drink, and objectionable behaviour. Although not a naval surgeon, he spent a significant period of time inspecting the health of seamen visiting Calcutta, and had access to government documents on maritime health and sailor mortality. He did not advance any new theory, rather supported the recommendations made by Lind, Blane and Trotter. Aside from the conventional wisdom about protecting oneself from sunstroke, sudden chill and putrefied organic matter, he offered detailed suggestions about appropriate diet that demonstrated his greater knowledge of India than any naval surgeon. In his opinion, sailors should enquire about seasonal fruits and vegetables after disembarking. They should eat sparingly at first, and gradually increase intake. Only the juice of pulpy fruits such as pomelos, pineapples and orange should be consumed, while melons, cucumbers and country plums were to be avoided. Chevers warned against eating local pork and drinking country liquor, toddy and ginger beer. He found cold tea to be the most refreshing drink in summer.[45] His observations, made nearly half a century after the publication of Johnson's books, contained a similar warning against consuming vegetables. The main concern was the presence of worms and small organisms inside raw fruits and vegetables that could cause enteric fever and dysentery. Drinking of unfiltered and unboiled water, and water stored in tanks and cisterns with organic sediment, was also prohibited.

The Society for the Improvement of the Condition of Merchant Seamen was established in London on 27 February 1867 under the leadership of Capt. Henry Toynbee. Among the members of the society were famous surgeons such as William Dixon (Medical Inspector of

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[44] Ibid, 37-38.
[45] Norman Chevers, *On the Preservation of the Health of Seamen* (Calcutta: Military Orphan Press, 1864), 45-46.

the Customs), Norman Chevers (Principal of Calcutta Medical College) and Harry Leach (Resident Medical Officer of *Dreadnought*). Convened with the intention of investigating the seamen's welfare, the society drew up a report with a particular focus on health. In view of the lack of standardised ventilation and cleanliness in merchant ships, as opposed to the Royal Navy's stipulation of minimum space for convicts, emigrants, soldiers, invalidated servicemen and sailors, they proposed various measures for ensuring proper living space, ventilation, and cleanliness for merchant seamen.[46] The report caused the Board of Trade to look into seamen's accommodation and diet.

Chapter VI of the Indian Shipping Bill of 1868, related to the 'provisions, health and accommodation of seamen,' mandated examination of provisions and destruction of inedible food, proper supply of medicine, and certification of lime and lemon juice by an inspector appointed by the Governor General in Council. Every ship with more than hundred passengers was asked to employ a surgeon or qualified medical practitioner. A position for a medical inspector was also instituted in Calcutta to examine every arriving and departing ship, and provide sanitary guidance to ship captains and crews. As regards food, masters of ships were encouraged to carry fresh preserved meats and vegetables, pickles, potatoes, onions, carrots, and molasses.[47] The naval authorities realised the need for different nutrient intake for seamen in the harbour and at sea, compatible with the kind of the labour needed in different circumstances. In 1883, European seamen at the East India Station were given on average 45 Ozs of food daily, but the carbon content of the diet significantly differed from 3717.46 grain in the harbour to 7718.784 grains at sea. The difference was on account of provision of more fat on board ships that consisted of preserved meat, salt beef, salt pork, biscuit, split peas, rice,

[46] David M. Williams, "Mid-Victorian Attitudes to Seamen and Maritime Reform: The Society for Improving the Condition of Merchant Seamen, 1867," *International Journal of Maritime History* 3, no. 1 (1991): 115.
[47] *Annual Report of the Sanitary Commissioner for Bengal for 1868* (Calcutta: Alipore Jail Press, 1869), 559-60.

preserved potatoes, flour, suet, raisins and sugar.[48] The absence of fresh vegetables in the diet was conspicuous

Seamen did not uniformly benefit from these reforms. The forecastles in some vessels were not sufficiently ventilated even in the late 1890s. In worse cases water seeped onto seamen's beds when the ship moved towards the sea. Seamen were still blamed for their poor conditions on ships as an aftermath of reckless debauchery, drinking, and being infected by venereal diseases.[49] In 1892, the Members of Parliament Mr Howell, Mr Chamberlain, Mr Staveley Hill and Mr Knox brought a motion to amend the existing Merchant Shipping Act, making inspection of food and drink on every vessel compulsory. Ships were required to take certificates from a Board of Trade officer. Samuel Plimsoll (famous for having devised the line on a ship's hull marking the maximum safe draft) remarked that merchant ships should be subject to the same rigorous scrutiny as ships carrying soldiers were. This was done to prevent some unscrupulous labour contractors from taking advantage of long journeys to evade the national law for protecting seamen's wages.[50] Mr Chamberlain expressed his disgust with the food supplied to merchant seamen. Sir Michael Hicks-Beach said that food served on passenger ships was already under review, and inspecting every merchant ship would require appointment of many officers and more funding. He supported the idea of inspecting ships returning from long oceanic voyages, proposing amendment of the Bill to the effect of selecting ships for inspection according to the length and duration of routes.[51]

The threat of scurvy did not disappear altogether despite the new dietary regulation, which is evident from the proposal of Dr W. Spooner, medical inspector of the Board of Trade in Liverpool, to overhaul seamen's diet, especially to protect them against scurvy, in 1906.[52]

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48 T.G. Hewlett, *Report on Enteric Fever* (Bombay: Government Central Press, 1883), 37-39.
49 Arthur J. Moss, "Sanitation at Sea," *The Lancet* 140, no. 6736 (September 27, 1890): 691.
50 "Sailors' Food", *British Medical Journal* 1, no. 1630 (March 26, 1892): 670.
51 "Our Sailors' Food", *British Medical Journal*, 1, no. 1631 (April 2, 1892): 728.
52 W. Spooner, "Sailors' Food," *British Medical Journal*, 2, no. 2388 (October 6, 1906): 862-64.

He blamed the nature of the food supplied to sailors for the persistence of scurvy. The Board of Trade could not enforce any diet; they merely oversaw the implementation of the contract between the ship's master and the crew. A sample contract cited by Spooner contained daily ration of bread, tea, coffee, sugar and water, and alternative supply of beef, pork, flour and peas. He mentioned that some ships provided extra and fresh ration, usually on Sundays, in the form of soup bouilli, salted meat, butter, marmalade and pickles. Many of the food agreements kept at shipping offices contained columns such as soup bouilli, preserved meat, preserved vegetables, rice, oatmeal, butter, molasses etc., the quantity of which were left to ship owners for filling in. Even though shipping companies provided these items to sailors, they would often insist on not signing contracts to avoid being legally obliged to obtain food in specific quantities.[53]

Spooner observed that the diet was monotonous, deficient in nutrition, and likely to adversely affect digestion. Steady intake of even the highest quality salted meat was liable to cause stomach disorder. The process of salting dissolved soluble constituents such as the organic acids, alkaloids and extractive matters, and rendered the meat hard and difficult to digest. Sometimes the meat was salted to conceal its low quality. Although inspectors appointed by the Board of Trade checked food on most ships, starting in 1893, Spooner was sceptical of how well they monitored quality. He recommended eating tinned meat despite the public distrust of preserved food provided it contained the right amount of salt. He supported the claim that nutrients present in fresh vegetables prevented scurvy. He rejected the hypothesis that ptomaine poisoning (acute gastrointestinal illness resulting from food consumption) caused scurvy, remarking that provision of sufficient quantity of fresh vegetables and timely replenishing of the stock must be made compulsory for sea voyages. In case fresh vegetables were unavailable, preserved vegetables such as potatoes, carrots, onions or pickles could be

[53] Ibid, 862.

eaten. Additionally, he warned against eating disproportionately protein-based meals, saying what was suitable for active people such as railway track layers would be pernicious for people without sustained physically stressful work, such as soldiers in transit.[54]

Spooner proposed a new diet in which salted meat substituted preserved meat for three days a week, reducing the overall meat intake. He recommended potatoes, carrots, butter, rice, oatmeal, marmalade, raisins, molasses, suet, and pickles in specified amounts so as to maintain a 1:5 ratio between the nitrogenous and carbonaceous ingredients. The price of this diet was not supposed to exceed 1s. per day whereas the old diet cost 11d. per day. The Board of Trade advocated a similar diet in 1883, which was included in every subsequent edition of the *Ship Captains' Medical Guide*, edited by Spooner. Although every ship did not implement the revised diet plan, the incidence of scurvy was remarkably reduced since 1883, which is evident from the following chart.[55]

Proposed Victualling Scale to be Served Out to the Crew per Day, in Addition to the Issue of Lime Juice and Sugar Required by Law. (By Dr. Spooner.)

	Biscuit.	Flour.	Beef.	Pork.	Preserved Meat.	Peas.	Preserved Potatoes.	Preserved Carrots.	Butter.	Oatmeal.	Rice.	Marmalade.	Sugar.	Raisins.	Molasses.	Suet.	Pickles.	Tea.	Coffee.
	oz.	oz.	lb.	oz.	oz.	pt.	oz.	oz.	oz.	oz.	oz.		oz.					oz.	oz.
Sunday	12	8	—	—	12	½	—	8	2	—	—		2					¼	1
Monday	12	—	1	—	—	—	2	—	—	4	—		2					¼	1
Tuesday	12	8	—	—	12	—	—	8	—	—	—		2					¼	1
Wednesday	12	8	—	12	—	½	2	—	2	—	4		2					¼	1
Thursday	12	—	—	—	12	—	—	8	—	4	—		2					¼	1
Friday	12	8	1	—	—	—	2	—	2	—	—		2					¼	1
Saturday	12	8	—	12	—	½	2	—	—	—	4		2					¼	1
	lb.	lb.	lb.	lb.	lb.		lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	pt.	oz.	oz.		
One man per week	5.4	2.8	2 0	1.8	2.4	1	.8	1.8	6	8	8	1	14	½	½	4	4	1	7

1 lb. per week

½ lb. per week

½ lb. per week

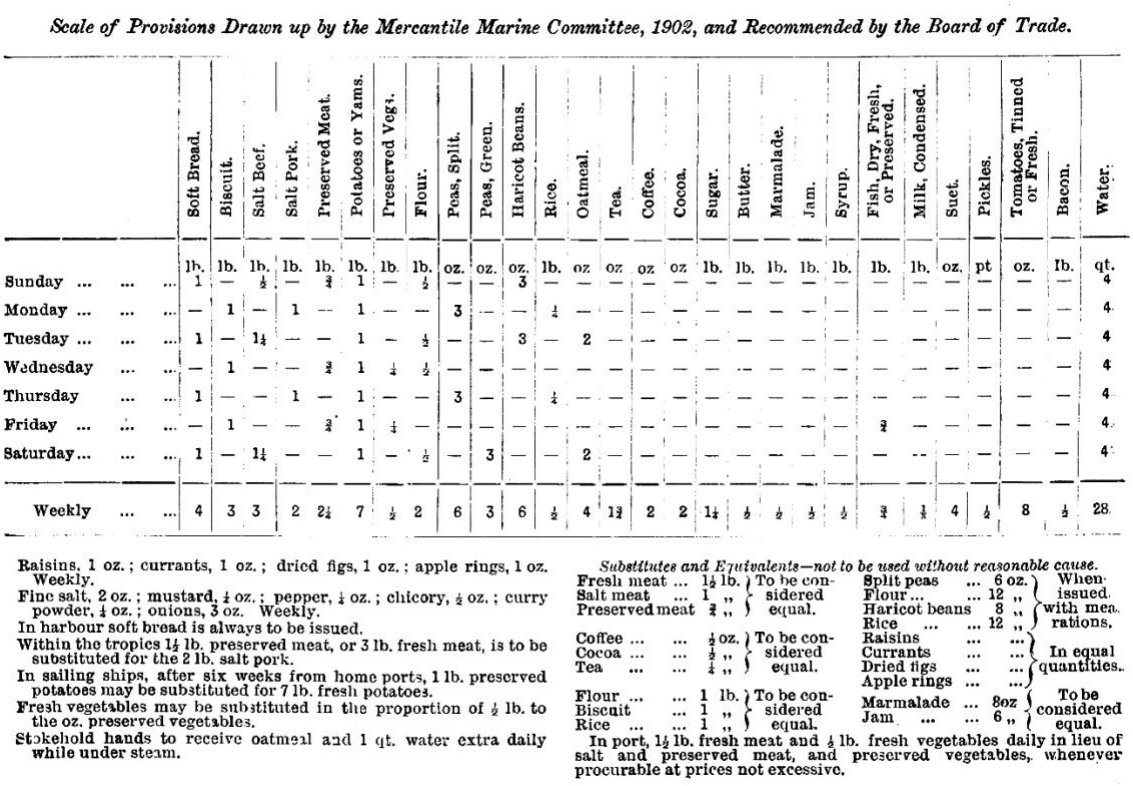
4 oz. per week

4 oz. per week

SUBSTITUTES.
Fresh meat to be given instead of salt and preserved as long as possible after leaving port.
Fresh potatoes, carrots, etc., 3½ lb. per week, instead of preserved vegetables, as long as they last.
Oatmeal may be substituted for rice in cold weather, and vice versa in hot weather.
Preserved onions may be substituted for preserved carrots.

54 Ibid, 862-63.
55 Ibid, 863.

Figure 2.1 Diet plan made by Dr Spooner[56]



Scale of Provisions Drawn up by the Mercantile Marine Committee, 1902, and Recommended by the Board of Trade.

	Soft Bread.	Biscuit.	Salt Beef.	Salt Pork.	Preserved Meat.	Potatoes or Yams.	Preserved Vegs.	Flour.	Peas, Split.	Peas, Green.	Haricot Beans.	Rice.	Oatmeal.	Tea.	Coffee.	Cocoa.	Sugar.	Butter.	Marmalade.	Jam.	Syrup.	Fish, Dry, Fresh, or Preserved.	Milk, Condensed.	Suet.	Pickles.	Tomatoes, Tinned or Fresh.	Bacon.	Water.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	oz.	oz.	oz.	lb.	oz	oz	oz	oz	lb.	lb.	lb.	lb.	lb.	lb.	lb.	oz.	pt	oz.	lb.	qt.
Sunday	1	—	½	—	¾	1	—	½	—	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
Monday	—	1	—	1	—	1	—	—	3	—	—	¼	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
Tuesday	1	—	1¼	—	—	1	—	½	—	—	3	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
Wednesday	—	1	—	—	¾	1	¼	½	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
Thursday	1	—	—	1	—	1	—	—	3	—	—	¼	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
Friday	—	1	—	—	¾	1	¼	—	—	—	—	—	—	—	—	—	—	—	—	—	—	¾	—	—	—	—	—	4
Saturday...	1	—	1¼	—	—	1	—	½	—	3	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
Weekly	4	3	3	2	2¼	7	½	2	6	3	6	½	4	1¾	2	2	1¼	½	½	½	½	¾	¼	4	½	8	½	28

Raisins, 1 oz.; currants, 1 oz.; dried figs, 1 oz.; apple rings, 1 oz. Weekly.
Fine salt, 2 oz.; mustard, ½ oz.; pepper, ½ oz.; chicory, ½ oz.; curry powder, ½ oz.; onions, 3 oz. Weekly.
In harbour soft bread is always to be issued.
Within the tropics 1½ lb. preserved meat, or 3 lb. fresh meat, is to be substituted for the 2 lb. salt pork.
In sailing ships, after six weeks from home ports, 1 lb. preserved potatoes may be substituted for 7 lb. fresh potatoes.
Fresh vegetables may be substituted in the proportion of ½ lb. to the oz. preserved vegetables.
Stokehold hands to receive oatmeal and 1 qt. water extra daily while under steam.

Substitutes and Equivalents—not to be used without reasonable cause.

Fresh meat ...	1½ lb.	To be considered equal.	
Salt meat ...	1 ,,		
Preserved meat	¾ ,,		
Coffee	½ oz.	To be considered equal.	
Cocoa	½ ,,		
Tea	¼ ,,		
Flour	1 lb.	To be considered equal.	
Biscuit ...	1 ,,		
Rice	1 ,,		
Split peas ...	6 oz.	When issued with meat rations.	
Flour	12 ,,		
Haricot beans	8 ,,		
Rice	12 ,,		
Raisins		In equal quantities.	
Currants			
Dried figs			
Apple rings			
Marmalade ...	8oz	To be considered equal.	
Jam	6 ,,		

In port, 1½ lb. fresh meat and ½ lb. fresh vegetables daily in lieu of salt and preserved meat, and preserved vegetables, whenever procurable at prices not excessive.

Figure 2.2 Diet plan made by the Mercantile Marine Committee[57]

Medical guides and medicine chests for ship captains

The experiences of naval surgeons and instruction for treatment were encapsulated in medical treatises and guides. Treatises helped to train young surgeons and experienced surgeons to enhance their understanding of disease with comparative knowledge. Guides were for ship captains to learn basic medicines to treat their ill crew. The preface of Henry Gregory's medical guide mentioned that there were times when accidently or by appointment, the captain or the ship officer became the doctor. This and similar companions were meant to give them basic

[56] Ibid, 864.
[57] Ibid.

instruction in medicine, avoiding the use of potentially confusing technical terms or phrases.[58] It listed the inventory of medicines for the chest and the directions for use. In the section 'A Concise Account of Diseases Most Likely to Occur during a Voyage,' the author drew attention to the necessity of general cleanliness of both the ship and its personnel, ventilation, and discipline. He warned against drinking excessive ardent spirits and sexual activity in tropical climates as the ideal way for countering contagious diseases, diarrhoea, dysentery, colic and cholera.[59] Without any training in medicine, captains relied on such information in intelligible language to monitor and treat ill seamen. They dutifully logged their response to problems so that the shipping company knew they did their best in an emergency.

The Mercantile Marine Act of 1844 made it compulsory for all ships without surgeons to carry a chest of 'simple medicines.' The introductory note to a booklet on medicine chests published in 1845 said that its purpose was to take care of the 'welfare' and 'happiness' of 'British seamen'. Like other maritime medical guides of the time, the booklet was for the captains of ships without surgeons to efficiently examine and treat diseases. It also prescribed treatment for accidental fractures, dislocations, and other wounds and injuries.[60] Surgeons often complained about the short supply of medicine and medical instruments on board ships. Dr Joseph Ashbury Smith described his experience as a surgeon with the Calcutta-bound naval ship *Stag* in 1845-46 in a letter to the editor of *The Lancet*. While well-stocked on cheap and inessential substances like sulphur, ships were often short on bottles for dispensing tonic to seamen. The table Smith used swayed with the waves. In the absence of weighing scales and containers he had to pour an approximate amount of medicine in the patient's spare grog-can. Patients were supposed to guess the dose while drinking the medicine. Sometimes the surgeon

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58 Henry H. Gregory, *A Companion to the Sea-Medicine-Chest; Consisting of Plain and Explicit Directions for the Treatment of the Various Diseases Incident to the Nautical Life, in all Climates* (London, 1841), iii-iv.
59 Ibid, 28-29.
60 Edward Palmer, *A Guide-Book to the Government Medicine Chest for Merchant Seamen* (London, 1845).

used empty food cans obtained from the kitchen as medicine bottles. It was difficult to maintain medical instruments during voyages as the sea air rusted them. Smith missed the use of necessary articles such as tooth-key, nitrate of silver, morphine, sulphate of copper, digitalis, catheters and midwifery instruments. He realised that surgeons were responsibility for procuring their instruments before the journey as ship owners and captains could not have cared less. He recommended carrying commonplace medicines such as the powdered extract of colocynth, powdered aromatic confection, purgative pills, emetics, calomel and jalap, which were often overlooked by medicine suppliers. In his opinion, doctors working in passenger ships should cautiously check the inventory and acquire materials keeping in mind a potentially large number of patients.[61]

In a number of Acts to follow, the parliament endorsed further medical assistance to seamen. The parliamentary session of 1849 introduced an Act which enforced signing of written agreements when recruiting seamen, and stocking of necessary medicines and medicaments for accidents and diseases resulting from sea voyages. Except those bound for European or Mediterranean ports, ships were required to carry sufficient quantities of lime or lemon juice, sugar and vinegar. The owner of the ship would be penalised 20 pounds penalty in case of violation of these rules.[62] With the passing of these Acts, books such as *The Seamen's Medical Friend: A Companion to the Government Medicine Chest* started to be published.[63] Revised editions of earlier books were also in vogue. *Cox's Companion to the Sea Medicine Chest*, one of the most popular books in reprint, adopted a free style of writing for the purpose of easy comprehension for all. The surgeon to the Dreadnought Seamen's Hospital praised the

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61 "Surgeons to Emigrant Ships: Insufficient Supply of Stores," *The Lancet*, 61, no. 1552 (May 28, 1853): 504-5.
62 T. Spencer Wills, *The Scale of Medicines with which Merchant Vessels Are to be Furnished, by Command of the Privy Council for Trade; with Observations on the Means of Preserving Health of Seamen* (London, 1851), i-iii.
63 *The Seamen's Medical Friend: A Companion to the Government Medicine Chest Intended for the Use in Ships Not Carrying Surgeons Containing Directions for the Preservation of Health and the Care of Diseases, Wounds, Fractures, Dislocations and Other Accidents Likely to Occur at Sea, Comprising also the Admiralty Scale of Medicines* (Liverpool, 1857).

style and content, while the surgeon to the Royal Free Hospital said the book was the best of its kind.[64]

In the preface to the second edition of his medical guide, F.D. Fletcher pointed out that he deliberately avoided jargons to make the book comprehensible to laypersons.[65] The tenth edition had several additions and changes done by F.T. Roberts. For practical purposes it was divided into four main parts: medical diseases, accidents, surgical diseases and minor operations.[66] It also included extracts from Acts of Parliament on the improvement of the condition and discipline of seamen in the merchant service, including an extract from *The Merchant Seamen's Act* referring to lime juice. This edition also contained sections on 'Notes on the Merchant Shipping Act of 1854', on the 'Scale of Medicines and Medical Stores' and 'On the Preservation of Health and Prevention of Disease'. The 'scale of medicine' section was particularly significant for its emphasis on accurately measuring the ingredients and dosage of drugs.[67] The latter section on preservation and prevention stressed the importance of maintaining a healthy body by practicing temperance, cleanliness and exercise, as well as a healthy mind.[68] In addition, the book said, 'no ship therefore, ought to be without a supply of good books'.[69] Several other books were written in accordance with the provisions of the

64 R. Davis, *Cox's Companion to the Sea Medicine Chest, and Compendium of Domestic Medicine; Particularly Adapted for Captains of Merchant Vessels, Missionaries, and Colonists, with Plain Rules for the Taking the Medicines to which are Added Directions for Restoring Suspended Animation, the Method of Obviating the effects of Poisons, A Plain Description of the treatment of Fractures and Dislocations and a Concise Account of Asiatic or Spasmodic Cholera*, 33rd ed. (London, 1845).
65 F.D. Fletcher, *The Seamen's Medical Friend: A Companion to the Government Medicine Chest and Substitute for Surgeon or Physician on Board Ship Containing Hints Towards Preserving the Health of a Ship's Crew and Plain Directions for the Use of the Medicines in the Cure of Diseases and Accidents with Full and Clear Instructions for the Treatment of Fractures and Dislocations*, 2nd ed. (Liverpool, 1858).
66 Fletcher, *The Seamen's Medical Friend*, 10th ed. (1867), 3.
67 Ibid, 7-9.
68 Ibid, 38.
69 Ibid, 41.

Merchant Seamen's Act, intended to provide useful information and guidance concerning the preservation of health of seamen on board ships.[70]

Adding to the recommendation of the 1844 Act, the Merchant Shipping Act 1867 made carrying a manual alongside the medicine chest compulsory. Harry Leach, who held the illustrious positions of the medical advisor to the Marine Department, resident medical officer of the Dreadnought hospital ship, and Inspector of Lime and Lemon Juice for the Board of Trade, wrote by far the most practical medical guide for seamen's health, including both prevention and treatment.[71] Commenting on his influence on the publication of such a guide, Tim Carter writes that Leach not only floated the necessity of a medical guide in one of his anonymous articles, but was also a part of the committee that approved the guide and advised the department that adopted it. His deep involvement ensured his medical guide monopolised the market, much to the chagrin of the authors and publishers of similar guides.[72] The main tenet of this authoritative text was for captains to blindly follow all the recommendations, and not apply personal choice or experience. It is not known how they regarded these accuracy of these guides as instructional manuals. It is certain, however, that the guides were promptly updated with information on recent developments in medicine. To make understanding when and how to take preventive measures easier for captain, the guides gave out locations and weather conditions where certain disease symptoms were known to prevail. The changing recommendations on hygiene and diet were the most important lessons of these guides.

Seamen's hospitals

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70 Henry Hadlow, *Directions for the Use of the Sundry Medicines and Utensils Contained in the Sea Medicine Chest; to which are Annexed Plain Directions for the Treatment of Diseases Incidental to a Seafaring Life, And Remedies for the Effects of Poisons*, 8th ed. (London, 1860).
71 Harry Leach, *The Ship Captain's Medical Guide* (London: Simpkin, Marshall, 1868).
72 Carter, *Merchant Seamen's Health*, 32.

Hospitals for seamen operated in India even before the Sick and Hurt Board proposed, in January 1794, that naval hospitals should be built in the country.[73] In Calcutta, a hospital was constructed for soldiers and seamen in 1707.[74] A naval hospital was established in Madras in 1745 around the same time when as the Navy realised the economic value of its seamen as trained workers, and began sending the ill and injured to makeshift hospitals instead of caring for them in private lodging houses in Britain.[75] Commenting on the service at the Madras hospital in the 1780s, Rear Admiral Tomlinson wrote that the premises resembled 'bullock sheds' where sick and wounded seamen were in a shameful condition. He reported complete lack of care, cleanliness, comfort, and edible food, and accused the Admiral and his secretary of taking bribe from the contractors who supplied provisions. Other officers also reported observing sick and wounded British seamen coming out of the hospital and begging for food on the streets.[76] The Madras government selected a new site for a new hospital in 1784, and in anticipation of this institution the existing hospital was closed in 1790. Before a new building came up, seamen were admitted to the Garrison Hospital.

The situation supposedly improved under the command of Admiral Peter Rainier, who supervised a naval section of the Garrison hospital. In the late 1790s. He would ask ship captains and surgeons to visit their hospitalised crew every Monday when in port.[77] The new hospital established in 1808 was apparently well-designed and had a nice garden. The top floor, where patients exercised in fresh air, had a great view over Madras.[78] The number of ill seamen

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73 Peter A. Ward, *British Naval Power in the East 1794-1805: The Command of Admiral Peter Rainier* (Woodbridge: Boydell Press, 2013), 212.

74 Capt. Alexander Hamilton said about this institution, 'The Company has a pretty good hospital at Calcutta, where many go in to undergo the penance of physic, but few come out again to give account of its operation.' C.R. Wilson, "The First Two Hospitals in Calcutta," *Indian Medical Gazette* 38, no. 1 (January 1903): 1.

75 Harrison says that the temporary hospitals were poorly managed and were soon replaced by two permanent institutions at Haslar (1754) and Stonehouse (1762). They soon became a model for similar institutions across Europe and also centres for studying diseases of the warm climates. Harrison, *Medicine in an Age of Commerce and Empire*, 18-19.

76 Edward Pelham Brenton, *The Naval History of Great Britain, from the Year 1783 to 1786, Volume 1* (London: Henry Colburn, 1837), 200-1.

77 Ward, *British Naval Power in the East*, 112.

78 Ibrahim, "Account of a Residence in Madras," *The Scots Magazine*, February 1, 1813, 100.

was apparently so low that government thought running a separate hospital for them futile. They closed the building in 1831 and sent seamen to the military hospital for treatment.[79] As in Madras, European seamen in Bombay were taken to the King's Hospital, established in 1756, which was renamed Bombay Marine Hospital in 1788. In Calcutta, seamen were admitted to the Police Hospital, which was located close to their boarding houses, rather than the larger General Hospital.[80]

In Calcutta, a seamen's hospital was established in Howrah, across the river, in 1824. Little is known about the early years of the Howrah Seamen's Hospital, except that Dr Duncan Stewart was the first assistant surgeon and manager of the premises. In 1837, *The Englishman* published extracts from selected correspondences that showed the East India Company's interest in supporting the hospital. Satisfied with the hospital's service, the Court of Directors permitted Dr Stewart to open a sanatorium at the hospital on an experimental basis in 1836.[81] In their response to the EIC's request for detailed information on the hospital, the Medical Board expressed contentedness with the quality of medical treatment and the low death rate among the 461 patients, including 77 officers, for the year 1836. They also mentioned the financial precariousness of the institution. Although most of the expenses were covered by fees paid by patients, the income was not sufficient enough to attract skilled surgeons at a lucrative remuneration.[82] W. Hope, the Master Attendant, congratulated Dr James Ranken, officiating secretary to the Medical Board, on the hospital's management, saying his enquiries about the

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79 A. Lakshmanaswami Mudaliar, "A History of Medical Relief in Madras," *The Madras Tercentenary Commemoration Volume* (London: Oxford University Press, 1939), 57.

80 The Police Hospital, formerly situated on the Circular Road, was instituted for the purpose of affording an asylum to the miserably poor and dying; who in former times are stated to have been found in the street, gnawed by jackals. It was latterly improved considerably, so as to admit of receiving cases of Europeans, and removed into the centre of the town. An Apothecary, to live on the premises, was entertained. *The Bengal and Agra Annual Guide and Gazetteer for 1841, Vol I*, 3rd ed. (Calcutta: William Rushton & Co., 1873), Part III, 105.

81 Public Letter, No. 45 of 1836, the Court of Directors to the Medical Board, August 2, 1836, *The Englishman*, March 4, 1837, reprinted in *Calcutta Monthly Journal* 28 (22 May 1837): 190.

82 The Medical Board to the Governor of Bengal, January 31, 1837, Ibid, 190.

institution among commanders of ships had yielded excellent reviews about comfort and treatment.[83] This report was concluded by a detailed account of the functions of the hospital.

The report drew attention to the small brochure circulated by Dr Stewart in 1834 for the mercantile community in Calcutta. It began with a description of the prevalence of tropical diseases among sailors. He criticised the practice of keeping ill seamen on their crowded and insanitary ships while anchored at the harbour, saying that they would not receive proper nursing and comfort in spite of the presence of medical officers on board. He remarked that ships without surgeons of their own failed to enlist medical assistance from shore as medical practitioners at the port town would either be occupied with their own practice or find the ship's environment inconvenient and dangerous for prolonged visits. Finally, he thought the General Hospital did not possess the capacity to treat seamen, was far away from the port and the sailortown, and did not offer private accommodation, being mainly in the service of troops, townspeople and paupers.

In recognition of his service to ill seamen, Stewart was permitted to spend his leisure hours managing the Howrah hospital. He was promised gratis use of two dozen hospital beds, furniture, medical equipment, and utensils from the Government store for six months. He could purchase them after the trial period should he wished to continue with institution. He did not intend to solicit financial assistance from the Chamber of Commerce, merchants and shipping agents, but asked for their help in identifying distressed seamen as protection against paupers using the hospital and for the ship's captain to adhere to his responsibility to defray the actual cost of treatment. According to the port's regulation, every ship needed a certificate from the Steward of the General Hospital confirming payment of all dues incurred by medical attendance to its crew and security deposit for any sailor left behind for treatment. Dr Stewart

[83] The Master Attendant to the Officiating Secretary to the Medical Board, January 24, 1837, Ibid, 190.

was assured by mercantile houses that even though the regulation did not cover Seamen's Hospital, not a single bill towards treatment of sailors went unpaid. He fixed the daily charge for officers at two Rupees and for seamen at one Rupee. These charges included house-rent, clothing, bedding, food, medicines, and medical attendance. The income was used to pay for house rent, apothecary's salary, servants' diet, medicine, and clothing. The statistics of the number of ships, officers, seamen, the ill sent to hospital, the ill treated on board, deaths on the way to hospital, and death on board over the last five years pointed out an annual average of 280 admissions and 22 deaths.

The pamphlet included testimonials of the apothecary's qualifications and letters of support from some of Calcutta's most well-known surgeons. However, William Twining (1790-1835), formerly a surgeon with the General Hospital, believed that the Seamen's Hospital need not be continued as it was inferior to the General Hospital. The idea of a floating hospital came up after six months, but it was not done despite the government's support. As Dr Stewart was shifted from the hospital, despite his unwillingness to leave a rapidly growing institution, he bestowed the entire hospital furniture to his assistant J.W. Linton, who succeeded him as the superintendent.[84] A boat was used to ferry ill seamen from their ships to the hospital.[85] Dr Stewart was added to the Sailors' Home committee on the merit of his experience with the Seamen's Hospital. Although Mr Linton was an adroit manager, he was not able to generate enough money to remunerate the civil surgeon. The *Englishman* correspondent averred that the Chamber of Commerce and mercantile houses should come to the institution's rescue by providing 300 rupees a month as salary for the main employees.[86] The staff of this hospital in 1841 included W.A. Green (surgeon), Rev. J. Bowyer (minister), J.W. Linton (superintendent), J.C. Sangar (apothecary) and J. Walker (overseer). Linton died in 1845, aged

[84] Ibid., 191.
[85] *Bengal Hurkaru*, March 4, 1837, 215.
[86] *Calcutta Monthly Journal*, 191.

35. The hospital continued spending more than the average 500 rupees it received from inmates every month.[87] The profile of patients in the 1830s comes out from this table, the figures from which sometimes contradict contemporary sources:

Years.	Officers.	Seamen.	Total.	Died.	Cured.
1834	10	10	70	3	67
1835	56	165	221	15	201
1836	77	323	400	8	392
1837	94	458	552	35	77
1838	46	490	536	37	499
1839	65	743	808	22	786
Total.	348	2230	2587	120	2467

Figure 2.3: Number of Officers and Seamen received into the Howrah Seamen's Hospital from its formation in Nov. 1834, to the 31st December 1839.[88]

Seamen were admitted on the authority of ship captains. As in the case for paupers, the expense for seamen belonging to the Pilot Establishment and the East India Company's Marine was charged to the Military Auditor General.[89] The cost of treatment was borne by the Navy, the ship commander, or the ship owner. The Howrah Seamen's Hospital charged a daily rate of Rs 4 for first class officers, Rs 2 for second class officers, and Rs 1 for common seamen.[90] The fees were initially collected by the hospital superintendent from ship captains, but by 1840s the provincial government had taken the responsibility of collected the money. Calculation of the expenses involved the master attendant, the marine surgeon, the garrison staff of Fort William,

87 *The Bengal and Agra Annual Guide and Gazetteer for 1841, Vol I*, PART III, 359.
88 Ibid., 360.
89 Ibid., 358.
90 *Bengal Hurkaru*, January 2, 1835, 1.

the Medical Board, and captains and owners of English or foreign trading ships.[91] Many ship captains donated to the hospital. Captain P. Mearing, former commander of the ship *Euphrates* that sailed in the Persian Gulf, bequeathed Rs 5,000 to the hospital, among other charitable donations, on his death in Serampore on 4 November 1847.[92]

Seamen provided hospital surgeons experimental bodies for studying tropical hygiene. Some studies, such as Dr C. Morehead's observations on delirium tremens among seamen at the European General Hospital in Bombay, corroborated the pathological knowledge of the ailment prevalent in Britain.[93] Other studies, such as A.C. Macrae's successful treatment of 15 cholera patients in Calcutta in 1850 by administering oxygen, tested conventional knowledge and promoted new ideas of treatment.[94] Macrae's method of treatment was publicised in many newspapers but not taken seriously by the medical community due to the lack of details and evidence.[95] In 1851, Dr Macrae reportedly experimented with nitro-muriatic acid bath for stimulating capillary circulation in bodies on the verge of collapsing.[96] Macrae was replaced as civil surgeon by Norman Chevers on his promotion to Marine Surgeoncy in Calcutta.[97]

The number of patients admitted to the hospital fluctuated in tandem with frequency of arrival of ships at the Calcutta port. The number of patients dropped so much in the first half of 1847, coinciding with the scarcity of European seamen that hindered recruitment for outward

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91 *The Bengal and Agra Guide and Gazetteer for 1842, Vol I* (Calcutta: William Rushton & Co, 1843), 129.
92 "Mission Burial Ground, Serampore," *The Bengal Obituary*; *or, a Record to Perpetuate the Memory of Departed Worth* (London and Calcutta: W. Thacker & Co, 1851), 349.
93 C. Morehead, "Remarks on the Treatment and Pathology of Delirium Tremens," *Transactions of the Medical and Physical Society of Bombay* 6 (Bombay: American Mission Press, 1843): 139-52.
94 *Yorkshire Gazette*, June 8, 1850, 7.
95 "Cure for Cholera," *Provincial Medical Surgical Journal* (June 26, 1850): 363.
96 James Ranald Martin, *The Influence of Tropical Climate on European Constitutions* (London: John Churchill, 1861), 564. Nitric acid was considered a therapeutic agent in the first half of the nineteenth century. Mark Harrison's work on the company surgeon Helenus Scott outlines the doctor's experiments with nitric acid as a better remedy for syphilis than mercury. Harrison, "Medical Experimentation in British India: The Case of Dr Helenus Scott," in *The Development of Modern Medicine in Non-Western Countries: Historical Perspectives*, ed. Hormoz Ebrahimnejad (London and New York, Routledge, 2009), 24-40.
97 *The Friend of India*, February 3, 1853, 71.

passage of ships, that the hospital incurred monthly loss of 150 rupees.[98] It repeatedly ran into financial trouble due to its high expenditure, mainly because it exclusively treated Europeans, maintaining whose diet required substantially greater amount of money than would have been spent on Indians.[99] The hospital gradually went out of service, which is evidenced by the increasing admittance of seamen to the Howrah Hospital. It admitted 68 seamen in 1861 and 368 in 1865, indicating rapid growth.[100] Hearth reports and record mention the Howrah Hospital as the sick bed for seamen from the 1870s, so it can be presumed the Seamen's Hospital closed sometime in the late 1860s.[101] The Howrah Hospital received grants from local philanthropists such as Baboo Chooni Lal Seal for additional accommodation for seamen.[102]

In 1867, a system of hospital port dues was introduced as a means to generate money for medical aid given to seamen on board ships or on shore, and to support the treatment of seamen in nearby public hospitals or dispensaries. The local government could give a ship exemption from paying the dues if it was satisfied that the ship has sufficient means of treating its crew on board and would not need to send them to hospitals in the port.[103] The dues were initially distributed among the General Hospital, the Medical College Hospital, the Howrah Hospital and the Chandney Hospital in the decreasing order of allotment. It was expected to help the Government of Bengal build a riverside dispensary for seamen that was planned in August 1866. The military authorities were asked to allow usage of a site within the limits of Hastings and the Public Works Department prepared the plans and estimated costs of raising

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98 "Howrah Seamen's Hospital," *Allen's Indian Mail*, no. 83 (August 24, 1847): 483.
99 *Statement Exhibiting the Moral and Material Progress and Condition of India, During the Year 1859-60* (n.l.: House of Commons, 1861), 52.
100 "The Howrah General Hospital," *Indian Medical Gazette* 1, no. 7 (July 1866): 196.
101 A report on cholera-stricken seamen on board *Edith Moore* mentions the disease could have been brought on board by John Becker, who had been under treatment at the Howrah Hospital and shifted to the General Hospital in a state of collapse, where he died five minutes after admission. Joseph Ewart, "Report on an Outbreak of Cholera on Board the Edith Moore," *Indian Medical Gazette* 5, no. 7 (July 1870): 156.
102 James Irving, "Report of the Calcutta Medical Institutions for the Year 1878," *Indian Medical Gazette* 14, no. 8 (August 1879): 241.
103 H.M. Birdwood and H.J. Parsons eds., *The Acts of the Legislature in in Force in the Presidency of Bombay, Vol. VI 1873-1875* (Bombay: Education Society's Press, 1876), 329-30.

the dispensary. The project met with much delay as the planning took longer than was anticipated.[104] In 1873 it was decided that the dispensary was to be supervised by the General Hospital and its construction was budgeted to cost 18,000 rupees.

The Port Dues Act Amendment Bill to consolidate and amend the law relating to port dues was introduced at the meeting of the Council of the Governor General of India on 21 April 1874. Section 60 of the Bill proposed to extend the provisions to ships at any Indian port anchored within a short distance from a public hospital or dispensary. Section 61 suggested using port dues to support hospitals that provided medical care for seamen. Section 62 propounded refusal of port clearance to any ship not having fully paid its hospital due.[105] On 9 March 1875, during the discussion of the reports of the Select Committee on the Bill, Bullen Smith, head of the firm Jardine, Skinner & Co. and member of the council, asked whether the Board of Port Commissioners could use hospital dues to employ a Health Officer, which was highly recommendation by the Lieutenant Governor, as they had no recourse to money in addition to hospital dues and their general revenue?[106] The Select Committee considered the appointment of a Health Officer very useful but argued against providing his salary from hospital dues alone. They wanted the person to be put in charge of superintending the sanitary condition of the port and adjoining areas that seamen visited, and pay part of his salary from other government funds, to be able to justify the purpose of a new position that benefitted both ship owners and local residents.[107]

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[104] WBSA: Proceedings to the Lieutenant-Governor of Bengal, Marine Department, January 1873. No. 5190, dated Calcutta, August 20, 1872. Captain S.G. Boon, Officiating Master Attendant, to the Officiating Secretary to the Government of Bengal, General Department. Nos. 3-5.

[105] "Port-dues Act Amendment", *Abstract of the Proceedings of the Council of the Governor General of India, 1874*, *Vol. XIII* (Calcutta: Office of the Superintendent of Government Printing, 1875), 111.

[106] "Port-dues," *Abstract of the Proceedings of the Council of the Governor General of India, 1875*, *Vol. XIV* (Calcutta: Office of the Superintendent of Government Printing, 1876), 113-14.

[107] Ibid, 118.

The amount of money raised by the Fund came under scrutiny in 1882 when Dr Edward Alfred Birch, Superintendent of the Presidency General Hospital, requested increase in the allocation of 1 rupee for the maintenance of each seaman. In a long letter to the Surgeon General for Bengal, he criticised the current practice of admission of ill seamen to hospitals.[108] Seamen were required furnish 'admission orders' provided by ship captains at the time of admission. This order was appended as a voucher to the nominal monthly bill that the hospital superintendent, Birch himself in this instance, submitted to the Accountant-General on account of sick seamen treated in the hospital. The bill would not be reimbursed without the admission order, which meant monetary loss for the hospital unless the seaman receiving treatment submitted the order in time. However, sick seamen without admission orders often went to the hospital for treatment. They would usually be given a prescription that the person was merely indisposed. If suffering from serious illness and not recovered well enough to return to ship, they were granted a certificate that the person needed treatment and should be given admission order to return to the hospital. If the man was too ill to return to his ship, an application for admission order was made through the Shipping Master.

The second course of action often led to the deterioration of seaman's health as they were exposed to the Indian climate in their long walk back to the ship. Many of whom appealed for relief at the hospital, and who really were ill, affirmed that they had previously requested their captains to supply them with orders or to grant permission for them to visit the hospital, but captains often refused. Birch stated having seen a captain angry because a man with advanced heart disease was not handed over to him as "fit for duty." On the contrary, he frequently got admission orders for men suffering from what appeared to be mere mosquito

[108] WBSA: Proceedings to the Lieutenant-Governor of Bengal, medical and Municipal Department: Branch Medical. Head, Dispensaries and Hospitals. Calcutta, September 1882, File no. 6, Collection no. 1, Proceedings no. 16-18, Maintenance of Sick Seamen from the Port Dues Fund – (Admission of Seamen into Hospitals), no. 316, Dr Edward A. Birch, Superintendent, Presidency General Hospital to A.J. Payne, MD, Surgeon-General for Bengal, July 24, 1882.

bites. He was dismissive of the skills of ship surgeons, saying their eagerness to please the masters of vessels would often get in the way of giving honest opinion. To prove his point, he attached a fit certificate given by a surgeon, dated three days after the men alluded to had been in hospital and declared unfit for duty and subject to treatment by two Hospital Surgeons. Even worse was the fact that captains sometimes did not issue the admission order though the ill seaman remained at the hospital for months. In such a case, and merely in consequence of the captain's neglect, or in some instances of his refusal, or of his determination to not comply, the state, and not the Port Trust Fund (i.e. the ship), bore the expense.

Among the examples Birch furnished was the hospital admission of three seamen of the *Clan Mackay* without order, of whom J. Burke was admitted for syphilis and remained for nine days, W. Smith was treated for hepatitis for 21 days, and W. Thomas was mended for fracture for 21 days. J. Downey of the *Glencastle* and N. Leitch of the *Benares* weres nursed for fever for four and three days respectively. The 58 rupees the hospital spent on these five men and was not reimbursed as the captains had not given admission orders. The *Clan Mackay* affair showed how difficult an apathetic captain could be. The ship's captain knew the whereabouts of his sick crew since the hospital had requested admission orders after admitting the seamen on the same day they left the ship, and yet logged them as deserters. This not only deprived the hospital of its legitimate revenue, but the seamen of their wages. Worse, if this sailor became a chronic invalid, he would be thrown as a pauper upon the streets, for as a deserter he could not claim a passage home as a distressed seaman, under the Board of Trade Rules.

Birch alleged that some captains regarded the hospital as an institution hostile to their interests, whereas in reality the hospital largely protected them in ways they often did not realise. On an almost daily basis, he apparently turned away seamen who either were trying to malinger or to exploit trivial ailments with the object of evading work or changing ships, and

thus the hospital helped to uphold discipline. Some captains looked upon a seaman as a machine from which a certain amount of work was to be extracted, and they would not believe in illness unless it affected them personally. The most interesting part of Birch's narrative is his assertion that a captain sometimes used the hospital to get rid of his crew. He wrote about the captain of the ship *Idomene* who went to the hospital to enquire about James Brown of his ship. He inspected the person in the captain's presence and pronounced him fit to go to the sea and to work. At this point, the captain became infuriated and told him that he did not want 'such an [sic] useless fellow,' and that the man was 'rotten from syphilis,' though the person had no signs of syphilis. He was annoyed that the Shipping Office would not allow him to discharge the man since the hospital refused to declare him unfit. However, the person returned to the hospital the following day with a slight cut upon his foot, making him unfit as the captain had wanted and Birch suspect the captain's role in it. Birch was dismayed by the lack of understanding of many captains that it was not easy to malinger by feigning problems like heart disease, dysentery, pneumonia or phthisis. Diseases were different from a fracture or a wound, and 80 to 90 per cent of the seamen admitted to the hospital were probably not malingerers as popularly believed. Birch criticised the system of stopping the wages of seamen admitted for venereal diseases for the period they were in hospital. In his opinion, the regulation dissuaded diseased men from declaring themselves, very often till very late, which simply delayed their discharge from service and subsequent destitution.[109] Birch's reasonable entreaties failed to compel the Government of Bengal to consider increasing the present rate for treatment of sick seamen.[110]

The collections from the Fund went to several institutions. The Calcutta Hospital Nurses Institution solicited a grant from the Fund in 1876. The Government of Bengal

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109 Ibid.

110 Ibid, no. 928T – M, E.N. Baker, Under-Secretary to the Government of Bengal, Medical and Municipal Department, to the Surgeon-General, Bengal, September 11, 1882.

sanctioned Rs 10,000 for their upkeep.[111] A committee appointed in 1896 to consider the needs of the European General Hospital, presided over by H.H. Risley, Secretary to the Government of Bengal, observed that hospital port dues from 1868 to 1896 amounted to 16,21,787 rupees. The money had been used to support the European General Hospital and provide medical aid for seamen. They considered judging the propriety of the investment of hospital dues beyond their mandate, but remarked that the transfer of such a large sum of money from merchants to the government obligated the latter to offer advanced hospital care, which had hardly improved over the last hundred years.[112] Different hospitals had different rates for seamen. A report for 1879 reveals that the Bengal government spent more on seamen's treatment at the Medical College Hospital on account of reduction of charges for seamen. On the contrary, the Presidency General Hospital raised seamen's fees, but the diminishing number of seamen meant the amount received from them and the Port Commissioners were not sufficient to cover the expenses of treatment.[113] All subsequent reports on Calcutta's hospitals show a decrease in receipts from seamen, which shows the decline in maritime traffic in Calcutta.

As a consequence of the lack of a proper hospital for seamen near the docks in the late nineteenth century, finding a convenient place to vaccinate seamen became a problem. In 1880, when the fear of epidemics had reached crescendo, the Government of Bengal became anxious to find a suitable vaccine station for European seamen. The Health Officer of the Port of Calcutta, S.S. Lynch, identified the Mayo Hospital and the Hastings station as convenient for the Indians in the port, and the latter for European seamen from ships anchored at the southern end of Fort William. He noted that ships moored north of the Fort had no recourse to having

111 WBSA: Government of Bengal, Municipal Department, Medical Branch, Proceedings of August 1876, File no. 38A, Proceedings no. 71, Marine no. 2152, J.A. Bourdillon, Assistant Secretary to the Government of Bengal to the Secretary to the Calcutta Hospital Nurses Institution, August 1, 1876.
112 "Reconstruction of the Presidency General Hospital," *Indian Medical Gazette* 31, no. 12 (December 1896): 467.
113 A.J. Payne, *Report on the Calcutta Medical Institutions for the Year 1879* (Calcutta: Bengal Secretariat Press, 1880), 11.

their seamen vaccinated as both stations were too far.[114] He further observed that Koila Ghat, near Dalhousie Square, appeared to be the most convenient location for a public vaccine station for the crew of vessels anchored to the north of the port, between Fort point and the Hooghly Bridge.[115] The Sanitary Commissioner for Bengal, R. Lidderdale, thought that the hours from 7 to 9 am, proposed by the Health Officer of the Corporation of Calcutta for persons to attend the vaccine station will coincide with the breakfast time (8 to 9 am) at their ships and thus unsuited to European seamen. He accepted Lynch's proposal for operating a vaccine station at the Koila Ghat police station daily from 6 to 8 am for the crew of the vessels at the northern end of the port.[116] The plan was shelved due to the intervention of Assistant Surgeon Ram Chunder Mitra, Deputy Superintendent of Vaccination, who said that the two vaccinators who worked three days in the Park Street Dispensary and two days at Hastings, had only a day's (Wednesday) respite, and they could be asked to attend the Koila Ghat station on that day. He added that establishing a vaccine station at Koila Ghat would be very expensive, since there was no slum within a radius of a mile from Koila Ghat, and bringing "virus children" from far would require a carriage besides giving gratuity to the parent. It would be almost impossible to supply virus at the time proposed by the Health Officer of the Port, viz. from 6 to 8 am. If the usual time, viz. 7 to 9, did not suit the seamen, it could be altered to 9 to 11 am.[117] Apparently, doctors used variolation rather than vaccination, which is evident from the use of infected children.

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114 WBSA: Proceedings of the Lieutenant-Governor of Bengal, November 1880, Medical and Municipal Department, File no. 3B, Collection no. 2, Proceedings no. 16-24, "Measures to the taken for carrying out vaccine operations in the town of Calcutta," no. 176, Dr S.S. Lynch, Health Officer of the Port of Calcutta, to the Sanitary Commissioner for Bengal, September 17, 1880.

115 Ibid, no. 178, Dr S.S. Lynch, Health Officer of the Port of Calcutta, to the Sanitary Commissioner for Bengal, September 22, 1880.

116 Ibid, no. 1418V, R. Lidderdale, MD Sanitary Commissioner for Bengal, to the Secretary to the Government of Bengal, Medical and Municipal Department, September 24, 1880.

117 Ibid, no. 397, Surgeon-Major K. McLeod, AM, MD to the Chairman of the Corporation of the Town of Calcutta, October 25, 1880.

In addition to hospitals, jails were a place in which ill inmates needed treatment and to be protected from unhygienic conditions. At one stage, in 1883, The Presidency Jail became crowded and the system of storing the belongings of seamen inmates (clothing, bags, beds, boxes etc.) caused severe space crunch.[118] The Shipping Master was also worried that the mixing of clothes of seamen suffering from smallpox or other contagious or infectious diseases with those of others might have serious consequences.[119] The Secretary to the Board of Revenue advised him to pass a stringent rule to keep the belongings of diseased seamen separated, against which he floated the idea of fumigating the suspect clothes by jail or medical authorities.[120] The Inspector General of Jails refused to accept any more seamen for custody in Presidency Jail, and asked to accommodate them in the Shipping Master's office. The Government of Bengal assigned large storage rooms for keeping the belongings of seamen: Presidency General Hospital for ill seamen and the Shipping Office for criminal seamen.[121]

From these accounts, seamen's hospitals emerge as places of limited medical capacity with a low number of professional medical practitioners and scant funding. Seamen's bodies were subject to a clinical gaze and experimentation with medicine and hygiene, but they rarely appear as biomedical objects. In the absence of a consistent policy to build a therapeutic space, at least before the 1860s, the seamen's hospitals did not grow as a powerful state institution or site of construction of medical identities. David McLean concludes his study of naval hospitals outside Britain, drawing upon medical establishments in Malta, Port Royal, Bermuda and Lisbon, saying that these hospitals were never inspected by the Director-General and depended

118 WBSA: Government of Bengal, Medical Department, Medical Branch, Proceedings no. 28/32, May 1884, Political Department, no. 1073, A.D. Larymore, Superintendent Presidency Jail to the Shipping Master, Calcutta, July 27, 1883.
119 Ibid, no. 309, J.M. Brebmer, Port Officer and Shipping Master to C.E. Buckland, Secretary to the Board of Revenue, August 2, 1883.
120 Ibid, no. 309, J.M. Brebmer, Port Officer and Shipping Master to C.E. Buckland, Secretary to the Board of Revenue, August 20, 1883.
121 Ibid, no. 5810, W. Dunbar Blyth, Under-Secretary to the Government of Bengal to the Deputy Shipping Master, Calcutta, February 29, 1884.

on the 'organisational competence and eccentricities' of their senior surgeons. Provided with basic supplies and facilities, and unable to hire a trained and committed workforce due to lack of funding, they were often unable to provide sophisticated service. Their chief surgeons were often seen to respond to calls from local communities. Still, a large number of British seamen owed their lives to these hospitals in foreign lands.[122] The hospitals in colonial India were no different.

Conclusion

The lack of sources on seamen's hospitals in India did not allow a more comprehensive evaluation of medical innovations, the sanitary environment for treatment, and the impact of climate on the convalescence of patients. The ad-hoc nature of administration, underfunding, and limited number of medical staff indicate these hospitals might not have provided ideal nursing care in a hygienic building. The racial nature of these institutions is clear from the fact that all except three of the 244 patients in the Howrah Seamen's Hospital in 1843 were European and American seamen, which suggests the colonial medical establishment was concerned largely with the health of white seamen. A sharp difference existed between the survival rates of ill officers and seamen, presumably on account of their general health, diet, clothing and exposure to the sun. Fever and dysentery affected common seamen more than officers. It is certain that these hospitals provided surgeons with a useful space in which to gain valuable clinical experience through a systematic study of human physiology and various diseases. The details of their medical notes published in journals were reasonably accurate and started wider discussions in the medical field. Sometimes colonial surgeons failed to have an impact on metropolitan knowledge, as is evident in the case of James Anderson's discovery of

122 David McLean, *Surgeons of the Fleet: The Royal Navy and its Medics from Trafalgar to Jutland* (London and New York: I.B. Tauris, 2010), ch. 4.

an anti-scorbutic vegetable, which was widely accepted as efficient but never discussed seriously by the naval medical board in Anderson's lifetime. The extent to which the medical authorities in Britain embraced maritime therapeutic knowledge cannot be ascertained due to the fragmentary nature of sources.

The main contribution of surgeons in Britain towards tropical hygiene, as this chapter has shown, went beyond the development of medicine in and through hospitals, pathological anatomy, clinical trials and medical statistics, which were the defining characteristics of British medicine in the period under study.[123] The circular conversations over seamen's diet, and the inability of the naval authorities to implement provision of fresh vegetables despites the latter's proven nutritional value and efficacy against scurvy, did not help reduce seamen's health problems. The statements made by surgeons inadvertently put seamen's health at the centre of a debate about the British government's lack of concern for the maritime working class. As the imperative of empire-building loomed large over British seamanship, these discussions were invariably tied up with the British Empire's treatment of seamen. Critics said that oppressive living and working situations were responsible for the staggering mortality among seamen, and the government and naval authorities had turned a blind eye to seamen's welfare. Thus, naval surgeons and seamen's patrons were drawn into a political debate on public health, where their observations informed parliamentary discussions on reforming seamen's lives.

[123] Catherine Kelly, *War and the Militarization of British Army Medicine, 1793-1830* (London: Pickering & Chatto, 2011), 3.

CHAPTER 3

Christian Missionaries and Moral Regulation

On 24 February 1838, the state of British merchant seamen was discussed in a meeting held at the Town Hall, Bombay. The speakers, mostly naval officers, largely concurred that discipline in the Mercantile Marine was in decline. It made seamen demoralised, degraded, and uncompliant. One of the speakers, Sir Charles Malcolm, superintendent of the Indian Navy, said that in their current state, seamen greatly differed from the 'former character of the British sailor for orderly conduct and obedience to discipline.'[1] In the same vein, the Consul General of the United States of America for British India, Nathaniel P. Jacob, wrote to Major G.B. Malleson of the Bengal staff corps in 1866, 'the active, quiet, respectful seamen of a quarter of a century since is now rarely met with.'[2] Evidently, the behaviour of merchant seamen was a matter of concern throughout the nineteenth century. Naval seamen were supposedly more disciplined and pleasantly behaved. As Mary Conley argues, their reputation, firmly tethered as it were with Britain's imperial and naval heritage, improved in the late nineteenth century. The reprehensible 'jolly Jack Tar' of yesteryear had transformed into the patriotic and familial 'bluejacket' by the turn of the twentieth century. The shift in seamen's image to 'competing visions of naval manhood' was rooted in the changing concept of masculinity, development of the education system, and a string of naval reforms.[3] Merchant seamen were not redeemed of their problematic image until into the twentieth century.

1 "Local Intelligence: Bombay," *Parbury's Oriental Herald* 1, no. 1 (1838): 546.
2 G.B. Malleson, "The State of the Sailors in Calcutta," British Library IOR: P/437/29, Government of India, Home Department Proceedings, Marine 1866, No. 18, 20.
3 Mary A. Conley, *From Jack Tar to Union Jack: Representing Naval Manhood in the British Empire, 1870-1918* (Manchester: Manchester University Press, 2009).

The nostalgic belief in the past discipline and better behaviour of merchant seamen was misplaced since identical complaints about seamen's deteriorating conduct were made throughout the history of imperial Britain. It was almost customary for naval officers and government officials in Britain to blame the shipping industry for not looking after their labour force. Merchant seamen were under surveillance throughout the nineteenth century on account of their misdemeanour, which was widely thought to have resulted from their oppressive, even dehumanising, living and working conditions. Anxious to guard seamen from a 'wide range of predators,' from exotic diseases, unsanitary living conditions to destitution, in all port cities of the world, the British government passed several acts after the 1850s.[4] The reforms were undertaken, arguably, in response to vehement criticism of the government for not looking after maritime workers. The growing problem of vagrancy and poverty among seamen was particularly alarming. The Methodist Church, known for championing the working class, took the lead in criticising the country's callous treatment of merchant seamen.[5] Inspired by the belief in God's grace and salvation for all, the Methodists portrayed merchant seamen as victims of their circumstances and worked towards their spiritual uplift. The Church of England followed, establishing Sailor's Homes and extending moral guidance to seamen. More importantly, religious missions pursued seamen to distant shores. Services were organised on board ships, the value of temperance preached, and seamen's welfare societies were established in major port cities across the world.

The study of 'maritime missiology,' pioneered by Roald Kverndal in the 1980s, has mostly examined the origin and global spread of seamen's welfare organisations. This genre of

4 Tim Carter, *Merchant Seamen's Health 1860-1960: Medicine, Technology, Shipowners and the State in Britain* (Woodbridge: Boydell Press, 2014), 68.

5 Historians have argued that Methodist preaching of work-discipline and obedience counteracted political radicalism among the working class. They were highly successful in promoting obedience as a virtue as the common people were able to connect with them better than they did with preachers of the Established Church. E.P. Thompson, *The Making of the English Working Class* (London: Victor Gollancz, 1963).

maritime history has explored various aspects of seamen's and fishermen's missions and welfare provision, including detailed studies of Sailor's Homes, individual missionaries and organisations, the nature of evangelicalism, and humanitarian reform in Britain.[6] In these works, the relationship between religion and identity in seamen's lives has foregrounded the seaman as an object of politics and charity. Focusing on the theme of reclamation of European seamen's morality as a means of transforming them into ideal Christians and productive labourers, this literature largely overlooks how these missions served a biopolitical function by treating seamen as sanitary subjects.

This chapter situates the biological body and morality of the European seaman as terrains that non-state organisations such as Christian missions wanted to claim. It offers two arguments. First, that moral preaching by Seamen's Chaplains and healthy living and hygienic practices promoted by the Sailor's Home were not aimed at simply reforming seamen, but also governing the spaces of vagrancy, disease and epidemics that the British government struggled to do by itself. The Church and the State did not collaborate often enough to effectively redress disease and other problems of maritime life. The missionaries exerted a specific iteration of the non-state dimension of biopower, which worked separately from other technologies of power such as penal and disciplinary power. Second, that the spaces of missionary-seamen interaction enable us to understand colonial history from a new perspective. Missionary activities in the colonial context are usually analysed as examples of primarily white people intruding into non-

[6] Roald Kverndal, *Seamen's Missions: Their Origin and Early Growth* (Pasadena, CA: William Carey Library, 1986); Roald Kverndal, *The Way of the Sea: The Changing Shape of Mission in the Seafaring World* (Pasadena, CA: William Carey Library, 2008); Roald Kverndal, *George Charles Smith of Penzance: From Nelson Sailor to Mission Pioneer* (Pasadena, CA: William Carey Library, 2012); Alston Kennerley, *British Seamen's Missions and Sailors' Homes 1815-1970: Voluntary Welfare Provision for Serving Seafarers*, unpublished PhD thesis, University of Plymouth, 1989; Alston Kennerley, "Seafaring Missionary Societies and Maritime Education and Training, 1815-1914," *Paedagogica Historica* 35, sup 1 (2015): 241-57; Robert Miller, *One Firm Anchor: The Church and the Merchant Seafarer* (Cambridge: Lutterworth Press, 2012); Richard Blake, *Evangelicals in the Royal Navy 1775-1815: Blue Lights & Psalm-Singers* (Woodbridge: Boydell Press, 2008); Richard Blake, *Religion in the British Navy 1815-1879: Piety and Professionalism* (Woolbridge: Boydell Press, 2014); Stephen Friend, *Fishing for Souls: The Development and Impact of British Fishermen's Missions* (Cambridge: Lutterworth Press, 2018).

Christian life, denigrating indigenous customs, imposing foreign cultural conventions, gathering local knowledge mostly to denounce it, and building schools and other charitable institutions with the motive of ultimately converting locals, often through violence. However, the interaction with marginal Europeans suggests an alternative history of missionary work in the colonies. Here seamen were not only the victims of government apathy and a malevolent labour market, but tropical climate and an unforgiving urban space added to their agony. The latter gave missionaries more opportunities to justify the act of regulating seamen's bodies. Through a study of these activities, this chapter explores the struggle to produce an imperial self for European Seamen ordered by Christian morality.

Biopower, purity, and paternalism

The Church in nineteenth-century Britain ran hundreds of voluntary societies, hospitals and schools, supported social work and provided poverty relief. It was able to transform people's lives, and doing it in the name of God and in exchange for little remuneration from the beneficiaries gave it a moral high ground. However, in the course of providing healthcare to the ill, postulating the ideals of reproduction, or maligning certain forms of sexuality, it biologized its Christian subjects. E.P. Thompson's definition of 'moral economy' as a collective disposition in a state of limbo between being political and apolitical, deferential to traditional norms and obligations, and in dialogue with a paternalistic authority, succinctly explain the general public attitude towards Church philanthropy.[7] The knowledge of its subjects, the capital to work among them, and the possession of a spiritual rationality empowered the Church and its many denominations as biopolitical institutions. This was

[7] E.P. Thompson, "The Moral Economy of the Crowd," in *Customs in Commons* (London: Penguin, 1993), 188.

encapsulated in the speeches delivered at the British and Foreign Sailors' Society's eighth annual meeting in 1841, which stated the society's aim as to:

> …forestall and destroy those influences which operate to the ruin of our home population… seeking out the suffering sailor, at home and abroad, to place him in the hospital, to watch over him there, soothing his sorrows, administering medicine and consolation, and above all, pointing him to the great physician… through the moral purity of our seamen, as an important instrumentality, that monster, whose breath has poisoned the institutions of so many nations… shall relax his grasp…[8]

British Christian clergy had taken an interest in European seamen's wellbeing in the eighteenth century. Their main aim was to inspire seamen to drink alcohol in moderation, or stop drinking. Nineteenth-century Britain, Zygmunt Bauman argues, was obsessed with the idea of purity. Aside from celebrating moral purity, they strove to rid the society of more mundane forms of impurity such as dirt and filth. Proponents of largescale sanitation and hygiene would consider not only garbage but also 'abnormalities' such as homosexuals and criminals an impediment to an ideal environment. The effort of purification and establishing order could only be done if these unseemly elements could be removed.[9] Seamen's legendary moral turpitude had no theological legitimation. Their 'sinful' nature gave Christian missionaries a perfect context to act upon their agenda of removing 'dirt' from the society and promoting appropriate male behaviour. The Church's work represented a paternalistic attitude that spiritual reawakening was more powerful than the rule of law.[10] The conviction that they knew what was best for the allegedly uninformed and errant Christian seamen was grounded in the hierarchal relationship between the lowly working class and the superior men of God. Placing themselves above

[8] "The Eighth Anniversary Meeting," *The Sailors' Magazine* 3, no. 30 (June 1841): 182.
[9] Zygmunt Bauman, "Dream of Purity," *Theoria: A Journal of Social and Political Theory* 86 (1995): 49-60.
[10] David Roberts, *Paternalism in Early Victorian England* (London: Croom Helm, 1979).

political institutions, whom they alleged were not looking after seamen, the churchmen sought to establish themselves as the highest moral authority of the imperial nation.

The concern for seamen soared after the Napoleonic Wars. The Missionaries designated as Seamen's Chaplains preached the virtues of temperance and righteousness to them. Several societies were set up to protect them from crimps and disease. They generated much enthusiasm by seeking to involve common people in religious activities and engaging with the state. The clergy's acknowledgement of European seamen's contribution to empire-building made a favourable impression upon the British imperial authorities. Although they were critical of the government, the clergy advocated for a stronger and superior British Empire. Their plan for helping European seamen out of their misery found supporters in the naval ranks. Sometimes the Admiralty aligned itself to religious charity by sanctioning vessels to be used as floating chapels and seamen's libraries, and supporting daily preaching, prayers and tract distribution on ships.[11]

In 1821, one anonymous naval officer published a report that was critical of the prevalence of 'certain immoral practices' among naval seamen. The report opened with a scathing remark on the practice of bringing prostitutes, sometimes several hundred, on board ships upon their arrival in ports. A naval officer, aged 28, who was interviewed for the report, said that lieutenants and senior midshipmen took prostitutes to their mess-rooms to dine alongside young midshipmen. Seamen picked prostitutes from boats hovering round ships when they entered a port. The 'shocking, disgraceful transactions' that followed in the lower deck could only have made the ship 'a hell afloat.'[12] Another officer said that assistant surgeons were often asked to examine prostitutes for venereal diseases, which they sometimes refused

[11] Blake, *Religion in the British Navy, 1815-1879*.
[12] *Statement Respecting the Prevalence of Certain Immoral Practices in His Majesty's Navy* (London: Ellerton and Henderson, 1821), 2-3.

to do.[13] It was also reported that prostitutes were sometimes hired for the entire duration of the journey. Some of them even died on board ships from venereal disease.[14]

The author contended that such wanton indiscipline should no longer be tolerated even if it had not interfered with naval operations. He wanted strict enforcement of the rules contained in the *Book of Regulation for the Naval Service* (1808) that prohibited presence of any woman on board a sailing ship, permitted seamen's wives to visit while the ship was at port, and forbade use of foul language, drunkenness, and any 'immoral' activity. The first among his five justifications for doing so was the necessity of following Christian teachings about discretionary sexual intercourse. He quoted the Christian theologian William Paley's characterisation of the act of sex as a disease that may affect even future generations of the perpetrator.[15] Secondly, he refuted the argument that allowing promiscuity was a small price to pay for seamen's loyalty and continuous service. In his opinion, the authorities should appeal to seamen's conscience rather than immorality for getting them to work. Thirdly, countering the apprehension that severe disciplining could result in desertion, he said policymakers should not harbour such low opinion of seamen as slaves to temptation. Fourthly, he thought that providing seamen with prostitutes on board ships to stop them from the 'greater evil' on shore was absurd, as nothing could stop a person of vice from going on committing sins. Fifthly, making women available to prevent homosexuality on board ships was for him choosing between 'a certain and a very uncertain evil.'[16] The report shows a great impact of the Christian emphasis on moral purity on the author. He seems convinced that the social body of the seamen was sick. It needed a massive legal reform-led moral epiphany to keep running.

[13] Ibid, 4.
[14] Ibid, 10.
[15] Ibid, 18-19.
[16] Ibid, 30.

In early to mid-nineteenth-century Britain, moral reform was a significant part of sanitary reform. The acceptable theories of disease espoused the need for a holistic improvement in physical and moral health. Disease was not conceived as a result of a 'discrete external stimulus,' but as a manifestation of the body's fight to recover the normal state endangered by personal habits.[17] The increasing alignment of moral character to the foundation of national and imperial health provided Christian missionaries an ideal justification to evangelise their ideas of moral purity. In stories told during sermons, the Bible often became a medicine to help seamen recuperate from illness. One such tale, recounted by a clergyman in Calcutta, related to a young sailor whose mother gave him a Bible on the eve of his voyage. The book lay forgotten at the bottom of his chest till he fell ill and started reading to overcome his depression.[18] The Gospel thus became a panacea for mental wellbeing in missionary lore. In addition to sermons, paternalistic ideas were put into action through welfare institutions across the British Empire.

The oldest existing maritime charity in the world was founded by a group of Protestant clerics in London. On 18 March 1818, George Charles 'Bosun' Smith, a preacher and former sailor, organised a meeting at the City of London Tavern in Bishopgate to discuss the possible ways of helping distressed sailors. This meeting led to the formation of the Port of London Society. Their activities with establishing a floating chapel, called the Ark, in London, which was followed by donation of books to seamen and sending missionaries to various post cities on permanent preaching assignments. In a meeting on 3 July 1833, the organisation was merged with the National Interdenominational Seamen's Mission Society, and its name was changed to the British and Foreign Sailors' Society. Their monthly magazine, the *Pilot*, carried

17 Charles Rosenberg, "Florence Nightingale on Contagion: The Hospital as Moral Universe," in *Explaining Epidemics and Other Studies in the History of Medicine* (New York: Cambridge University Press, 1992), 94.
18 "Anniversary of the Calcutta Seamen's Friend Society, Calcutta, Dec. 21, 1839," *The Sailors' Magazine* 12, no. 12 (August 1840): 369.

instructions for sailors about healthy living and high thinking. The first meeting of the society, held on 29 April 1834 in London, laid down as one of its objectives the establishment of 'respectable' boarding houses for sailors to live comfortably during times of unemployment or shore leave.[19] These houses not only offered cheap and safe food and accommodation, they were spaces where the bodies and minds of seamen could be regulated and reformed. In 1834, the Destitute Sailors' Asylum admitted an average 800 seamen to its premises every year.[20] The number increased every year, and similar institutions were built across the world. The next section will outline the problems of European seamen that had galvanised religious charity.

Moral problems and the need for salvation

Christian missionaries were convinced that European seamen were a danger unto themselves, and the British maritime administration were doing little to help them. For example, the Vagrancy Act of 1824 criminalised begging among seamen and granted the police extraordinary powers to apprehend them under suspicion of criminal intent.[21] The Act enabled the police to sanitise regular public spaces by regulating allowing the rogues and vagabonds among seamen, but did not help the seamen lead a better life. Many of the sanitary reforms of the naval and civic authorities in port cities came after the mid-nineteenth century. The regulation of diet, provision of clean habitat, and eradication of sources of miasma and insanitary living conditions were products of this period.[22] Measures like the Contagious Diseases Act of 1864 were taken to prevent venereal diseases. Recently arrived seamen were monitored for infectious diseases such as yellow fever and plague. Infected seamen were either

[19] "Historical Notices of Efforts to Evangelize British and Foreign Sailors," *The Christian's Penny Magazine* 101 (May 10, 1834): 146.
[20] Ibid, 106 (June 14, 1834): 187.
[21] David Churchill, *Crime Control and Everyday Life in the Victorian City: The Police and the Public* (Oxford: Oxford University Press, 2018).
[22] Carter, *Merchant Seamen's Health*, 70.

shifted to naval hospitals or quarantined. Tim Carter argues that the Marine Department's intervention in medical matters was inadequate for three reasons: its lack of scientific expertise, the reluctance of ship owners to curtail their profit and provide better welfare to seamen, and seamen's failure to articulate their needs.[23] So, we have a picture where the government did not do much in the first half of the nineteenth century, and their actions in the second half were not too effective.

More importantly, rectifying the conduct of seamen themselves was perceived to be a bigger challenge. Seamen led a short and dangerous life that presumably inured them to morality. Nicholas Rodger's work on the Georgian navy indicates that nearly 80% of the ordinary seamen were under the age of 25, most of them between 16 and 20, while 75% of the experienced seamen were under 30, mostly between the ages 21 and 25.[24] Although the average maritime career tended to be short, people with lifelong affinity to ships and the sea were not in short supply. These men were usually unmarried and without much familial attachment. The maritime life and profile of seamen on short distance routes was remarkably different from those who travelled long routes. Valerie Barton's research on North American merchant seamen in the late nineteenth century, which I use in the absence of a comparable work on European seamen, shows that the coastal or short distance trading vessels were manned mainly by older people with family persons, whereas younger, unmarried seamen went to long voyages. She estimates that 46% of the American merchant seamen in 1891 were married, divorced or widowed, a significantly higher proportion compared to the 27% estimated by Rodger in the context of Britain in the eighteenth century.[25] It can be safely concluded that family persons were a minority among seamen in the nineteenth century. The lack of family

[23] Ibid, 84.
[24] Nicholas Rodger, *The Wooden World: An Anatomy of the Georgian Navy* (London: Collins, 1986), 360-61.
[25] Valerie Burton, "The Myth of Bachelor Jack: Masculinity, Patriarchy and Seafaring Labour," in *Jack Tar in History: Essays in the History of Maritime Life and Labour*, eds. Colin Howell and Richard Twomey (Fredericton, NB: Acadiensis Press, 1991), 179-98.

bonding, apart from the harsh life of labour, was suspected to have made seamen promiscuous and alcoholic. Seamen going wild on shore leave may have been a stereotype. As Robert Lee argues, seamen's time ashore was granted at the captain's discretion, which was considerably reduced in the age of steam as steamships took less time than sail ships to load cargo and also made more frequent stops.[26] It can be said that Lee thinks of an ideal situation, which would be shattered every time a seaman fell ill on shore leave or deserted ship. Stereotyped or not, seamen had a poor reputation that spurred Christian missionaries to work.

European seamen who arrived in India in the eighteenth and early nineteenth centuries were known to be potential troublemakers. They had a tendency of deserting maritime duties and settling in India with a different occupation. The East India Company was particularly apprehensive of those seamen who committed crimes, behaved in a disorderly manner, and worked as mercenaries of Indian potentates. In order to protect their commercial monopoly over local resources, they had to keep their men loyal, and least of all strengthen the ranks of local warlords. They restricted the entry of Europeans into India. The correspondences of the EIC's Court of Directors and the Government of Bengal in 1823 reveal their strong objection to granting residence permits to Europeans who did not work for them and insistence on extraditing unemployed people. Before 1833, many European immigrants were deported if caught working as servants, clerks and shop assistants, or accused of stealing.[27] The EIC's control over immigration rules gradually declined and ceased altogether after India was annexed to the British Empire in 1858. The new colonial government allowed a large number of poor Europeans to remain in India as potential recruits for the armed forces in times of military crisis. European employers also found it convenient to draft discharged soldiers and

[26] Robert Lee, "The Seafarers' Urban World: A Critical Review," *International Journal of Maritime History* 25, no. 1 (2013): 23-64.
[27] David Arnold, "White Colonization and Labour in Nineteenth-Century India," *The Journal of Imperial and Commonwealth History* 11, no. 2 (1983): 133-58.

seamen for jobs that involved low level of skill but were too important to be left to Indians, such as operating the cashbox in shops. Unwilling to pay the passage of candidates from England, they recruited persons who were already in India, acclimatised to the country and did not require passage fares. Found often in a state of vagrancy and willing to settle for low emoluments, seamen were easy hires. They encountered three major problems in port cities.

First, once seamen reached an Indian port and ventured on shore, they were approached by people recommending the best places to eat, drink, stay, and liaise with local prostitutes. These people were known by the name crimp, a ubiquitous feature of any port in the world, who were defined as recruiters in the maritime labour market.[28] Crimps of various nationalities worked in Calcutta, offering two related services. Firstly, they guided seamen to dens of drinking and entertainment. This was mostly done by Indian boatmen, colloquially known as *dinghywallahs*, who were hired by the commanders of merchant ships to run errands and ferry seamen to the shore.[29] Their ability to speak broken English, combining words learnt from seamen without any real order, containing mainly swear words, endeared them to the ship's crew.

Recounting his experience in the 1820s, Baptist missionary John Statham wrote that boatmen were "one of the many harpies which pounce upon [the sailor]."[30] They offered to be seamen's guide and interpreter when the latter went ashore, dressed in a "white jacket and

[28] In Conrad Dixon and Sarah Palmer's analysis of the relationship of seamen with boarding housekeepers and crimps, the latter has been positioned as an element in the labour market rather than the malicious beings as contemporary records portrayed them. Dixon, "The Rise and Fall of the Crimp, 1840-1914," in *British Shipping and Seamen, 1630-1960: Some Studies*, ed. Stephen Fisher (Exeter: University of Exeter Press, 1984), 49-67; Palmer, "Seamen Ashore in Late Nineteenth Century London: Protection from the Crimps," in *Seamen in Society*, ed. Paul Adam (Bucharest: International Commission on Maritime History, 1980), 55-67. Alston Kennerley's writings about Sailors' Homes and Seamen's Missions movements have examined how the British society, especially the Christian Church, sought to protect seamen from crimps. Kennerley, "British Seamen's Missions in the Nineteenth Century," in *The North Sea: Twelve Essays on Social History of Maritime Labour*, eds. Lewis R. Fischer et.al. (Stavanger: Stavanger Maritime Museum, 1992), 79-98.

[29] Major Malleson singled this category of crimps as a phenomenon found only in Calcutta. These boatmen were allowed to board ships and sell liquor and 'unwholesome' food items. The Preventive Officer was instructed to overlook these bumboats. Malleson, "The State of the Sailors in Calcutta," 11.

[30] John Statham, *India Recollections* (London: Samuel Bagster, 1832), 10.

trowsers, with new straw hat, tied round with a blue ribbon."[31] They ushered seamen to waiting palanquins, taking a commission from the bearers, and took them to grog-shops, usually in the Old China Bazaar. The next morning, the seamen would find himself penniless and miserable, possibly lying on a sidewalk. They would persuade or threaten a boatman to take them to their ships, and spend the next week sulking about the whole incident. In other reports, Indian crimps were said to have been 'victimising,' 'inveigling,' and 'seducing' seamen who intended to return to their ships after spending days on shore. They persuaded seamen to desert ships with the lure of more wage or a new job in country or coastal trade. While waiting for the next job, seamen indulged in 'vices' and were "totally destroyed by the dissipations" – becoming very different from the person who had begun the journey in full "bloom and vigour of health."[32] As one ship captain was quoted saying in the *Sailors' Magazine*, 'thus is the most noble and most generous of Britain's sons duped, before he sets his foot ashore…'[33]

Crimps were reported to be present throughout the seamen's quarters in London and Liverpool.[34] They took seamen to boarding houses, tap-rooms of public houses, long rooms of gin-palaces, and brothels. An anonymous writer to the *Sailors' Magazine* blamed sailors for landing themselves in traps they were well-aware of, and ship-owners and captains for insensitively driving sailors towards destitution.[35] Crimps persuaded seamen to stay at specific lodgings, buy articles from shops of their choice, and drink at pubs that gave them commissions. The propensity to relax in the port city after too much hard work and lack of recreation on board vessels led to drinking binges. An inebriated sailor could be easily persuaded to turn to crime and a 'libertine' life. The writer refers to 'foes' who drugged the

[31] Ibid, 10.
[32] "Miscellanious Notices," *Calcutta Review* 9, no. 18 (January-June 1848): xlv.
[33] "The Crimping System- No.1", *The Sailors' Magazine* 17, no. 2 (October 1844): 116-19.
[34] Michael Macilwee, *The Liverpool Underworld: Crime in the City, 1750-1900* (Liverpool: Liverpool University Press, 2011).
[35] *The Sailors' Magazine* (January 1845): 139-41.

drinks of seamen who risked becoming addicted, 'enslaved' to the 'virile' poison. By the time the sailor had recovered from his drug-induced reverie, these crimps would have disappeared with his belongings – clothes and money. Subsequently, unable to afford meals and accommodation, the sailor would have no choice but to depend on the same or another crimp for loan. The *Friend of India* wrote that the condition of seamen in Calcutta was no different from those in Liverpool, Glasgow, Hull or Plymouth, who indulged in the same recklessness and vice.[36] However, compared to crimps in England, who apparently tempted sailors to 'brilliant dancing rooms, rich in gas light, and society rendered fascinating by pink ribbons, red paint, and such music as is permitted to a harp and two fiddles', the Bengali crimp did disservice to seamen by offering him a life in the 'squalor' and 'repulsiveness' of the dens of Calcutta, which no self-respecting person would visit.

Crimps had a second function as employment agents. They carried around 'able seamen wanted' placards. Their clients were, on the one hand, seamen who had lost all their belonging – either stolen or spent – during nights of revelry on shore leave, or deserters, and, on the other hand, ship captains who needed to replace dead or deserted crew members with fresh hands. Crimps lent money to destitute seamen for exorbitantly priced accommodation and clothes. They took commission from unscrupulous ship-owners for recommending these seamen as cheap labour at short notice. A 'drugged,' 'stupefied,' distressed sailor was in no position to bargain for proper wage.[37] Moreover, they had to repay the crimp's loan with a high interest. A batch of unemployed seamen were always found in Calcutta and Bombay, who desperately filled in for deceased or debilitated seamen for a meagre compensation, much to the benefit of crimps. In missionary accounts, these seamen paid the price for believing these 'cunning and villainy' 'native inhabitants' to be 'simple and ignorant.'[38] It should be noted that unlike what

[36] *The Friend of India*, August 30, 1866.
[37] "The Crimping System in London," *The Sailors' Magazine* 17, no. 5 (January 1845): 139-41.
[38] "Sailors' Home Society," *The Calcutta Monthly Journal* 4 (February 1838): 98.

Christian missionaries would have people believe, not all crimps were Indians. In fact, English and American tavern owners were could be better crimps as European seamen would have found it easier to talk to white people who could speak their language. One of them, Bennet Braham, while testifying for a ship captain at the Supreme Court in 1824, revealed that he owned a tavern for which he paid Rs 150 a month as tax, and he had been a crimp for 6 years. He boasted that he shipped more seamen than all other tavern keepers put together.[39] His unabashed statement in a court shows that he considered himself to be a labour supplier rather than a criminal, and the moral implications of crimping was mainly a missionary lore.

Second, many of the European seamen who deserted ships turned to a life in organised or petty crime. In 1788, The Governor-General of India received several complaints of disorderly behaviour by Portuguese and other European origin seamen in Calcutta. On 23 April 1789, Marine paymaster J. Price wrote to E. Hay, Secretary to the Government at Fort William, 'money paid into [seamen's] own hands serve[d] only to make them more troublesome, get drunk and lay about the streets, and ultimately die in the hospital…'[40] Hay asked the captains and masters of ships anchored in Calcutta to ensure their crew would not come on shore before seven in the morning and leave by five in the afternoon.[41] He specifically targeted non-white seamen, despite the promotion about seamen across racial groups, ordering arrest of any 'Portuguese, Coffrees, Manilla or Macoa men, or Malays' sailor found in the city outside these hours. Yet, the reports of seamen's crimes almost invariably involved European seamen. Two Europeans who assaulted a gentleman during his evening walk on a Sunday in 1790 appeared to be sailors from the way they dressed.[42] In 1794, a gang of nine or ten European seamen

[39] *The Bengal Hurkaru* (30 January 30, 1824), 203.
[40] Government of India. Fort William Marine Paymaster's Office. Letter from Mr. J. Price, Marine Paymaster, to Mr. E. Hay, Secretary, suggesting a plan for maintaining and utilising the services of vagrant seamen. Home: Public; P.P. 2789-2794, O.C., 24 April., No. 8; 23 April 1789.
[41] *Selections from Calcutta Gazettes*, *Vol I*, ed. W.S. Seton-Karr (Calcutta: O.T. Cutter and Military Orphan Press, 1864), 242.
[42] *Calcutta Gazette*, September 30, 1790, *Selections from Calcutta Gazettes*, *Vol II*, ed. W.S. Seton-Karr (Calcutta: O.T. Cutter and Military Orphan Press, 1865), 274.

attacked a band of sepoys and looted the treasure they were escorting. In an attempt to protect national prestige, a correspondent emphatically mentioned that none of the apprehended seamen were 'English.'[43] However, in 1857, after a fight among some Highlanders and sailors in a liquor shop opposite a police station, the reporter had to express his dismay to have found that it was a group of English men causing such commotion and tarnishing Britain's reputation.[44]

Some European seamen formed multinational gangs that operated in the area between the 'opium dens and whore houses' of Chitpur in the 'black town' and the taverns in Lal Bazar bordering the 'white town.'[45] Many criminals arrested from this area were identified as British soldiers posted in the Fort William, and English, French, Italian, Spanish and Portuguese seamen deserters.[46] In 1870, an American sailor named John Anderson was accused of breaking into the famous jewellery shop of Cooke and Kelvey in Old Court House Street. He allegedly entered the shop 'through the floor of the building, to which the defendant (Anderson) had found access by passing through the main drain running past the front...'[47]

European seamen in Bombay were similarly notorious for their criminal tendency. An army register from 1801 noted that seamen were known to commit 'outrages of the most serious nature.'[48] Four sailors named Wilson, Apostle, Nicholas and Peters were sentenced to death in 1867 for killing an Indian.[49] The Annual Reports of the Bombay Presidency throughout the

[43] *Calcutta Gazette*, November 20, 1794, *Selections from Calcutta Gazettes*, *Vol II*, ed. W.S. Seton-Karr (Calcutta: O.T. Cutter and Military Orphan Press, 1865), 397.
[44] *Bengal Hurkaru*, December 1, 1857, 238.
[45] Major H. Hobbs, *John Barleycorn Bahadur: Old Time Taverns in India* (Calcutta: Thacker, Spinck & Co, 1943), 100.
[46] Sumanta Banerjee, "City of Dreadful Night': Crime and Punishment in Colonial Calcutta," *Economic and Political Weekly* 38, no. 21 (2003): 2048.
[47] *Report of the Police of the Town of Calcutta and its Suburbs, 1870* by Stuart Hogg, Commissioner of Police, Calcutta. Home Department file: Police B, July 15, 1871, quoted in Ibid, 2049.
[48] Edward Moor, *Discipline and Expenditure of the Bombay Army* (Bombay: Courier and Gazette Presses, 1801), page nos. not printed.
[49] Jordanna Bailkin, "The Boot and the Spleen: When Was Murder Possible in British India?" *Comparative Studies in Society and History* 48, no. 2 (2006): 464.

nineteenth century contained references to European seamen brought to court for alleged misdemeanour including theft, assault, desertion, and refusal of duty. Their number was usually so high that the Government ordered entering seamen under a separate heading in the report.[50] European seamen were also known for visiting prostitutes, and their scrimmaging over German and Italian prostitutes working openly on the streets led to frequent complaints from local residents.[51] Such activities diminished whatever public sympathy seamen might have collected owing to their occupational hardship and uncertain life. The Health Officer of Madras reported in 1869 that much of the admittance of European and East Indian prostitutes to lock hospitals coincided with the arrival of ships with European crews, which made him believe that seamen were largely responsible for spreading venereal diseases among local women. Considering the provisions of the 1867 Merchant Shipping Act inadequate to limit the contact between seamen and prostitutes, he wanted ship masters to guarantee that seamen with venereal disease would not be permitted to go on shore.[52] Violence and immorality by members of the ruling elite meant failing to rise above 'savage' Indians. greatly troubled Christian missionaries by shattering the ideal of British/white national and racial supremacy.[53]

Third, European seamen found a way to increase their earnings by deserting ships when they reached Indian ports. In the early nineteenth century, it was customary for ship owners to pay the wage of one or two months to the ship's crew once the journey began and the rest at the completion of return journey. Desertion created a shortage of labour that ship owners were desperate to fill for loading and unloading the cargo and the homeward journey. As ship captains searched for new recruits for the voyage home to replace those who deserted, died

50 *General Report on the Administration of the Bombay Presidency for the Year 1872-73* (Bombay: Government Central Press, 1874), 202.
51 Mridula Ramanna, *Western Medicine and Public Health in Colonial Bombay, 1845-1895* (Hyderabad: Orient Longman, 2002), 176.
52 *Report of the Sanitary Commissioner for Madras 1869* (Madras: Fort St. George Gazette Press, 1870), 101.
53 Esme Cleall, *Missionary Discourses of Difference: Negotiating Otherness in the British Empire, 1840-1900* (Basingstoke: Palgrave Macmillan, 2012), 145.

during the voyage, or were hospitalised, deserters from other ships came forward asking for more than regular wage. Captains had to agree most of the time to be able to complete the journey. The lure of more wage set in motion a system of desertion whereby seamen would jump ship and would be substituted by previous deserters.[54] The Scottish-born Australian author William Walker (1838-1908), who wrote letters to newspaper editors in Bombay under the pseudonym Tom Cringle, said that merchant seamen deliberately defied orders to be discharged and join some other ship.[55] Punishments hardly helped to curb desertion as deserters were happy to leave their ships with no money and only one set or a handful of clothes on the pretext of having them washed on shore. They relied upon crimps for board and lodging near the port till their ships left the harbour. The Sailors' Homes were supposed to redress these problems by putting seamen on the right path.

Establishment of the Sailors' Home

Christian missions for seamen grew out of their obligation to communicate the gospel. Missionaries understood that use of rhetorical devices alone will not help them bend seamen to the will of God, so their recourse was to offer tangible benefits. Therefore, in addition to lectures and tract distribution, Sailors' Homes were built in major port cities across the world. These establishments were 'surrogate homes' that recreated an amiable social structure usually absent from seamen everyday life.[56] The initiative to build one in Calcutta came from Rev. William Ward, a Baptist missionary from Serampore. He had attended the anniversary of the Seamen's Friend Society at the City of London Tavern in 1821 and preached in Bengali at the

[54] "Miscellanious Notices," *Calcutta Review* 9, no. 18 (January-June 1848): xliv.
[55] William Walker, "Tom Cringle, Bombay, 5th October 1857", in *Tom Cringle's Letters on Practical Subjects, Suggested by Experiences in Bombay* (Bombay: Education Society's Press, 1863), 23.
[56] Darcy Ingram, "Saving the Union's Jack: The Montreal Sailors' Institute and the Homeless Sailor, 1862-98," in *Negotiating Identities in 19th- and 20th-Century Montreal,* eds. Bettina Bradbury and Tamara Myers (Vancouver and Toronto: UBC Press, 2005), 49-76.

Mariners' Church to a gathering of lascars.[57] On his return, he made a futile attempt to start Sabbath services for European seamen at the Bow Bazar Chapel in the autumn of 1821. Undeterred by the failure, he established the Calcutta Bethel Society at a public meeting held at the Union Chapel on 4 June 1822. After initially struggling to convince ship captains to send their crew to the chapel for prayer, the committee purchased and repurposed a boat as a floating chapel for 150 people. Named Calcutta Ark in direct tribute to the London vessel, it was inaugurated on 27 July 1822 with a sermon by Dr William Carey.[58] The boat was anchored opposite the Metcalfe Testimonial on Strand Road.

The Society next set up a Bethel Lodging House for European seamen in a bid to keep them away from the taverns filled with risqué banter and pernicious liquor. It was soon closed due to the lack of a 'faithful' superintendent.[59] Early reports of these institutions indicated a general lack of public interest, which did not deter the missionaries. The Calcutta Seamen's Friend Society came up in 1827. Its objective was to preach the gospel, distribute religious tracts and books to seamen, and attend to their spiritual needs. The Society for the Propagation of the Gospel in Foreign Parts, the overseas arm of the Church of England, sponsored the Anglican mariners' church that was opened on 16 May 1830.[60] Missionaries soon realised the need to open a subsidiary institution that would offer more tangible benefit and, hence, attract seamen to the Church.

In Bombay, the Bethel Union established an Anglican floating chapel towards the end of 1824, under the superintendence of a senior chaplain. The Governor of Bombay permitted them to use the frigate *Hastings* as the chapel. The Bishop of Bombay set up the Bombay

57 "Heart Cheering News from Calcutta, East Indies," *The Mariners' Church Gospel Temperance Soldiers' and Sailors' Magazine* 25, no. 10 (October 1845): 440.
58 Kverndal, *Seamen's Missions*, 246.
59 "Calcutta Bethel Society," *The Friend of India* 7 (Serampore: Mission Press, 1824): 349.
60 Kverndal, *Seamen's Missions*, 291.

Seamen's Friend Association in the late 1820s.[61] In its annual meeting of 1832, members were apparently elated to report the increasing presence of officers and sailors from the Indian Navy as well as merchant ships at the Floating Church.[62] The society assigned 'a European' to board every arriving ship and offer to ferry the seamen for Sabbath prayer free of cost. Although rarely taken up on his offer, the society's other activities such as providing free books to seamen met with success. They sold Bibles to seamen, furnished 21 out of the 29 British and American ships to have visited Bombay in the preceding year with lending libraries, and distributed printed addresses to boatswain or petty officers. The response to libraries was encouraging enough for the members to believe that wide circulation of the 'Word of Eternal Life' would compensate for Sabbath attendance figures falling below their expectation.

These measures led to the establishment of Sailors' Homes in Calcutta, Bombay and Madras. The Secretary to the Calcutta Seamen's Friend Society, Rev. Thomas Boaz, convened a meeting on 1 February 1837 at the Union Chapel House in Central Calcutta to discuss the feasibility of establishing a Sailors' Home.[63] Three resolutions were unanimously adopted at the meeting: there was need for an institution to protect seamen from social evils; the institution must be managed judiciously and efficiently; and a committee would be appointed to execute the motion. Rev. Boaz chaired a subcommittee that came up with a prospectus for a Sailors' Home. It was circulated among European merchants and civilians in the city in the hope of raising fund and government aid.[64] The text said that seamen, easy preys of unscrupulous men, were in greater trouble in the colonies in the absence of a nurturing society to protect them. The physical weakness and moral guilt resulting from 'vices' destroyed their health and character, thus affecting maritime order and labour. If left unchecked, their misery would soon

[61] Ibid, 247.
[62] "Report of the Committee of the Bombay Seaman's Friend Association, for the Year 1832," *The Calcutta Christian Observer* 2 (August 1833): 401.
[63] "The Sailors' Home," *The Calcutta Christian Observer* 6, no. 58 (1837): 132.
[64] Ibid, 133.

escalate and shatter 'domestic happiness at home' i.e. the British metropole.[65] The solution would be the Sailors' Home.

According to the prospectus, the Sailors' Home would provide European seamen with corporeal and moral needs – 'comfortable lodging, plain food, innocent recreation, and religious guidance'. It would have two branches: the boarding – a respectable and economical boarding house for the paying captains and sailors; and the destitute – to shelter 'shipwrecked, convalescent, or otherwise distressed' seamen till they could be shipped off to their homes. The Calcutta Seamen's Friend Society would maintain a register of crew requirement of anchored ships, and advise boarders about job opportunity. They would keep seamen's money for safekeeping during their stay to prevent them from spending on 'trivial pursuits.' A library would be established and boarders provided with pen and paper for writing letters. The Committee were to decide on other means of 'temperate enjoyment' suitable for seamen. Other recommendations included rewarding seamen for good behaviour at the Sailors' Home and onboard ships, lending libraries for ships visiting Calcutta, recruiting a visiting and a permanently resident superintendent, and appointing missionaries to visit ships for publicising the Society's actions. The visiting superintendent would preside over daily religious service. The Society sought to enforce temperance and 'ship-discipline' in regard to food, drink, use of liquor, time and conduct. Finally, the committee to manage the Home would be drawn from the pool of subscribers, and all captains and officers staying there could be ex-officio members of committee if they paid the subscription fee.[66]

The Committee estimated a monthly expense of 600 rupees for sheltering 40 men. The expenses for the building, the furniture and running costs would be covered by the rent from the boarding section, and donations from magistrates, merchants, shipping agents and captains

[65] Ibid.
[66] Ibid, 134.

connected to the port of Calcutta. Rev. Boaz presented the idea of the Sailors' Home in a public meeting at Town Hall on 18 March 1837. In the meeting, one Mr Strettell delivered a speech about the threats of licenced punch-houses to unsuspecting seamen. The meeting was attended by many affluent merchants who promised to donate about Rs 4000 to the cause. The committee also discussed the feasibility of improving the condition of Lascars.[67] This remained perhaps the only mention of helping non-white seamen, as every other reports from the period of this study seems to define the problems of European seamen in racialised terms of Indian crimps being particularly dangerous and local food and drink being too harmful.

The committee opened a small house in Jan Bazar in June 1837 as a short-term residence for around 30 destitute seamen. That year, a total of 981 British and American vessels with 14,417 seamen, besides Lascars, arrived in the city. Among the seamen given shelter on the first month were the crew of the ship *Rebecca* that was wrecked on the Coromandel Coast. Most of the boarders were helped to find ships quickly.[68] The Sailor's Home came up later in the year at the site of the Harmonic Tavern in Lalbazar, a famous night haunt in the late eighteenth century. The programme for the inauguration ceremony noted that the establishment was intended to 'suppress crimping and all the evils arising from it to which owners, commanders, officers and crews are subject in the port of Calcutta.'[69] British people coming to Calcutta usually had letters of introduction that let them to stay at certain places. Soldiers stayed in barracks, merchants lived with their correspondents, and ship captains went to their friends' houses or rented accommodation. Sailors and junior officers in merchant ships headed for taverns where they spent a lot of money for enjoyment. The Sailors' Home sheltered these

[67] "Calcutta Sailors' Home," *The Calcutta Christian Observer* 6, no. 59 (April 1837): 208.
[68] "Sailors' Home," *The Calcutta Christian Observer* 6, no. 61 (June 1837): 319.
[69] "Calcutta Sailors' Home," *Madras Missionary Register* 4, no. 1 (January 1838): 122-23.

seamen, with separate accommodation provided for quarter-deck officers and other officers.[70] The house contained a library and reading room.[71]

The opening of the Calcutta Sailors' Home set in motion a building spree that saw the establishment of similar institutions in Bombay, Madras and Penang in the same year.[72] The second quarterly report of the Madras Sailors' Home registered the institution's expectation of being able to raise enough public donation to supplement the cost of rent, servants' wages, light etc. With financial assistance from the Temperance Society of Madras, the institution seemed to have made a large profit that would help provide excellent service to seamen.[73] The first annual report in 1838 showed that the Sailors' Home sheltered 554 seamen and 266 soldiers, all of whom appreciated the hospitality. The Master Attendant would send a circular to incoming vessels informing them about the institution. He would also liaise with departing ships about potential recruits from the residents. Many ship captains gave financial assistance. The monthly expenses, estimated at 154 rupees, were met donated money and the profit from the sale of coffee in the 'temperance rooms.' The charges of food and accommodation were 1 rupee 2 annas for upper rooms and 12 annas for lower rooms.[74] The prices were fairly modest in comparison with the going rate in the city. The Sailor's Home was shifted to Capt. Birch's spacious house in Lal Bazar in 1842.[75]

The Calcutta Christian Observer wrote that the Calcutta Seamen's Friend Society should strive harder to abolish the crimping system. It argued that a comparison between the numbers of sailors provided jobs by the Sailors' Home and crimps, or sailors finding their way

[70] Barrett, *Calcutta: Strange Memoirs*, 391-93.
[71] *The Sailor's Magazine* 10, no. 8 (1838): 362.
[72] It also inspired a group of preachers to convene a meeting at the 'American hong' on 3 January 1838 that led to the establishment of the Seamen's Friend Association in China. "Seamen's Friend Association," *The Chinese Repository* 7, no. 9 (January 1839): 477-78.
[73] "The Madras Home", *The Times of India*, November 14, 1838, 26.
[74] "Madras Temperance Society and Sailors' Home", *The Times of India*, January 16, 1839, 35.
[75] *The Bengal Hurkaru*, December 10, 1842, 1.

to the Home and to crimps, would illustrate the success of sailors' welfare measures. It suggested the managers of the Home to seek police cooperation to dispose of crimps, ask shipping lines to give jobs only to seamen sent by them, and employ a number of agents for visiting ships on their arrival and shepherding sailors to the Home.[76]

The first Sailor's Home in Bombay came up in June 1837, at a distance of about 100 yards apart from the Esplanade on the Girgaum Road. It was supported by voluntary contributions, and funds from the government and the chief magistrate of police. The Bishop of Bombay became the first president of the institution, while the organising committee consisted of several civilians in addition to clergymen.[77] Inmates were reportedly satisfied with the comfort and meals provided at the house. A total of 887 people stayed there between 1 July 1837 and 31 October 1841, out of whom 223 were paid for by the government, 253 by merchants, 32 by the District Benevolent Society and individuals, 37 by the institution itself. There were also 343 voluntary boarders. The highest number of inmates at any given time was 79 and the lowest was 3, with an average daily number of 12. Meals, charged separately, cost 4 annas for breakfast, 6 annas for dinner, 4 annas for supper, and the lowest market prices applied for wine and beer.[78] Overall, the institution seemed to serve the philanthropic principle of helping the needy.

The *First Half Yearly Report* of the Calcutta Sailors' Home emphasised the need to counter 'drunkenness, plunder, prostitution, violence and quarrels.' To this end, the Sailor's Home authorities aided the destitute seamen with subsistence and clothes, safeguarded deposits of wages, helped them get jobs in departing ships, encouraged sobriety and good behaviour, and preached the values of Christianity. Apparently, the residents were full of praise for the

[76] *The Calcutta Christian Observer* (September 1841): 590-91.
[77] *The Bombay Calendar and Almanac for 1842*, Part III (Bombay: Courier Press, 1842), 38.
[78] Ibid, 39.

services. Appended to the report were two letters of gratitude to the Secretary from the crews of the *Abberton* and *Sesostris* and one from a destitute sailor. In the first six months, the Home admitted 303 officers and seamen, of whom 264 were provided with berths. There were two deaths at the shelter and only 20 people remained as residents at the end of the year.[79] A shipping agent tried to find work or passage for the resident seamen. Inmates were allowed to stay for a maximum 25 days. The Sailor's Home authorities watched their health, and hospitalised who were ill for over three days. Meals were the same price as in other cities. Meals for the entire day cost 12 annas, breakfast and supper 4 annas each and dinner 6 annas if bought separately. Officers needed to pay 8 annas for every meal. The bar supplied liquor from 6 to 7 am, from 12 to 2 pm, and 5 to 9 pm on weekdays, and in Sundays from 1 to 3 pm.[80] The number of sailors accommodated by the Home in 1852 was 1419, out of whom 1381 took jobs on ships, 24 died, and 28 left the place (4 without employment, 6 without notice, 10 were expelled, and 8 shifted to new occupation) without leaving any track.[81] If annual reports are to be believed, the Sailors' Homes seemed to have done an excellent job.

The necessity of regulating seamen's health received an impetus when the British philanthropist Florence Nightingale wrote a number of petitions to the British government for improving the health of troops after the war of 1857. An analysis of the mortality charts of soldiers convinced her that lack of sanitation severely threatened the health of troops. In a report entitled *Observations on the Evidence Contained in the Stational Reports Submitted to Her by the Royal Commission on the Sanitary State of the Army in India*, prepared in 1863, she advocated for improving sanitation in barracks, building hospitals in the cantonments, and providing a coffee room, a theatre, a gymnasium, and a reading room in the barracks to develop

[79] "Calcutta Sailors' Home", *Madras Missionary Register* 4, no. 1 (January 1838): 123.
[80] *16th Annual Report of the Calcutta Sailors' Home* (Calcutta: Military Orphan Press, 1854), 5-6.
[81] Ibid, 8-9.

the morality of soldiers.[82] In a series of letters to Douglas Galton, Assistant Under-Secretary to the War Office, in early 1864, she criticised the Admiralty and War Office for devising wrong diet on board ships that led to scurvy among troops, requesting Galton to ask the chairman of the Barrack and Hospital Improvement Commission about the general principles of rationing at sea.[83] In her correspondence with the Viceroy of India Sir John Lawrence, she expressed concern about poor quality food, water and drinks causing disease and death among seamen in Calcutta, where establishing more Sailors' Homes seemed to be a way of saving them.[84] The Government of Bengal showed more interest in seamen's health in the 1960s than ever before. After the Floating Chapel and Seamen's Library were destroyed in a cyclone on 5 October 1864, they sanctioned 9000 rupees to convert the steamer named *Lady Canning* into a new chapel.[85] In the library, seamen were provided with periodicals, books, newspapers, writing materials such as papers as well as postage stamps to encourage them to write letters to home, to help them bond with their families and not to feel lonely during their sojourn.

The popularity of the Sailors' Home as a refuge was certainly an established factor, which led to the building of several other institutions for housing more seamen. A second Sailors' Home in Calcutta began to be planned in 1850. It was reported that more than £4,000 had been raised by 1851 for this purpose.[86] The plan materialised when the Secretary of the Sailors' Home successfully petitioned the Lieutenant-Governor of Bengal in 1864 for a new building in a better locality. He also expressed the need for a recreation ground, enclosed with

[82] Chieko Ichikawa, "Writing as Female National and Imperial Responsibility: Florence Nightingale's Scheme for Social and Cultural Reforms in England and India," *Victorian Literature and Culture* 39 (2011): 93.
[83] Florence Nightingale, letters to Douglas Galton dated 29 January 1864 and 9 February 1864, in *Florence Nightingale on Health in India*, ed. Gérard Vallée (Waterloo, Ontario: Wilfrid Laurier University Press, 2006), 485-86.
[84] Florence Nightingale, letter to Sir John Lawrence dated 26 September 1864, in Ibid, 498.
[85] Charles Rathbone Low, *History of the Indian Navy: (1613-1863)* (London: Richard Bentley and Son, 1877), 572.
[86] *Dundee, Perth, and Cupar Advertiser*, September 5, 1851, 3.

a bamboo fence, resembling a cricket ground.[87] The Bengal government allowed a part of the vast field next to the Esplanade to be enclosed for seamen to play cricket.[88] The new Sailors' Home came up on the site of the Bankshall building on Strand Road in the administrative district. The Viceroy laid its foundation stone on 13 April 1864.[89] The building, the initial cost for which was pegged at 34,388 rupees, was finally completed at an expense of 173,000 rupees and inaugurated by Sir John Lawrence on 9 January 1868. Designed by W.L. Granville and planned by W. Barnfather of the Bengal Public Works department, the two-storey building offered accommodation for 120 on the ground floor and 160 on the first floor, while the dining hall could hold 600 men.[90]

The Bombay Sailors' Home initially struggled financially and could not offer place to the large number of European sailors who visited Bombay. Sir H. Leeke, Commander-in-Chief of the Indian Navy, helped form a committee that raised about £2,000 towards building a new establishment. Commodore Wellesley and Colonel Marriot procured land from the government after a long discussion. Merchants contributed another £2,000, which went towards funding a new building sanctioned in 1860.[91] Later, the institution was relocated to a building designed by Frederick William Stevens and built between 1872 and 1876 at the crossroads of Colaba Causeway and Frere Road at Apollo Bunder. It was named after Alfred, the Duke of Edinburgh, and second son of Queen Victoria and Prince Albert, to commemorate his visit to Bombay in 1870. The building could accommodate 350 offers and sailors.[92] Soon after its establishment,

87 From S.H. Robinson, Secretary Sailor's Home to Lieutenant colonel H.C James, Private Secretary to the Lieutenant-Governor of Bengal, (dated February 25, 1864), 5, Marine Department.
88 From F.R. Cockerell, Officiating Secretary to the Government of Bengal, to S.H Robinson, Secretary, Sailor's Home, (no. 1146, dated March 5, 1864), 5, Marine Department.
89 *Annual Report on the Administration of the Bengal Presidency for 1863-64* (Calcutta: Military Orphan Press, 1865), 58.
90 "Opening of the New Sailors' Home in Calcutta," *Homeward Mail from India, China and the East*, February 20, 1868, 5.
91 Thomas Stuart, *Extract from a Nautical Essay on Sailors' Home, and the Crimpage System* (London: Cawthorn and Hutt, 1866), 57.
92 http://www.victorianweb.org/art/architecture/stevens/1.html.

the government took a resolution to convert the building into a European General Hospital.[93] The plan did not materialise as the Sailors' Home Committee argued that the construction was a joint venture by the government and Khanderao Gaekwar, Maharaja of Baroda, who donated 200,000 rupees with the understanding that it would be spent for the sake of building a Sailors' Home. The government was not allowed to contravene this arrangement without the Prince's consent.[94] A group of seamen also expressed their grievance against the proposed opening of a hospital. The said that the former Sailors' Home was 'badly drained, and internally and externally in a wretched state of repair,' while 'the south-west monsoon rains come freely into one of the sleeping quarters.' Their hope of shifting to a better building was dashed as the government undertook a different use of the building.[95] A third institution, the Soldiers' and Sailors' Home, was opened in 1889 in the ground floor of a house on Colaba Causeway, opposite to the Tramway Offices, under the aegis of the Wesleyan Methodist Church.[96] It is not known how long these buildings were in use. But what exactly happened inside the premises? Were they really able to solve the problem of destitution, convince seamen not to desert ships, or turn them away from drinking and visiting prostitutes?

The benefits of Sailors' Home

Missionary Rev. T. Smith thought all the seamen he met at the Calcutta Medical College Hospital were responsible for their ailments – seamen themselves and crimps were more dangerous than hurricanes and the capsizing of ships; and seamen needed the help of

93 "Government and the Sailors' Home Committee," *The Times of India*, May 26, 1876, 2.
94 "Government and the New Sailors' Home," *The Times of India*, October 26, 1876, 3.
95 The latter concluded with a rather ominous portent about the state of democracy in British India, that "it would be useless writing to the Indian papers, as public opinion in this country has no weight with Government." "The Sailors' Home, Bombay," *The Times*, August 24, 1876, 11.
96 "Opening of the Soldiers' and Sailors' Home," *The Times of India*, July 3, 1889, 6.

missionaries.[97] The crew of *Ramsay*, which sailed from Glasgow to Bombay in 1840 under a devout Catholic captain, was reported to have been inspired by the captain to behave extremely well. The ship subsequently sailed to Moulmein and then to Calcutta. The seamen, by now proselytised into morality, were sober and regular attendees of the floating chapel.[98] In a letter dated 27 July 1844, the President of the American Seamen's Friend Society, E. Richardson, congratulated the Calcutta chapter on their excellent work, and requested information about the work of missionaries in Asia, especially in regard to Sailors' Homes.[99] At the 17th annual meeting of the Calcutta Seamen's Friend Society in 1845, missionaries were thus reminded of their humanitarian goal:

> The Christian Church, in its collective and especially in its missionary capacity, owes much to our seamen, both in the way of gratitude and responsibility; gratitude, for conveying to different parts of the world her heralds of salvation, responsibility, in looking well to this that they mar not by their guilty example the work of God in foreign lands.[100]

At the 22nd annual meeting of the Calcutta Seamen's Friend Society in 1851, the missionary Mr Chill reported to have distributed 431 Bibles and Testaments and 4607 tracts and books in various languages to 375 vessels all year. The number of seamen attending the Bethel was on the rise, so was the Society's fund to establish a mariner's church.[101] Self-congratulation was a feature of missionary writings. S.E. Bishop, Seamen's Chaplain in Lahaina, Hawaii, wrote in a letter to the *Sailors' Magazine* in 1856 about massive improvement in the behaviour of sailors across the globe – in Melbourne, Calcutta, and Valparaiso.[102] If one were to look into

97 "Heart Cheering News from Calcutta, East Indies," *The Mariners' Church Gospel Temperance Soldiers' and Sailors' Magazine* 25, no. 10 (October 1845): 451.
98 *The Sailors' Magazine* 16, no. 4 (1843): 105.
99 "Heart Cheering News from Calcutta, East Indies," *The Mariners' Church Gospel Temperance Soldiers' and Sailors' Magazine* 25, no. 10 (October 1845): 448.
100 "British India Pleading for Sailors' Missionary Exertions," *The Mariners' Church Gospel Temperance Soldiers' and Sailors' Magazine* 25, no. 10 (October 1845): 442.
101 "Calcutta Seamen's Friend Society," *The Sailors' Magazine* 24, no. 2 (October 1851): 426.
102 *The Sailors' Magazine* 29, no. 8 (April 1857): 251.

missionary records exclusively, European seamen would come across as a reformed collective of patriots. Narratives from Bombay suggested the practice of preaching among sailors might have made some of them religious. A missionary wrote about his encounter with two sailors who were given Bibles to read during their journey to London from Bombay. The book apparently made one of them realise his sins, and understand that his salvation was in praying to Jesus Christ. He also said that several prayer meetings, attended by eight or nine seamen, took place on board their vessel.[103] A 'seaman' alleged that missionaries were more welcoming than the general Christian population who were usually uncomfortable in the presence of uniformed seamen.[104] Missionaries claimed to have helped improve seamen's behaviour. Their propaganda machinery was ever so alert to point out their contribution, probably in the hope of attracting financial support and volunteers.

As biopolitical institutions, the Sailors' Homes regulated the lives and eating habits of their residents. The philosophy of missionary philanthropy for seamen in colonial India differed from the outlook towards the working class in Britain. Showing preference for 'ministering to working-class souls rather than providing for working-class bodies,' evangelists in Britain preached morality instead of providing assistance in the form of alms, health care, housing, food etc.[105] They considered material aid to have a negative impact on the recipient's will and willingness to work. This moral understanding of the nature of social work, implicit in British missionary thinking in the early nineteenth century, was only partially practiced in India. The Sailors' Homes offered complimentary accommodation and meals to many destitute European seamen to save them from imminent hunger, homelessness, and possible death on the streets.

[103] "Bible and Tract Distribution among Seamen," *The Sailors' Magazine* 24, no. 3 (November 1851): 457.
[104] "A Voice from the Sea," *The Sailors' Magazine and Seamen's Friend* 51, no. 1 (January 1879): 15.
[105] Susan Thorne, *Congressional Missions and the Making of an Imperial Culture in Nineteenth-Century Britain* (Stanford: Stanford University Press, 1999), 35-36.

Therefore, the paternalism that the Christian clergy opposed in Britain became the preferred method of welfare elsewhere.

The Calcutta Sailors' Home authorities took a sanitarian outlook on seamen's health. They appointed a superintendent for cleanliness, who inspected the beddings seamen brought along.[106] They ensured cleanliness of the premises as the beginning of their residents' moral journey. The Committee also gave a certificate of character to seamen commending them for avoiding local grog shops and prostitutes. This letter of recommendation enabled them to find lodging in Sailors' Homes in other port cities.[107] One had to follow the expected norms of behaviour to be able to receive this character certificate. A necessary condition was observation of temperance. The Sailors' Home authorities imposed a strict restriction on drinking. They did not allow residents to bring alcohol from outside or consume more than two glasses of alcohol in a day inside the premises. They were sold spirits under the barmen's discretion. No alcohol if they were already inebriated, and expulsion by the House Committee if found to have exceeded their quota of drinking.

Contrary to the Committee's claim to have neutralised the threat of drunkenness, at least one official of the Sailors' Home went on record saying the benevolent institution achieved precious little in this field. The memoirs of Rev. Thomas Atkins, appointed the Home's Superintending Secretary within ten days of his arrival from Australia in 1838 and the Minister of the Bethel after a few weeks, are full of regret for having served in this capacity.[108] He wrote that one of the benefactors of the Sailors' Home was actively engaged in the sale of spirits, beer, and wine. About half of the members of the management committee were directly or indirectly involved in the liquor trade. They encouraged drinking in the Sailors' Home, even

106 *16th Annual Report of the Calcutta Sailors' Home* (Calcutta: Military Orphan Press, 1854), 5-6.
107 Barrett, *Calcutta: Strange Memoirs – Foreign Perceptions*, 391-3.
108 Thomas Atkins, *Reminiscences of Twelve Years in Tasmania and New South Wales, Norfolk Island and Moreton Bay; Calcutta, Madras and Cape Town; The United States if America and the Canadas* (Malvern: Advertiser Office, 1869), 91.

if in a small quantity, to make the residents hanker after more liquor. No real effort was made to stop inmates from visiting public houses, become drunk, and do what they were not supposed to. Atkins was often awakened by drunk seamen noisily scaling walls on their return from punch houses and brothels. Poor management had made the Sailors' Home a curse rather than a blessing for seamen and ship owners.[109]

Atkins saw himself as a 'licensed victualler' whose main responsibility was to monitor the store of 'beer, in barrels and bottles; wines – port, sherry, and claret, in dozens; spirits – brandy, gin, and rum, in large quantities.'[110] He notified the general committee about the tendency of barkeepers to sell liquor above the limit and to steal alcohol from the store at night. As his proposal to close down the sale of liquor to avoid such problems was rejected by the committee, a humiliated Atkins resigned from his position after the 12-month term. At the next meeting of the committee, he raised the demand of total abstinence at the Sailors' Home. His repeated entreaties led to an enquiry, conducted by 'traffickers in alcoholic drinks', which ultimately ruled in favour of selling alcohol.[111] Two other clergymen associated with the Sailors' Home resigned in protest. The disjuncture between policy and practice comes out from personal narratives such as Atkins' reminiscences. The annual reports of the Home or proceedings of the annual meetings would not refer to such disagreement over the running of the institution, or any allegation of mismanagement against the governing committee.

A number of other observers were critical of the Sailors' Home's early failure to deliver its promise of moral purification. In the 1840s, young people leaving England full of hope and aspiration 'buried' their dreams in Lal Bazar and returned home, if they did, with 'heart

[109] Ibid, 92. The daily price of accommodation was nine-pence for sailors, a shilling for petty officers, and eighteen-pence for chief officers. The residents were asked to deposit their entire pool of money to Atkins and allowed to draw one rupee per day to meet their expenses. Many seamen flouted this regulation, some of them preferring punch shops to the Sailors' Home, repudiating the very existence of the shelter.
[110] Ibid, 94.
[111] Ibid, 95.

contaminated, his principles perverted.'[112] A pamphlet published by the Calcutta Seamen's Friend Association on the occasion of the Sailors' Home's tenth anniversary claimed that within 18 months the institution was able to orchestrate closure of all but one of the punch-houses in the vicinity, and the one still open did not usually have more than one occupant. Yet, as *Calcutta Review* reported, scores of punch-houses existed near the Sailors' Home. They made so much profit that their owners did not hesitate paying up to three rupees per day as licence duty. The minimum annual licence fee for a punch-house in Calcutta was 939 rupees or £93.18s, which the owner would pay without whining as rich attorneys in Britain were known to do.[113] Evidently, the Sailors' Home was not managed as efficiently as the missionaries claimed.

In its inaugural meeting at the Victoria Hotel in Calcutta in 1853, the Chairman of The Society of United Seamen for the Protection of Seamen of all Nations called the Sailors' Home 'the hotbed of misery.'[114] Montague Massey, a civil servant, wrote that it was a 'crying scandal' in the 1860s, mainly due to its location in an area abounding with 'native grogshops in which [shopkeepers] sold to the sailors most villainous, poisonous decoctions under various designations,' and 'boarding houses run by a thieving set of low-caste American crimps.'[115] This is probably the only narrative that deviates from the racialised description of the 'cunning' Indian crimps. Norman Chevers too said that the Sailors' Home was 'surrounded with drinking shops of vilest description' and situated in the 'centre of about the worst atmosphere discoverable in this unsavoury city.'[116] He suggested constructing a larger building in a more sanitary and 'reputable' part of the city. Neither did this happen, nor did the sale of alcohol in

[112] "Miscellanious Notices", *Calcutta Review* 9, no. 18 (January-June 1848): xlvi.
[113] Ibid., xlvi.
[114] "Seamen in Calcutta," *The Shipping and Mercantile Gazette*, November 15, 1853, 8.
[115] Montague Massey, *Recollections of Calcutta for over Half a Century* (Calcutta: Thacker, Spinck, 1918), 89.
[116] Chevers, *On the Preservation of the Health of Seamen in Calcutta*, 46.

or around the Sailor's Home ever stop.[117] Seamen's Chaplain A.L. Mitchell advocated for an institute for seamen to socialise, play bowling, chess, and draughts, and drink tea, coffee, 'good' soda-water, ginger beer and lemonade at proper rates.[118]

The management of the Bombay Sailors' Home came under similar criticism in 1839 following the death of a sailor by accidentally falling from an upper window. The editorial of *The Times of India* wrote that not only was the building in abject condition, the disreputable neighbourhood defied the Sailors' Home's objective of protecting seamen from vices.[119] The Secretary of the Seamen's Friend Association, George Candy, said in retaliation that the Sailors' Home ought to be situated in the sailortown since no seaman would visit an unknown place for the sake of its 'respectable coffee-house.' Additionally, any part of the town visited by sailors, the Native Town in particular, could be turned into a hotbed of pubs and brothels. Yet, the behaviour of the Sailors' Home's residents had been exemplary, and any sailor found on the street in a state of intoxication was surely not one of them.[120] The Sailors' Home was criticised anyway for allowing the sale of liquor at the bar, particularly after news of seamen getting ill from drinking came out.

In the first annual meeting of the Royal Alfred Sailors' Home in Bombay, much of the discussion was around the bar at the institution. Captain G.F. Henry, president of the meeting, thought that the bar was necessary to ensure seamen would not go out and drink low quality liquor. He spoke at length about the sailor who was admitted to the European Hospital in a fit of delirium tremens after allegedly drinking too much. He furnished a letter from the police

117 *The Statesman*, December 5, 1882, 1705.
118 Malleson, "The State of the Sailors in Calcutta," x-xiii.
119 "Editorial," *The Times of India*, November 13, 1839, 7.
120 He attached an extract from the minutes of the proceedings of an emergency meeting called at the Home on 16 November 1839, which stated that the windows were barred at an appropriate height. "Correspondence: Sailors' Home," *The Times of India*, November 23, 1839, 7. The newspaper speculated whether this implied the seaman had voluntarily leapt or he was pushed. Otherwise, its attitude turned, manifested in the testimonial of the building's neatness and moderate prices for refreshment being highly suitable for seamen. "Editorial," *The Times of India*, November 23, 1839, 7.

inspector who handled the case, which showed that the person was at the time an inmate of J. Powell's boarding house and not the Sailors' Home. He had gone to the Sailors' Home to collect some of his belongings, so the establish was not responsible for his behaviour.[121] The bar was supposed to sell alcohol in small quantities and never in bottles or cases, daily from noon till 9 pm.[122] Members such as Brigadier-General J.S. Gell was against curbing the free will of seamen by regulating their drinking habits. They condemned the 'arbitrary authority' of the superintendent in making seamen deposit most of their money for safekeeping so that they would have no means to buy excessive drinks and stay sober.[123] Why keep drinks within easy reach of seamen at all, they would ask, pointing also to the fact that not trusting seamen with their personal money, while letting naval officers keep theirs under the same roof, was unjustifiably discriminatory.

At the next annual meeting, all members were elated and self-congratulatory, claiming exceptional success in their objective to reduce drinking among seamen and closing down 'low' boarding houses. Dr James Arnott, surgeon of the European General Hospital, confirmed the reduction in the number of seamen suffering from the effects of intemperance. He also commended the sanitarian agenda of the Sailors' Home in putting disreputable boarding houses, which were known to be hotbeds of infection, out of business. It was common for owners and boarders of such houses to live with others even when afflicted with contagious diseases. The owner of one such lodge had apparently come to the doctor for treatment of smallpox, but returned to his house before recovery, thus putting his boarders at risk.[124] These contradictory narratives demonstrate that missionaries were adept at propaganda, but the jury was out on their efficiency for moral reform of seamen.

121 "*The Sailors' Home: The Bar Question*," *The Times of India*, January 29, 1877, 3.
122 "The Sailors' Home Bar," *The Times of India*, January 29, 1877, 2.
123 "The Sailors' Home Bar," *The Times of India*, February 2, 1877, 2.
124 "Meeting of the Bombay Sailors' Home Society," *The Times of India*, January 26, 1878, 3.

The inefficacy of the Bombay Sailors' Home was established almost incontrovertibly in 1883, when Jesse Smith, about 26-27 years old, from the *HMS Euryalus* was killed while drinking at the bar with three companions. After they ordered beer, another sailor named Ralph Littlewood approached them and drank off one of their glasses, causing a quarrel among the drunken men. As Smith got into an altercation with Littlewood, the latter stabbed him on the chest with a knife and kicked him on the abdomen. The sequence of events that followed was not clear since the witnesses recorded contradictory statements. But the fight ended with Smith dying of acute peritonitis in the European Hospital. Since peritonitis was caused by infection and could not be linked with knife attack, the magistrate discharged Littlewood.[125] The reports of violence and drunkenness at a Sailors' Home almost 50 years after they were conceived in India as a school for temperate lifestyle did not lend themselves well to supporting the missionaries' claim of success. Moral regulation fell short of the expected outcome.

These narratives of negligence, corruption and inefficiency mirrored the complaints against Sailors' Homes in England. David Beckingham's research on the civil administration's crusade against the sale of alcohol in Victorian Liverpool, 'a city with a drink problem', shows the Sailors' Home at the very heart of the problem of intoxication and prostitution.[126] In acceptance of *The Porcupine'*s dismay in 1869 regarding the 'licentiousness, harlotry, and drunkenness' around the institution, the municipal administration launched an investigation and found the rackets of prostitution to be operating mainly from the drinking hubs. Although merely 5 to 8 percent of the people put under arrest for drunkenness were seamen, the constant exposure to liquor shops, brothels, and pawnbrokers was considered to have contributed to moral degradation among the seafaring community.[127] As the Sailors' Home was shifted to a

125 "The Fatal Squabble at the Sailors' Home," *The Times of India,* December 4, 1883.
126 David Beckingham, *The Licensed City: Regulating Drink in Liverpool, 1830-1920* (Liverpool: Liverpool University Press, 2017), 1.
127 Ibid, 103-4.

new location in 1878, the authorities made sure they purchased the adjacent properties so that no grog shop could come up in close proximity. The threat of drunkenness hang so heavy that the municipal authorities considered adopting 'moral means', uncertain if policing alone would be enough as a solution.[128] The Portsmouth Sailors' Home on Queen Street was also surrounded by a number of 'beer-houses,' which, reckoned one observer in 1854, were built with the purpose of leading seamen astray. In the report of the institution's operation in the Religious Tract Society's magazine, the 'clean, intelligent-looking, respectable' seamen in the Sailors' Home were sharply contrasted with the 'dirty drunken sailors staggering out of these taverns.'[129] Thus, the sharp difference between missionary claims and observers' reports was by no means confined to India but was rather a global pattern.

It is not possible to determine how effective the Sailors' Homes were in eradicating drunkenness, but the policies indicate a clear intention of at least regulating drinking to smother what they considered an inherent vice in seamen. As potential clients of the so-called disreputable pleasures, seamen's bodies were regulated through measured food and drink and morality kept under surveillance by restricted mobility and insistence on sport and reading. Thee Calcutta Sailor's Home requested the police commissioner not to issue licence for grog shops near the Sailor's Home without government approval.[130] V.H. Schalch, Chairman of the Justices, told Major Malleson that the Sailors' Home and boarding houses in Calcutta were comfortable, but the latter often caused problems by asking seamen to deposit a week's rent and pay for a bottle of liquor at the time of checking in, failing to do which seamen had to pawn their clothes. Since seamen were paid in an advance note that could not be readily cashed, they had to dig into their savings that often ran out quickly. Merely a 'night's debauch' emptied their pockets, and they landed in hospital or prison unless they managed to secure a job

[128] Ibid, 115.
[129] "A Visit to the Sailors' Home at Portsmouth," *The Leisure Hour*, no. 129 (June 15, 1854): 382-83.
[130] Revenue Proceedings No. 21, May 1867, Miscellaneous Revenue Department, Government of Bengal, WBSA.

promptly afterward.[131] Malleson commented that many boarding masters encouraged seamen to keep drinking on their premises, and drained them out of their savings.[132]

The Sanitary Commission rejected Malleson's recommendation of enforcing the British Vagrancy Act in Calcutta to arrest unruly seamen, and abolishing privately-owned boarding houses in favour of state-controlled accommodation for seamen.[133] The Commission rather insisted on appointing a Marine or Port Magistrate, better regulation for shore leave for seamen, and establishment of riverside dispensaries. The Bengal Government was supporting of the Sailors' Home, even saying that the institution was unique in treating seamen like 'rational' beings.[134] The annual report of the Sailors' Home in 1873 revealed the continuance of the crimping problems, using more or less the same vocabulary as 40 years before. While more seamen had opted for meals at the Sailors' Home, crimps were still on the lookout to 'inveigle' seamen to the Flag Street neighbourhood. In 1869 the number of eaters was 175; in 1870, 603; in 1871, 636; in 1872, 575; and in 1873, 732.[135] The Methodist Church opened a Seamen's Reading and Coffee Rooms at 19 Lal Bazar in 1874. Apart from preaching abstinence during their nightly religious service for visiting seamen, they encouraged teetotalism by offering coffee and refreshment at low prices. The Coffee Rooms also had a reading hall with newspapers, magazines and about 500 books gifted by 'friends of the institution.' Some European women invited seamen to tea at their homes, a practice that began in the late 1850s to thank seamen for helping resident Europeans during the Sepoy Mutiny.[136] In 1892, the

131 Malleson, "The State of Sailors in Calcutta," 10.
132 Ibid, 11.
133 IOR: P/437/29, Government of India, Home Department Proceedings, Marine 1866, No. 18, Letter No. 115, J.M. Cunningham, Officiating Secretary to the Sanitary Commission for Bengal to A. Eden, Secretary to the Government of Bengal, February 9, 1866, 118.
134 *Annual Report of the Sanitary Commissioner for Bengal for 1868* (Calcutta: Alipore Jail Press, 1869), 561.
135 The daily rate of room and board (breakfast and three substantial meals) was 12 annas (1s. 6d.), which compared favourably with the daily rates in Sydney (2s. 6d.) and Melbourne (3s.), and the weekly rates in Liverpool (16s.) and London (15s.). "Calcutta Sailors' Home," *Sunderland Daily Echo and Shipping Gazette*, September 23, 1874, 4.
136 Stan Hugill, *Sailortown* (London: Routledge and Kegan Paul, 1967), 316.

government made an annual contribution of 3,000 rupees and the city's merchants donated 3,500 rupees to help run the institution. The main agents of the institution were a group of women including Mrs Meik, Mrs Conklin and Mrs Henderson, who visited grog shops in the Sunday afternoons and invited seamen to the services.[137] Rev. Frank W. Warne quoted George Henderson, the Coffee Rooms manager, saying in 1891 that seamen greatly appreciated the refreshment rooms at the mission.[138] He wrote in 1898 that the self-supporting Sailors' Home provided about 10,000 free meals each year to destitute seamen.[139] It cannot be known if the seamen followed the dietary evangelicalism voluntarily, or were just paying lip service to the missionaries' self-evaluation as excellent reformers for the cheap or free meals. Either way, they were subject to a regulated diet designed to improve their morality.

Naval officers and missionary work

In some ways, missionaries were more dynamic than municipal governments in curbing drinking and desertions problems by getting the sober seamen jobs on ships. The Church and the State had a strange alliance, which was articulated probably the most aphoristically by Norman Chevers. If a healthy sailor asked him the secret of longevity, he would tell him to be moral and religious.[140] Governments were often happy to play second fiddle to the Church, acknowledging a precise dose of moral education to be a potent instrument of regulation. Some retired naval officers complimented missionary works by proposing new measures for seamen's welfare. On 30 November 1863, at a meeting of merchants, commanders and officers of ships, and those interested in the welfare of seamen, at the Town Hall in Calcutta, Capt.

137 *74th Annual report of the Missionary Society of the Methodist Episcopal Church for the Year 1892* (New York, 1893), 222.
138 *73rd Annual report of the Missionary Society of the Methodist Episcopal Church for the Year 1891* (New York, 1892), 202.
139 *90th Annual report of the Missionary Society of the Methodist Episcopal Church for the Year 1898* (New York, 1899), 229.
140 Chevers, *On the Preservation of the Health of Seamen*, 48.

Henry Toynbee expressed his conviction that seamen would relish attending a club. Encouraged by the regular 200-strong audience, he organised lectures at the Floating Library off Colvin's Ghaut and prepared to start an evening school on board the *Hotspur*.[141] He wanted the club to provide seamen grounds to play cricket, quoit and skittle, and rooms for reading, lectures, and refreshments including iced water and lemonade but no intoxicating drink. The idea was further discussed at a meeting at the Chamber of Commerce on 3 December 1863. The participants decided to petition the government for a plot of land near Baboo or Prinsep's Ghat.[142]

In a letter addressed to E.C. Bayley, Secretary to the Government of India, the Chamber of Commerce urged consideration of Toynbee's recommendation of establishing an institute and playground for the 3,000-4,000 British seamen visiting Calcutta. They requested the government's assistance in building an institute near Chandpaul Ghat, far away from Flag Street. They preferred the ground next to Baboo Ghat, flanked by the Supreme Court and the western end of the Esplanade, but were open to using the 200-yard long strip of land between the Commissariat Godowns and Prinsep's Ghat in case of an objection. They agreed that the building should be a semi-permanent structure and come up on government land so that no liquor shop or other building could come up in its vicinity.[143] Toynbee kept petitioning in hope for the government to take seamen's cause more seriously. His letter to *The Times* in 1867 tells us that the plan for the playground was finalised and the Viceroy had also given permission to build an institute where seamen living on board ships could attend mass on Sundays and have 'rational' amusement. He wanted the institute to be open to all seamen regardless of their nationality.[144] The Bombay Chamber of Commerce liked Toynbee's idea and petitioned the

141 *Sailors' Institute: Proceedings of a Public Meeting Held in Calcutta* (Calcutta: Sanders, Cones & Co, 1863), 3.
142 Ibid, 25.
143 Ibid, 27-28.
144 "Our Merchant Seamen," *The Times*, May 24, 1867, 6.

government to consider opening reading rooms, swimming baths and skittle alleys as means of 'healthful amusement.'[145]

In a letter to the *Morning Post* in 1868, Toynbee advocated for starting Sailors' Clubs in India along the line of the Soldiers' Clubs. As houses of recreation and interaction among gentlemen, these were to be distinct from the Sailors' Homes that catered to distressed seamen. He mentioned the Secretary of State having relayed his message to the Master Attendant for scoping out the practicability of establishing a Sailors' Club or Institute and ascertaining from the Chamber of Commerce the likelihood of collecting funds to top up the government's grant.[146] He wrote in a subsequent letter that the proposal was not acted upon as the authorities were engaged in building a second Sailors' Home away from Flag Street unlike the first Home. Their attention was thereafter diverted to relief of cyclone and famine victims.[147]

Another of Toynbee's ideas, presented during his talk on 30 November 1863, was a universal Pension and Life Insurance Fund for seamen, which will not be compulsory like the Merchant Seaman's Fund that went bankrupt, leaving many subscribers in financial trouble.[148] The Fund required every British sailor to deposit 1s. a month to this Fund, which ran for 80 years, of which 6d. was used to support the Greenwich Hospital and 6d. to their own benefit. Having found out 6d. was not enough to support the benefit of seamen, the Government channelled the entire amount towards the benefit scheme, depriving the hospital of its share. When this measure too turned out to be insufficient, the government made the deposit optional, assumed control over the funds managed by local boards, and reduced the pension of subscribers. Toynbee asked his actuary friend Osborne Smith for an estimate of how a new

145 Letter, James Taylor, Secretary, Bombay Chamber of Commerce, to F.R.S. Wyllie, Under Scretary to Government, May 17, 1869, No. 127 of 1869, *Report of the Bombay Chamber of Commerce for the Year 1868-69* (Bombay: Education Society's Press, 1870), 256-57.
146 "Merchant Seamen," *Morning Post*, December 15, 1868, 3.
147 "Our Merchant Seamen," *Morning Post*, January 8, 1869, 5.
148 *Sailors' Institute*, 7.

insurance plan could be laid out. Smith received detailed information about it from Samuel Brown, Actuary to the Guardian Insurance Office, who was behind the Naval Reserve Fund. In Smith's opinion, the sailor should invest a lump sum of money in his insurance fund, and not pay annual subscription, for the system to work in his favour.[149] Starting a new Life Insurance and Pension would have relieved some of the burden of maintaining orphan asylums for children of deceased seamen and old sailors respectively.

The idea was received well by the English press. One newspaper wrote that it was an opportune moment to introduce the idea since the Chancellor of the Exchequer was seeking to implement a scheme of annuities and life insurance for the benefit of the poor. A little modification in the Bill presented to the Parliament would have allow seamen to be included as beneficiaries.[150] On his return to England, Toynbee continued delivering public lectures about the utility of life insurance for seamen guaranteed by the government and managed by shipping offices. His talk at a Society of Arts meeting in 1867 generated a lively debate among the audience in regard to the desirability of insurance and pension fund for seamen.[151] A paper read by Commander Dawson at a meeting chaired by Toynbee at the Social Science Association in London in 1871 referred to the necessity of insurance.[152] However, the government did not seem to take the suggestion seriously. Some private insurance companies provided cover for seamen dying from accidents, especially shipwrecks, but no plan to cover diseases encountered in various parts of the world came up in the nineteenth century.

In 1883, *The Times of India* reported an 'epidemic' of mutiny and desertion among seamen in Calcutta. In a meeting at the Spencer's Hotel on 13 July, shipowners identified as the intention to escape the law in England and the judicial leniency with cases of desertion.

149 Ibid, 9.
150 *The Shipping and Mercantile Gazette*, May 3, 1864, 5.
151 "The Number and Efficiency of British Seamen," *Morning Post*, January 18, 1867, 7.
152 "The Social Condition of Merchant Seamen," *The Globe*, March 14, 1871, 6.

Capt. Smith of the British ship *Dawpool* criticised the popular perception of 'poor Jack' as the victim of circumstances, saying ship owners were no less affected by seamen's behaviour. At another meeting, held at the Dalhousie Institute on 17 July, ship captains discussed how effectively seamen could be dissuaded from malingering and deserting.[153] These discussions did not result in much improvement of seamen's employment situation. British seamen in Calcutta and other Indian ports never ceased to complain of severe hardship at work, especially being forced to do what they were not suitable for, thus endangering themselves and the lives of their co-workers. The Seamen's Friendly Society delivered a memorial to the President of the Board of Trade, urging him to enquire into maritime labour problems.[154] Despite their efforts, Christian philanthropic organisations could not fully reduce seamen's distress. In the 1880s, the Sailor's Home officials allegedly colluded with crimps, and the management was overhauled after a long struggle by the Benedictine clergy Father Hopkins of the Priory and Capt. J.H. Williams.[155] The outcome after a century of missionary struggle was encapsulated in the statistics of the Presidency General Hospital in the 1890s that reveals the seamen's quarters as Calcutta's syphilis hotspot, showing seamen's habits hardly changed over the century.[156]

Conclusion

This chapter has examined the efforts of missionaries to regulate seamen's moral health in Indian port cities as part of a global effort. Calcutta seemed to be highly important in the network of ecclesiastical missions as it was always right behind London and New York in

153 *The Times of India*, July 19, 1883, 3.
154 "Grievances of British Seamen," *The Globe*, June 2, 1894, 3.
155 Hugill, *Sailortown*, 315.
156 J.G. Pilcher, *Report on the Calcutta Medical Institutions for the Year 1892* (Calcutta: Bengal Secretariat Press, 1893), 9.

implementing new models, and inspired development in other colonial settlements in South and Southeast Asia. The necessity of looking after seamen grew out of the anxiety to protect European racial superiority and moral health in a climate where they debased themselves. Missionaries, self-represented as benevolent souls with nothing but the goodwill of seamen in their heart, tried to inculcate the benefits of healthy living and thinking among the latter. This image of religious altruism explodes when inspected closely, as missionaries accused each other of profiteering from or poorly governing institutions for seamen. As for seamen, who were marginalised as a low social class, missionary influence might not have made much inroad as we get conflicting reports about the Sailors' Home's impact.

The colonial state often helped seamen's missions by offering them buildings or plots of land. Sailors' Homes in the nineteenth century were remarkable as meeting points of religious, political and commercial actors on a humanitarian ground. The nature of imperial collaboration expressed through the services of these Homes indicates the existence of an organised network of governance. This is not to suggest that colonial governance was highly centralised or colonial society was perfectly ordered in terms of a chain of command, as we have seen missionaries and colonial officials often failing to understand and arguing among themselves about the most desirable and the most effective way of taking care of seamen. The state was not very effective and sometimes lacked any real motivation to protect seamen, notwithstanding the massive commercial implication of the latter's good health. Their ventures were taken forward mostly by employees with private interests rather than any systematic investment in resources. Nevertheless, the network, however imperfect, shows that the British in positions of power and wealth in India had the drive to act as benefactors of their less fortunate countrymen. Their success in drawing donation from Indians in services meant exclusively for Europeans show the nature of collaboration with the colonised.

The Sailors' Homes in India lasted longer than their counterparts elsewhere in the British Empire, often serving as a model for similar ventures. Missionaries there were more proactive in their demands and accomplishments than in many other British territories. For example, missionaries in British Columbia seriously pondered establishing a Home as an alternative site of masculinity, but the project never materialised. The objective was to provide a respectable surrogate family to white seamen to deter them from visiting pubs and brothels. The Home was to replicate the principles of 'domesticity, discipline, and sobriety' that underpinned the YMCA. Mechanics and Literary Institutes offered books and self-improvement classes to people, targeting mainly those who might have been put off by the YMCA's religious connotations.[157] The Sailors' Home sought to transform reprobate sailors into hardworking respectable citizens who would stay away from both mixed-race and rough homosocial pastimes. The death at work of a drunk sailor in 1867 naval authorities to think of building a place with the comfort of a public house but none of its inimical influences. Adele Perry cites several reports from the *British Colonist* newspaper that shows how similar the concern for sailors was across the British Empire. As the newspaper stated, Sailors' Home would perform the double action of protecting sailors from 'persons who, playing upon the poor fellow's weakness and simplicity, seek to relieve him of his hard earned pay', and the common people from 'swarms of giddy men to play their fantastic tricks before the eyes of all.'[158] The plan to set it up did not come to fruition as neither the government nor the public raised the necessary money. However, the anxiety mirrored the global concern for the wellbeing of sailors and the need to shield the society from them.

[157] Adele Perry, *On the Edge of Empire: Gender, Race, and the Making of British Columbia, 1849-1871* (Toronto: University of Toronto Press, 2001), 84.
[158] Ibid, 90.

CHAPTER 4

Drunkenness, degeneration, and diseased spaces

The drinking habits of European seamen were a major concern for the British colonial government in India. The stereotype of wanton drinking, escapism, violence and poverty was associated so powerfully with seamen that drunkenness seemed to be central to life at sea. Historian Cheryl Fury quotes an anonymous eighteenth-century source that said liquor kept a sailor's body and soul together.[1] Drinking was a means to befriend strangers, allay fears of perilous journeys, and generate unity among crew members. Captains apparently exercised authority over their crew by regulating their access to alcohol.[2] As agents of imperialism, members of the white race, and representatives of Christianity, European seamen were supposed to be highly disciplined and competent. Their work had immense practical importance for empire-building, but their behaviour and ineptitude as standard bearers of the empire and the 'ruling race' was blamed mostly upon their insobriety. In keeping with the assumption that seamen's problematic and undesirable identity was defined by drunkenness, they became a common target for reform in temperance and social purity movements. Drunkenness among seamen became a contentious issue in regard to both the ailments and the public disorders attributed to its effects.

The previous chapter showed how the reformist mission of the Christian clergy subalternised European seamen by categorising them as wretched victims of circumstances. Uncertainties of life and lack of morality, they said, made seamen turn to evils like

1 Cheryl A. Fury, *Tides in the Affairs of Men: The Social History of Elizabethan Seamen, 1580-1603* (Westport, CT: Greenwood Press, 2002), 90.
2 Taylor Gray, "Whispers in a Bottle: The Language of Liquor and the Politics of Prohibition in Nineteenth-century New Zealand," *Law and Humanities* 10, no. 1 (2016): 90-114.

drunkenness, theft, murder and public disturbance. The colonial state was relatively slow to begin reforming seamen. They had specialised hospitals for seamen from the early eighteenth century, but it was not until the 1860s that official enquiries were made into the state of seamen in India and reform measures carried out. How concerned were they about seamen's health and living conditions? Was the reason for concern the need to protect the society from seamen, who were well-known for public disturbance, theft, and murder? What did the colonial state do to regulate drunkenness, and prevent seamen from being ill or committing crimes? In view of the previous chapter's conclusion that moral regulation of seamen largely failed, this chapter argues that the Government of India's efforts to regulate European seamen was rooted in an urge to expand colonial power and legitimise their rule. The colonial state took the circuitous route of delegitimising certain practices such as the sale of unlicensed and adulterated liquor, with the aim of limiting seamen's access to drinking. The chapter will discuss why the British colonial state and the maritime authorities considered drinking and drunkenness problematic, what they did to resolve the problem, and how far their efforts met with success.

Drunkenness, health, and race

In early modern Britain, drinking was not only a socially accepted pastime for both the rich and the poor, but also an indispensable ally to the social identity of the affluent sections. Alcohol was thought to catalyse rather than cause drunkenness, so drinking had little stigma attached to it.[3] Drunkenness were rarely considered a moral or health problem until the eighteenth century. In fact, until the mid-twentieth century, many people considered alcohol safer to drink than water. Some physicians prescribed alcohol for restoring mental and physical

3 Phil Withington, "Intoxicants and Society in Early Modern England," *The Historical Journal* 54, no. 3 (2011): 631-57.

'imbalances,' influenced to some extent by its use in Christian rituals.[4] They also thought some alcoholic drinks were generally invigorating and had nutrients and medicinal properties to fight influenza. In the 1700s, however, a small number of medical practitioners had started calling drunkenness or intoxication a problem and sometimes a disease. William Bynum argues that three concurrent developments were responsible for this concern: rising interest in public health, suspicion of the effectiveness of the therapeutic use of alcohol, and advancements in nervous physiology. Excessive drinking began to be considered a vice in the late eighteenth century.[5] Through their observations of the link between alcohol consumption and symptoms like fever, delirium and physical weakness, physicians such as William Cullen and Thomas Trotter theorised that chronic drinking was a disease – the sign of an impaired if not an indulgent or immoral mind – that resulted in bodily disorders. Trotter named sudden death, apoplexy, palsy, dropsy, madness and mental disquietude as effects of drinking.[6] Studies such as these had influenced further investigations into the neurophysiological aspect of drunkenness.

In the early nineteenth century, more medical practitioners, disillusioned with alcohol's supposed health benefits, started conceptualising alcoholism as a disease. They supported the idea that drunkenness not only led to health problems, it was a disease in itself. In 1813, Thomas Sutton described 'delirium tremens' as a disease caused by excessive drinking, and Samuel Pearson called this disease 'brain fever.' Drunkenness was most commonly cited as a cause of insanity since a high number of inmates in lunatic asylums across Western Europe and America were recognised as habitual drunkards, but medical opinion was divided over whether or not

4 David Clemis, "Medical Expertise and the Understandings of Intoxication in Britain, 1660 to 1830," in *Intoxication and Society: Problematic Pleasures of Drugs and Alcohol*, eds. Jonathan Herring, Ciaran Regan, Darin Weinberg and Phil Withington (Basingstoke: Palgrave Macmillan, 2013), 33-51.
5 William Bynum, "Chronic Alcoholism in the First Half of the 19th Century," *Bulletin of the History of Medicine* 42, no. 2 (1968): 160.
6 Thomas Trotter, *An Essay on Drunkenness* (Philadelphia: Anthony Finley, 1813), 12.

drinking and drunkenness could be counted as a cause of mental illness or were the outcome of a diseased brain. German physician C. von Brühl-Cramer argued that drunkenness was a disease, resulting from people's abnormal desire to drink, which he termed dipsomania.[7] The majority of German physicians at the time, namely, C. W. Hufeland, Karl Rösch, and Franz W. Lippich, described alcoholism primarily as a social problem rather than a disease, influenced partly by the temperance movement's emphasis on drunkenness being a vice.[8] The first clinical definition of alcoholism was proposed by the Swedish physician Magnus Huss, who in 1849 described it as a pathological symptom derived from habitual drinking. He further said that middle-aged and working-class people were more susceptible to this disease.[9] The medicinal use of alcohol started waning around this time with alcoholism widely understood to be a social problem, and most mental health specialists and political liberals advocating temperance or abstinence.[10] The problematising of alcohol as a social issue and health disaster in the early nineteenth century was the first in a series of actions intended to persuade the common people to drink in moderation or quit drinking.

Based on the popular belief that excessive drinking brought out the worst form of working-class masculinity – violence, the drinking habits of the working-class population in particular became a target for moral reform. It caused drinking to evolve from 'an occasional source of anxiety' into 'the object of a borderline social neurosis.'[11] In addition, as a new work ethic emerged with the consolidation of industrial economy, which put a premium on time and discipline, drunkenness was transformed 'from a personal state of excess sociability into an

7 Bynum, "Chronic Alcoholism," 170.
8 Ibid, 174.
9 Ibid, 181.
10 Jonathan Reinarz and Rebecca Wynter, "The Spirit of Medicine: The Use of Alcohol in Nineteenth-Century Medical Practice," in *Drink in the Eighteenth and Nineteenth Centuries*, eds. Susanne Schmid and Barbara Schmidt-Haberkamp (London: Pickering & Chatto, 2014), 127-40.
11 Henry Yeomans, *Alcohol and Moral Regulation: Public Attitudes, Spirited Measures and Victorian Hangovers* (Bristol: Policy Press, 2014), 8.

anti-social vice.'[12] The perception of intoxication as an act of deviance that made drunkards behave in an irresponsible and degrading manner had a strong impact on public policy and social welfare. The changing forms of drinking and regulations also foregrounded questions of personal liberty, moral regulation, and market economy.[13] After alcohol consumption reached its peak in the 1870s, government regulation of work routines and drinking reduced the sale of alcohol to an extent. Drinking was still a part of everyday life in the working-class milieu.[14] The drinking question was thus linked to a number of political and social questions of the day.

Historian Brian Harrison identifies several interlocked patterns of temperance reform such as the demand for free trade in beer, the anti-spirits campaign, the teetotal movement, and the quest for legal prohibition of all liquor.[15] In the 1830s, the British government proceeded to control drunkenness by licencing and regulating the sale of alcohol. The temperance movement, led by Methodist clergy, saw intoxication first as an obstacle to moral integrity of the British people and then as a social evil that needed to be abolished. The demand for prohibition became entangled with the question of public health with the rapid advance of the knowledge of ailments resulting from drinking alcohol. Towards the late nineteenth century, the government took upon the 'drinking question' as a matter of social reform. Finally, at the turn of the century, critics of drunkenness started projecting alcohol abuse as a cause of national and racial degeneration.[16] Some of these critics were dismayed that the sale of alcohol was not abolished, but they had partial victory as a number of Acts were passed to regulate the quality

[12] Lilian Lewis Shiman, *Crusade against Drink in Victorian England* (New York: Palgrave Macmillan, 1988), 2.
[13] David Jones, *Crime, Protest, Community, and Police in Nineteenth-Century Britain* (London: Routledge & Kegan Paul, 1982); James Nicholls, *The Politics of Alcohol: A History of the Drink Question in England* (Manchester: Manchester University Press, 2009); Dana Rabin, "Drunkenness and Responsibility for Crime in the Eighteenth Century," *Journal of British Studies* 44 (2005): 457-77.
[14] Brad Beaven, *Leisure, Citizenship and Working-Class Men in Britain, 1850-1945* (Manchester: Manchester University Press, 2005), 63.
[15] Brian Harrison, *Drink and the Victorians: The Temperance Question in England, 1815-1872* (London: Faber and Faber, 1971).
[16] John Greenaway, *Drink and British Politics since 1830: A Study in Policy-Making* (New York: Palgrave Macmillan, 2003), 4.

of alcohol and the behaviour of the consumers. In several reports presented to the government, such as the lawyer and reformer George Blaiklock's *The Alcohol Factor in Social Conditions*, intoxication was blamed for various problems such as crime, destitution, insanity, syphilis, pneumonia and cancer.[17] The temperance movement, though moderately successful in putting a restraint on drunkenness in some areas, failed to have a lasting impact. Some alcoholic drinks like brandy continued to be used as medicine well into the twentieth century.

The concept of inebriety was proposed as a definition for habitual and unregulated drunkenness in 1880s. The dominant medical discourse on inebriation suggested non-white people were more likely to be inebriates since they were not intelligent or civilised enough to regulate their own behaviour. For white Europeans, inebriety was not a natural condition but a disease – a 'paralysis of the will.' Alcohol weakened control over one's body and behaviour, opening their bodies to biological and moral degradation.[18] In the context of British India, the theory of racial degeneration due to drunkenness sprouted earlier than in Europe. The high mortality rate, a growing pessimism surrounding the ability of Europeans to acclimatise to Indian conditions, and the imposition of racial boundaries created an atmosphere of fear of the Indian subcontinent and its people.[19] This fed into the longstanding anxiety about the adverse impact of tropical climate and interracial relationships upon European bodies, calling for the need of a temperate lifestyle for survival.

Harald Fischer-Tiné's work has addressed how the Government of Bengal confronted two of the biggest problems of European seamen – disorderly behaviour and unemployment – from the 1850s to the 1880s. A number of surveys commissioned by the government in the

17 G. Blaiklock, *The Alcohol Factor in Social Conditions: The Report of an Inquiry Presented to the National Temperance League* (P.S. King & Son, Westminster, 1914).
18 Mariana Valverde, *Diseases of the Will: Alcohol and the Dilemmas of Freedom* (Cambridge: Cambridge University Press, 1998).
19 Mark Harrison, "The Tender Frame of Man": Disease, Climate, and Racial Difference in India and the West Indies, 1760-1860," *Bulletin of the History of Medicine* 70, no. 1 (1996): 68-93.

1860s, when both the unemployment and mortality rates of seamen were very high, advocated that alcohol consumption, especially that of adulterated and low quality local liquor, was at the root of these problems.[20] He provides a useful discussion of intemperance as a medical and moral problem for nineteenth-century British colonialism. On the one hand, colonial narratives of alcohol abuse emphasised the adulteration and drugging of liquor as a major cause of diseases like cholera, drawing a direct relationship between drinking and ill health. On the other hand, viewing intemperance responsible for crime and violence, the colonial state regulated 'who drank what and where'.[21] The regulation of drinking habits, meant to ensure the class roles of Europeans, revealed the internal stratification of the ruling class. Like the working-class population in Britain, the poor whites in India were criticised for their lack of self-control.

The British military administrators in India were concerned with the high mortality rate among European troops from diseases such as cholera, malaria, plague, and venereal disease. They thought alcohol consumption, especially bazaar liquor and sexual intercourse with local prostitutes aggravated such diseases. Yet, they were reluctant to prohibit soldiers from visiting brothels and punch houses, suspecting an increase in alcoholism and homosexuality within the barracks.[22] More than soldiers, they targeted unregistered dealers and arrack vendors who sold poor quality and adulterated liquor, and the wives of soldiers who prostituted themselves and procured illegally distilled alcohol.[23]

[20] Harald Fischer-Tine´, "Flotsam and Jetsam of the Empire? European Seamen and Spaces of Disease and Disorder in Mid-Nineteenth-Century Calcutta," in *The Limits of British Colonial Control: Spaces of Disorder in the Indian Ocean Region*, eds. Ashwini Tambe and Harald Fischer-Tine´ (London and New York: Routledge, 2009), 121-54.

[21] Harald Fischer-Tiné, "The Drinking Habits of Our Countrymen: European Alcohol Consumption and Colonial Power in British India," *The Journal of Imperial and Commonwealth History* 40, no. 3 (2012): 398.

[22] Douglas M. Peers, "Soldiers, Surgeons and the Campaigns to Combat Sexually Transmitted Diseases in Colonial India, 1805-1860," *Medical History* 42, no. 2 (1998): 137-60.

[23] Douglas M. Peers, "Imperial Vice: Sex, Drink and the Health of British Troops in North Indian Cantonments, 1800-1858," in *Guardians of Empire: The Armed Forces of the Colonial Powers c.1700-1964*, eds. David Killingray and David Omissi (Manchester and New York: Manchester University Press, 1999), 25-52; Erica Wald, "Health, Discipline and Appropriate Behaviour: The Body of the Soldier and the Space of the Cantonment," *Modern Asian Studies* 46, no. 4 (2012): 815-56.

Complaints of soldiers committing crimes under the influence of alcohol produced in India came from settlements outside India too. From the late eighteenth century, most British garrisons and naval bases in Asia and Africa were supplied with Bengal rum or arrack produced in and around Calcutta.[24] Alexander Beatson, Governor of St Helena – a South Atlantic island where the East India Company's fleet and troops were seasoned for tropical climate before service in India – wrote that four-fifths of the patients in the St. Helena hospital in 1808 suffered from liver problems or other ailments resulting from drunkenness. Considering drinking habits responsible for 19 out of the 20 crimes committed by soldiers, the island's government prohibited sale of liquor in public houses in 1809. Knowing local production of liquor could not be prevented, they stopped all imports. Within four months, the number of ill soldiers in the hospital was reduced from 132 to 48, and down to 30 in 1810.[25] In the early nineteenth century, the link between alcohol, disease and crime was self-evident and taken for granted across the British Empire.

Recent studies of the administrative strategies for limiting alcohol consumption within the military establishment in India have emphasised the colonial state's anxiety for preserving the discipline and health among soldiers. These works have also pointed out that commanding officers and surgeons often went beyond or against the government to exercise what they thought was right for the soldiers. In the process, they created new racialized categories such as Indian prostitutes, whom they defined as threats to European bodies and morality.[26] More importantly, alcohol itself became a racialised commodity. Colonial military officials suspected that Indian drinks like arrack and toddy could be beneficial for Indian labourers, but lethal for European soldiers, who were more accustomed to beer and traditional distilled spirits.

[24] Roger Knight and Martin Wilcox, *Sustaining the Fleet, 1783-1815: War, the British Navy and the Contractor State* (Woodbridge: Boydell, 2010).
[25] Alexander Beatson, *Tracts Relative to the Island of St. Helena* (London: W. Bulmer, 1816), lxxvi-lxxvii.
[26] Erica Wald, *Vice in the Barracks: Medicine, the Military and the Making of Colonial India, 1780-1868* (Basingstoke: Palgrave Macmillan, 2014).

On the contrary, the Indian intelligentsia held the view that European spirits were harmful for Indians.[27] Such racial construction of the impact of drinks on specific bodies helped formulation of the paradigm of racial superiority on the medical field. This chapter will show how the drinking habits of European seamen influenced the ideology of the colonial state and the politics of racial difference.

Drinking and drunkenness in the British maritime services

The conventional understanding of seamen's drunkenness was arguably developed by three arbiters in seamen's affairs: naval surgeons, the British government, and Christian missionaries. Regarding the drinking habits of seamen, it should be pointed out that alcohol provision on board ships was a longstanding practice. Sir Gilbert Blane thought drinking was seamen's right that no captain could prohibit. Captains could exercise their disciplinary powers to reduce alcohol ration, but prohibition, it was feared, could lead to riots.[28] Blane was one of the medical practitioners who thought certain alcoholic drinks possessed health properties. He wrote that malt liquor and spruce beer could be 'wholesome' and antiscorbutic if appropriately consumed.[29] In his justification of the benefit of wine as a drink, Blane mentioned the wine-drinking French fleet's superior health compared to the beer-rum-whiskey-drinking English navy (though elsewhere he was highly critical of the French navy, especially when the two countries were at war).[30] Wine was comparatively easier to digest and contained better medical properties than distilled spirit. The ideal longevity and daily intake quantity of spirits depended on their ingredients and the quality of the container, but seamen hardly cared. Blane

[27] Erica Wald, "Governing the Bottle: Alcohol, Race and Class in Nineteenth-Century India," *The Journal of Imperial and Commonwealth History* 46, no. 3 (2018): 397-417.
[28] Gilbert Blane, *Observation on the Diseases Incident to Seamen* (London: Joseph Cooper, 1785), 300.
[29] Ibid, 301-2.
[30] Ibid, 303.

commended Admiral Vernon's invention of grog, a mixture of spirit and water in equal measure that reduced the potential for intoxication, for being a better substitute of hard liquor.[31] His preference for tea to alcohol as a refreshing drink did not find favour with ship captains who were inclined to supply alcohol to keep their crew happy. He also criticised the Navy for supplying more alcohol than the stipulated daily ration for seamen.

The most palpable consequence of drinking was the temporary change in behaviour. Blane thought intemperance was a major cause of insanity among seamen, who were seven times more likely to be mentally ill than any other occupational group. Unable to find scientific proof of the connection, he hypothesised that frequent collision of the heads of inebriated sailors with the wooden and metallic frames of the ship's interior could have been the cause.[32] Thomas Trotter wrote about his experience of watching an inebriated Royal Navy sailor quarrelling with his wife and cutting off two of his fingers with a butcher's cleaver. Unfortunately, when the sailor woke up the next morning with a bandaged hand, he had no memory of the previous night and 'wept like a child' when told about his injury.[33] Thus, loss of consciousness and impairment of the nervous system were common themes in naval surgeons' stories of patients.

As the opinion against intemperance grew, government officials and industry leaders became increasingly aware and concerned about intoxication reducing the competence of their workforce. The merchant and war navies of several countries started switching alcohol with premium quality coffee and tea in seamen's diet. Naval authorities around the world floated the idea that abstinence improved the chance of surviving the ordeals of maritime voyages.[34]

31 Ibid, 305.
32 Gilbert Blane, "Statements of the Comparative Health of the British Navy," *Medico-Chirurgical Transactions* 6 (1815): 525. Grog was served twice a day so that seamen would not finish their allowance at one go. The name grog was derived from Vernon's nickname of 'Old Grogram' after the old grogram boat cloak he wore. Kevin Brown, *Poxed and Scurvied: The Story of Sickness & Health at Sea* (Barnsley: Seaforth Publishing, 2011).
33 Trotter, *An Essay on Drunkenness*, 57.
34 Axel Gustafson, *The Foundation of Death: A Study of the Drink-Question* (London: Kegan Paul, 1884), 97.

Its implementation proved be difficult. Brian Harrison's research shows that in the early 1800s seamen were given a daily ration of half a pint of a mixture of rum and water in equal measure, and a gallon of beer if considered necessary. The rum ration was halved first in 1825 and then again in 1850.[35] The problem of drunkenness had somewhat abated by the 1870s with greater availability of cleaner water, purer milk and new non-alcoholic beverages such as good quality soft drinks, tea and coffee; emergence of tea and coffee salons; replacement of taverns by temperance lodgings; redundancy of coaching inns with the advent of the railways etc. These did not necessarily reduce the extent of drinking, but seemed to have diminished instances of drunkenness.[36] The Sailors' Homes established in the 1830s in various parts of the world operated on temperance principles, realising that drinking should be phased out rather than prohibited for the movement to be effective.

The British government placed great importance on understanding the impact of alcohol on the health and morality of soldiers and seamen, in recognition of their importance for the empire. A number of parliamentary hearings pertaining to seamen's drinking habits took place in 1834, which provide excellent insights into the place of alcohol in seamen's life. When asked about the character of seamen during his deputation before the House of Commons, Charles Purnell, dock master at Liverpool, replied that the experience of a lifetime spent among seamen told him that few exceptions aside, seamen were a 'degraded, immoral, and irreligious race of men.'[37] The cause of degradation, as he pointed out, was intoxicating drinks, especially ardent spirits. There were plenteous reasons behind the eagerness to drink. Some of the seamen were misled and erroneously advised about the nature of such drinks; some were taught since their youth that drinking liquor and ardent spirits prepared one for a maritime life; while some were often told that consumption of alcohol was beneficial in all environments, hot or cold, and in

[35] Harrison, *Drink and the Victorians*, 321.
[36] Ibid, 321-22.
[37] *Evidence on Drunkenness, Presented to the House of Commons* (London: Benjamin Bagster, 1834), 469.

any situation, health or otherwise. Purnell affirmed that seamen considered the British government's decision to allow serving of a certain quantity of ardent spirit on board ships as legitimation of the benefit of drinking liquor. Contrary to the popular idea that the government encouraged drinking in moderation and drinking was necessary on board ships, he argued that liquor was 'absolute and positively an evil of no ordinary character.'[38] In his opinion, the better treatment of seamen by captains and senior officers on temperance ships showed the lack of liquor on board meant restraint in behaviour among the crew.

Purnell also spoke about his experience in Calcutta and parts of the East Indies. He regretted that the drinking habits of seamen and their misconduct in foreign ports acted as a barrier to the spread of Christianity. He found the behaviour of the Hindus in Calcutta 'beautiful' in comparison with the conduct of British seamen in the port. He was concerned that the behaviour of perennially drunk seamen could hinder the spread of the gospel and proselytising, as Indians could be repelled from embracing Christianity by these specimens of Christians.[39] Seamen were poor ambassadors of morality, particularly due to their drunkenness, and would make anyone doubt the ideals of Christianity. Since both Hinduism and Islam discouraged drunkenness, their followers disliked intemperate people for obvious reasons. It was important that Indians saw seamen as representatives of the virtues of the Empire and Christianity rather than of vice, which could be achieved when 'ardent spirits and seamen [we]re separated'.[40] Responding to a question about how these intemperate seamen influenced other people, he stated that seamen did a great disservice to their families and also the residents of port cities. They could have such immoral influence on their families that their boys could

[38] Ibid, 469.
[39] Ibid, 473.
[40] Ibid, 474.

turn into thieves and their girls into prostitutes. Evidently, Purnell was very much dismayed about seamen, and rarely would anybody in Britain disagree with him.

The disorderly behaviour and ailments resulting purportedly from drunkenness harmed not only seamen but also maritime commerce and warfare. Elsewhere in the Empire, for example in the Chinese Treaty Ports, sailors became a menace for their drunkenness and violence. They often clashed with local Chinese civilians, sometimes resulting in bloodshed and killing. This resulted in confrontations between Chinese and British officials and even temporary suspension in trade. It was observed in 1804 that seamen in Canton were 'exposed to the arts practiced by the Chinese of mixing their liquors with ingredients of an irritating and maddening effect, causing a state of inebriety more ferocious that that occasioned by any other spirit, and leading to riotous scenes of the greatest enormity.'[41] The liquor consumed by seamen, according to an account from the 1830s, consisted of alcohol, tobacco juice, sugar and arsenic. It left one devoid of reason and stirred the 'most frightful paroxysms of rage.'[42] The Chinese city authorities forbade the sale of liquor to European and American seamen in the same decade. The British consuls in Shanghai prohibited the use of firearms after a sailor shot an eight-year old Chinese boy in November 1843, so that the Chinese would not have an unfavourable impression of the British merchant community. They built an ad hoc prison for unruly seamen that was later transformed into a full-scale building.[43] In the 1850s, seamen were strictly prohibited from going on shore or leaving their ships unless accompanied by an

41 "Seamen in the Port of Canton," *The Sailors' Magazine and Naval Journal* 7 (October 1834): 38.
42 Ibid, 39.
43 Evan Lampe, "The Problem of the Sailors: Power, Law and the Formation of the Merchant Community in Treaty Port China, 1842-60," in *Merchant Communities in Asia, 1600-1980*, eds. Lin Yu-Ju and Madeleine Zelin (London: Pickering & Chatto, 2015), 184.

officer. They were allowed to buy food and clothes from only vendors in bumboats, who were instructed to not sell anything to seamen on credit.[44]

Apart from the riotous conduct allegedly resulting from consumption of liquor, seamen were thought to have been debilitated by the adverse effects of spirit. A report from 1824 on the slave trade in the Caribbean Islands mentioned ardent spirits causing inflammation of body and mind as well as 'disease and premature decay.'[45] Surgeons often thought it necessary to report whether their patient was a drunkard, hinting at a correlation between drinking and disease.[46] Since the exact nature of damages to internal organs by alcohol was still not determined, government officials and medical writers emphasised what a drunken stupor and loss of consciousness could do to seamen. In 1843, Robert Clarke, a colonial surgeon in Sierra Leone, wrote that British merchant seamen had fever from drinking ardent spirits. They were drenched in dew while drinking late into the night, and woke up feverish the next day.[47] Alcohol was also supposed to aggravate heatstroke, and expose an unconscious sailor to the risk of drowning in case he passed out on the beach during an incoming tide.[48] Temporary loss of mind due to drunkenness was repeatedly warned against in missionary chronicles through examples such as a drunk seaman slitting another's throat or a sailor's foot injury not healing for months due to alcohol-poisoning of his blood.[49] Thus, alcohol consumption was portrayed as highly detrimental to seamen's health and wellbeing, naval operations, and commercial interests.

44 S. Wells Williams, "Ships Arriving at Whampoa," *A Chinese Commercial Guide Consisting of a Collection of Details and Regulations Respecting Foreign Trade with China* 4th ed. (Canton: Office of the Chinese Repository, 1856), 218.
45 "View of Public Affairs – Domestic," *The Christian Observer* 24, no. 7 (July 1824): 462.
46 John Whitehead Macnee, "Remarks on Beriberi," *The Lancet* 2 (September 15, 1832): 740.
47 Robert Clarke, *Sierra Leone: A Description of the Manners and Customs of the Liberated Africans* (London: James Ridgway, 1843), 76. This view contradicted the idea put forward by Robert Macnish in his highly popular *Anatomy of Drunkenness*, where he wrote that seamen were often seen to lie for hours on the highway, even in winter, without any adverse consequence. Macnish, *The Anatomy of Drunkenness*, 2nd ed. (Glasgow: W.R. M'Phun, 1828), 36.
48 Christopher Munn, *Anglo-China: Chinese People and British Rule in Hong Kong, 1841-1880* (Hong Kong: Hong Kong University Press, 2009), 146.
49 "Mad from Drink – Attempts at Reform," *The Sailors' Magazine and Seamen's Friend* 50, no. 5 (May 1878): 149.

In addition to government officials and religious preachers, an impetus to curb drinking as a social problem came from the ranks of ship captains. Inspired by temperance principles, a number of mercantile ships started observing no alcohol policy on board. Purnell told the parliamentary committee about the existence of 'several' British and 'many hundreds' American temperance ships in the 1830s. He said that contrary to the notion that most seamen were unwilling to find employment in ships that did not allow drinking, many officers and seamen were eager to join temperance ships and asked him to put them in contact with ship captains. He pointed out that the 'gentlemanly' captains, the 'orderly and well-conducted' officers, and the 'temperate and intemperate' seamen serving on these ships were no less efficient than the crew on general ships.[50] The shipping company Cropper, Benson & Co had sent out a temperance ship to India as an experiment. They were apparently so satisfied with the conduct of the crew on board that they were thinking of prohibiting ardent spirit on any of their ships. Purnell mentioned that the number of ships sailing on temperance principles from Liverpool was about 20 to 30 and from Glasgow around 20. He had favourable feedback from his friend, Captain McDowell, who served tea and coffee instead of liquor on his ship *Duchess of Clarence*. He claimed that seamen felt better treated by their superiors on temperance ships.[51] Overall, temperance ships presented the portrait of ideal maritime labour: highly efficient, disciplined, and productive.

The number of temperance ships sailing to India is unknown, but it does not seem to be many as most accounts refer to seamen's drunken brawls and diseases rather than good behaviour. In 1834, Rev. Henry Jeffreys, Senior Chaplain of Bombay, blamed seamen as a poor influence on young, impressionable soldiers during the latter's journey to India and other places. The company of seamen would lure them to drinking, and before the voyage was over,

[50] John Edgar, *Digest of Evidence before the Committee of Parliament*, on the Extent, Causes, and Consequences of Drunkenness (Belfast: Thomas Mairs, 1835), 51.
[51] Ibid, 52.

'these young lads would all crowd around the spirit cask, as naturally and eagerly as a crowd of hungry children coming for milk.'[52] The soldiers would be transformed into drunkards by the end of the journey. After settling in their garrisons, they contrived to visit marketplaces for meeting and drinking with seamen. Despite the Bombay government's best efforts to provide good quality liquor and regulate drinking, soldiers simply could not observe temperance. Even if the change in diet and environment in India reduced the longing for drink among newly arrived soldiers, veteran drunkards in their barracks taunted them about drinking being a signpost of masculinity and friendship and made them drink again. Jeffreys portrayed young soldiers sympathetically and seemed to have given up on seamen, despite his role in the temperance society that came up in Bombay later in 1834.[53] It is reasonable to believe that his colleagues at the temperance society shared his perspective on seamen, since the inaugural address of society repeatedly blamed seamen for bringing disgrace to England and Christianity.

Seamen's vagrancy, crime, and disease

For the British Empire to preserve their image as the vanguard of civilization in the colonies, it was imperative for the colonial state to internally civilize vagrant Europeans. Referring to the composition of the vagrant class, Harald Fischer-Tiné points out that most of them were European seamen – deserter, unemployed, and destitute, some of whom preferred to shirk duty on board ships to be court marshalled and imprisoned, where they would have free food. As Henry Maine, who drafted the first Vagrancy Bill in Britain in 1869, said, vagrancy was a 'grave political danger through the discredit it casts on the entire British race.'[54] The Bill and

[52] "Temperance Societies in India and China," *Alexander's East India and Colonial Magazine* no. 64 (March 1836): 256.
[53] Ibid, 259.
[54] Harald Fischer-Tiné, "Britain's Other Civilising Mission: Class Prejudice, European 'Loaferism' and the Workhouse-System in Colonial India," *The Indian Economic and Social History Review* 42, no. 3 (2005): 315.

the subsequent Act further strengthened the Vagrancy Act passed in Britain in 1824 that gave the police extensive powers to regulate those considered to be 'rogues and vagabonds', 'idle and disorderly or 'incorrigible rogues' and arrest anyone suspected of 'intent' to commit a crime. The Act was later adapted and integrated into the Municipal Corporations Act 1835 and further extended under the Habitual Criminal Act 1869.[55] This allowed the police to intervene and regulate the public and public spaces.

The need for regulation was felt more acutely in the colonies like India. It was said that the lack of companionship and failure to adapt to a hostile climate increased the anxieties of the vagrants and loafers, leaving them little choice but to 'find means of gratification in pleasures which are illicit and pursuits which are debasing.'[56] The taverns and punch houses in Indian port cities were frequented the most by seamen as the anchorages were not far from their location. The visibility of 'poor whites' on the streets was 'politically dangerous.' It was also stated that nothing else could be more saddening and alarming than their presence at the very heart of the colony; it was 'not only a scandal but a danger.'[57] The terrifying notion of the degeneration of the white or the British race, which were not clearly divided at the time, through the disreputable activities of loafers, pervaded government policies, especially after the 1860s. As *Calcutta Review* had asked, '[could] government, really philanthropic and paternal at heart, rest content?'[58] The colonial state grappled with the problem of drunkenness among European seamen much before the drinking habits of other poor whites caught their attention. As Dr James Johnson had written, 'The habit of intoxication which prevails among seamen, is the cause of more sickness and insubordination, (leaving danger out of question) than all the other

[55] David Churchill, *Crime Control and Everyday Life in the Victorian City: The Police and the Public* (New York: Oxford University Press, 2017), 60.
[56] Satoshi Mizutani, *The Meaning of White: Race, Class, and the 'Domiciled Community' in British India, 1858-1930* (New York: Oxford University Press, 2012), 53-54.
[57] Ibid, 55.
[58] "Sailor Life in Calcutta," *Calcutta Review* 40 (1865): 461.

vices and irregularities put together.'[59] The doctor was mindful of seamen's nature as 'passive instruments… that may be moulded to almost any shape, by dextrous management,' 'brittle material… may also be spoiled, or rendered useless,' and 'dangerous to the state, by an injudicious mode of training.'[60] Owing to its behaviour altering and potentially debilitating properties, alcohol became a key issue in the British colonial state's sanitarian agenda for European seamen.

European seamen in Calcutta usually had three varieties of alcoholic drinks: imported liquor, Bengal Rum (local liquor produced in European methods), and country spirits. In the second half of the eighteenth century, a number of riverside pubs served seamen. The main drink, 'bowl punch', was a cocktail of arrack, jaggery, lemon juice and a squeeze of muscadine. A cluster of disreputable taverns were operated by Italian, Spanish and Portuguese people in the Lal Bazar area, colloquially known as Flag Street because of the colourful flags hoisted atop the taverns, bearing their names and motifs. These were sites of trade in stolen and counterfeit food, as well as violent fights and murders.[61] Apollo tavern (1748) was the oldest among these, and Tresham's (1758), the Harmonic (1780), the Union (1788), Wright's New Tavern, the Exchange, the Crown, the Anchor, the Albion (1838), the Aukland (1841), J. Bennit's Tavern (1844) were some of the more popular taverns. The localities were originally respectable, but with the influx of seamen their reputation declined.[62] Lal Bazar extended from Tank Square, later renamed as Dalhousie Square, to the west to Wellington Square to the east. The territory was later rearranged to allocate some of the area under the appellation of Bow Bazar.[63] It was a fashionable area in the eighteenth century, full of shops and boutiques run by

[59] James Johnson, *The Influence of Tropical Climates on European Constitutions* (London: J. Callow, 1815), 518.
[60] Ibid, 511-12.
[61] Tirthankar Roy, *The East India Company: The World's Most Powerful Corporation* (New Delhi: Portfolio, 2016), 130-31.
[62] Bishnupriya Dutt and Urmimala Sarkar Munsi, *Engendering Performance: Indian Women Performers in Search of an Identity* (New Delhi: Sage, 2010), 8.
[63] Edward Steane Wenger, *The Story of the Lall Bazar Baptist Church, Calcutta* (Calcutta: Edinburgh Press, 1908), 387.

Bengali traders, before seamen shifted their preferred haunt from Sobha Bazar to Lal Bazar and ruined its reputation.[64] In the mid-nineteenth century, journalist J.H. Stocqueler noted that the intersection with Jaun Bazar was inhabited by the most debauched and 'totally demoralised' people.[65]

Rev. James Long's article on Lal Bazar in the *Calcutta Review* mentioned Sir William Jones, the philologist and judge, taking a dislike to the 'low taverns' maintained by Italian, Spanish and Portuguese people in 1788.[66] Seamen would 'disappear for days in the nests and fastness of riot and profligacy which are numerous in that vicinity.'[67] In order to retrieve their sailors in time for the outward journey, captains of ships often had to visit these gambling and drinking dens, sometimes accompanied by police constables. The police were always on the lookout for 'houses of ill-repute' that exploited visiting seamen. In November 1832, the magistrate fined Charles Neville, Richard Barrett and Thomas Owen for running unlicensed public houses. On the same day, a police sergeant named Crawford broke into an illegal tavern and arrested its owner, Lazarus, after months of spying on the den and its evasive owner. When brought before the judge, Lazarus denied the accusation, saying that he did not operate a tavern and had little idea when and how a group of seamen occupied his living room. He did not know how the seamen bought food and drink, or how the bottles of alcohol collected by the sergeant from the house came there. The judge found him guilty and fined him 15 rupees.[68] The Christian missionaries in Calcutta launched a crusade against crimping and the Flag Street punch houses. Apparently, their objection had influenced Magistrate D. Macfarlane to restrict the number of licences given to punch house owners. Three individual owners of 'respectable'

64 Major H. Hobbs, *John Barleycorn Bahadur: Old Time Taverns in India* (Calcutta: Thacker, Spink & Co., 1944), 142.
65 J.H. Stocqueler, "Social Life in Calcutta during the First Half of the Nineteenth Century," in P. Thankappan Nair ed., *British Social Life in Ancient Calcutta* (Calcutta: Sanskrit Pustak Bhandar, 1983), 166.
66 Wenger, *Story of the Lall Bazar Baptist Church*, 389.
67 Colesworthy Grant, cited in T.R. Barrett, *Calcutta: Strange Memoirs – Foreign Perceptions* (Calcutta: Deep Prakashan, 2004), 384.
68 *John Bull*, November 4, 1832.

character were to be given the licence to trade at the fee of one rupee per day.[69] Some observers thought the lucrative income from licence fees held the government back from taking strict measures against punch houses.[70]

Observers such as Isaac Henry Townley Roberdeau, registrar to the district judge in Mymensingh in 1805, wrote about 'roaring drunk' sailors going around Calcutta in palanquins.[71] R.G. Wallace, army officer, wrote in 1823 that the effect of alcohol in warm weather exacerbated the misconduct of European sailors and soldiers. The fear of the local police was not daunting enough to curb their escapades, which was made little sense to Wallace. Police constables wielding sabres and staff would break up groups of fighting British seamen.[72] Apparently ship captains had a hard time regulating their crew. During the journey from England to Calcutta in 1831, the crew of *Roxburgh Castle* had so much to drink that the captain suspected they might have been stealing from the daily ration, since there was no means to procure or purchase alcohol during the voyage. The seamen had removed several wooden panels from a wall to enter the store, opened a spirit cask, and taken several gallons of rum. Although a keg containing the stolen rum was found under a sailor's berth, the captain was unable to prosecute them as he could not afford to lose labour for the return journey. The seamen were let off with a warning, and specifically asked to never again enter a liquor store with a flaming lamp, which could have blown the ship apart had it touched any of the barrels.[73]

Two seamen named Robert and Bill Williams were charged with causing an accident while driving a horse-drawn up Chitpore Road in a state of drunkenness. Apparently startled by an approaching bullock cart, they tried to cross it at a fast pace when they should have halted

[69] "Punch Houses," *The Calcutta Christian Observer* 6, no. 61 (1837): 320. Judicial Criminal Proceedings No. 38, 28 March 1835, Government of Bengal, WBSA.
[70] E. Smith, "British Seamen East of the Cape," *The Nautical Magazine and Naval Chronicle* (July 1837): 435.
[71] "A Young Civilian in Bengal in 1805," *Bengal Past and Present* 29, nos. 57-58 (1924): 110-47, cited in *Calcutta in the Nineteenth Century*, ed. P. Thankappan Nair (Calcutta: Firma KLM, 1989), 56.
[72] R.G. Wallace, *Fifteen Years in India: Or Sketches of a Soldier's Life* (London: Longman, 1823), 71.
[73] Barrett, *Calcutta: Strange Memoirs*, 380.

to let it pass. They whipped the horses so vigorously to make them go faster that the animals lost coordination, the seamen lost control, pedestrians ran for cover, and finally, a police constable was run over. When brought before a magistrate, the seamen said they were going at a regular pace and no mishap had happened during their journey, but they were willing to compensate for the accident. The magistrate dismissed the case after lecturing them about driving carriages in congested areas.[74] In a letter to the *Calcutta Christian Observer*, dated 1 July 1837, G. Pickance complained against drunk British seamen rolling about the streets of Calcutta on the Lord's day.[75]

Christian missionaries, European government employees, and merchants organised many discussions about the need for temperance among seamen from the mid-nineteenth century. In the 1840s, in his address to the Calcutta Temperance Society, the Baptist missionary C. Dundas Mitchell presented drunkenness as 'the parent of all suffering, penury and disease, and the frequent source of degenerate life, abandonment of character and penal ills', which often resulted in 'mischievous broils and accidents, and lead to multiplied evils.'[76] In reference to the current medical knowledge about the effect of alcohol on human body, he added that drunkenness disrupted the body's functions, deranged one's mind, caused irritability in the nervous system, and weakened digestion, leading to attacks of 'looseness', vomiting tendencies, dysentery, and problems of liver, spleen and the stomach.[77] Mitchell was highly critical of the 'unthinking mariners' who would not pay heed to the warnings against intemperate drinking in a tropical country. He was convinced that the easy availability of spirits and excessive drinking accounted for the diseases and mortality among seamen in tropical

[74] *John Bull*, November 11, 1832.
[75] "Quarterly Report of the Calcutta Seamen's Friend Society", *The Calcutta Christian Observer* 6, no. 64 (September 1837): 461.
[76] C. Dundas Mitchell, *On Intemperance and European Habits in India* (Calcutta: n.p., 1845), 5.
[77] Ibid, 7.

regions.[78] At the same time, he recognised a seaman's life of hard labour and deprivation of basic requirements such as comfortable sleep. Seamen were allowed a generous ration of grog at the harbour since they needed fluid intake after perspiring all day painting the ship or scraping the deck under the tropical sun. Regular grog drinking lowered one's appetite, caused irritable bowels, and affected liver function, while the 'fiery liquor' available in the market severely hampered biliary secretion.[79] Mitchell's observations were echoed in many lectures, discussions and publications. In 1842, the *Bengal Hurkaru* published a petition asking magistrates to put an end to seamen's daylong revelry that disturbed local residents to no end.[80] As the following statement will show, the criticism of the selling of liquor became more resolute in the 1850s:

> There is a great outcry in Calcutta, and for once a reasonable one, against the grog shops, and the danger of them to the British soldiers and sailors. The spirit is bad, and very cheap indeed, and they have indulged terribly in it. Some got drunk that their medals were robbed from them, and few have died of drink… A good many days ago, the Lieutenant- Governor (of Bengal) was told to enforce the act withdrawing licenses from those shops where people came out drunk, but now a better thing is being done by establishing a Government canteen on the Maidan in tents, where good spirits and tea and coffee and beer can be had, and skittles and games, and newspapers and books for amusement.[81]

Contemporary reports on seamen's drunken brawls and other misdemeanours emphasised the role of alcohol in bringing out a violent form of masculinity in seamen. In his article on seamen's violent behaviour in Gothenburg in the early twentieth century, Tomas Nilson categorised three forms of violence that is pertinent here. The first, ritual violence, refers to the

[78] Ibid, 10-11.
[79] Ibid, 12-13.
[80] "Lol Bazar Revelries," *Bengal Hurkaru* (September 24, 1842), 4.
[81] "Grog Shops," *Calcutta through British Eyes 1690-1900*, ed. Laura Sykes (Madras: Oxford University Press, 1992), 47-48.

practice of two or more people fighting under existing rules to settle scores. The second, performative violence, is about public sentiment transforming into political statements, such as symbolic performance of defiance of what one considers an unjust rule. The third, instrumental violence, was articulated in heinous crimes like stealing from people or killing someone. Nilson finds that the wide range of offences seamen were charged with – drunkenness, indecency, assault, insubordination and violence – represented a behaviour widely accepted as typically working-class.[82] Seamen's crimes in Indian port cities followed the same pattern, as if conforming to a universal behavioural code.

In a report on the inmates of the Bengal Presidency jail, *The Friend of India* foregrounded the impact on alcohol on almost every crime that seamen were in for. As far as the report went: 'The old story—drink. "Got drunk, Sir, and struck an officer." "Got drunk, Sir, and deserted ship." "Insubordination." "With drink?" "yes, a little."'[83] Ritual violence was very common. The merchant seamen in Madras were notorious for carrying sheath knives. The number of murders and stabbing increased so much that the port regulations added a clause holding captains responsible for ensuring none of his crew went on shore with weapons.[84] Instances of performative violence abound in police record, too. To give an example from 1832, about a dozen drunken seamen assaulted two Indian police constables opposite the Writers' Building. They wanted to take the rattan stick from one of the constables, and started beating them when they were refused to hand it over. A third constable who came to rescue his colleagues was beaten as well, and later taken to the Native Hospital. The main perpetrator stumbled against a wall and fell in a drain as the sailors gambolled towards the river. He was detained till a European sergeant apprehended him. The other sailors were summoned to appear

82 Tomas Nilson, "Hey Sailor, Looking for Trouble? Violence, Drunkenness and Disorder in a Swedish Port Town: Gothenburg 1920," in *Port Towns and Urban Cultures: International Histories of the Waterfront, c. 1700-2000*, eds. Brad Beaven, Karl Bell and Robert James (London: Palgrave Macmillan, 2016), 69-90.
83 *The Friend of India*, June 6, 1872, 648.
84 *The Friend of India*, June 24, 1869, 730.

in court. The magistrate ruled the attack on three Indian constables as a petty crime, and let off the offenders on bail.[85] On another instance, shortly after his arrival in Calcutta in 1857, Alexander Douglas Larymore was charged with running over an Indian man on his way to a grog shop with fellow seamen. When Indian constables tried to arrest him, they assaulted the constables and stabbed one of them. Larymore escaped arrest, and when he returned to Calcutta four years later, he started a job as a policeman, his misdeed forgotten and forgiven.[86]

The most infamous instance of instrumental violence was George Nairns murdering a native policeman named Golam Khan at Garden Reach on 27 June 1880. While returning to their ship after midnight, Nairns and his co-workers asked a policeman the way, and then without any reason Nairn pushed the person and cut his throat with a knife. The Jury sent a memorandum to the government for commuting his sentence as he seemed to be good person and the murder seemed to be unpremeditated.[87] The Lieutenant Governor rejected it, saying the murder was brutal and unprovoked. The case caused some excitement in Calcutta as a rare instance of capital punishment given to a European for killing an India, and also speculation whether Nairns' co-workers were leniently let out despite their presence at the crime scene. Nairns confessed to having acting all by himself, while 'half stupefied with drink'.[88]

According to the prosecutor's statement, Nairns, a sailor with the *Slieve Roe*, anchored at the Garden Reach moorings near the P. and O. Company's ghat, came ashore with some of his mates, namely, James and Charles Mackenzie and George Anderson, on Saturday, 26 June. The group was involved in a brawl that left Anderson injured as others escaped. Shortly afterward, Nairns returned to the scene with a sheath-knife borrowed from another seaman and

[85] Barrett, *Calcutta*, 380.
[86] Michael Silvestri, "'Paddy Does Not Mind Who the Enemy Is': The Royal Irish Constabulary and Colonial Policing," in *Ireland in an Imperial World: Citizenship, Opportunism, and Subversion*, eds. Timothy G. McMahon, Michael de Nie and Paul Townend (London: Palgrave Macmillan, 2017), 188.
[87] "Murder by a Sailor at Calcutta," *Morpeth Herald*, July 17, 1880, 6.
[88] "The Murder by a Sailor at Calcutta," *Liverpool Echo*, July 26, 1880, 4.

a marlinspike hidden underneath his shirt, along with his colleagues. Anderson had by then headed to the ship. On their way back, the group of seamen found the gate of the P. and O. Co. closed. They saw a native policeman named Golam Khan standing nearby. While James MacKenzie and Gilbert went to speak to him, Nairns suddenly hit him with a stick, and allegedly reached for his knife. His companions started running and were soon caught up with by Nairns. Once they swam aboard the ship, Nairns confided to them having attacked the 'coolie'.[89]

In his statement, George Anderson told the court having visited Shaw's House to drink, then a bumboat-man's house, thereafter another public house and finally they met with some prostitutes. The scuffle ensued when the owner of a looking glass that one of the seamen tried to steal gathered a crowd and chased the latter. James MacKenzie testified that Nairns admitted to him having 'finished that fellow or coolie'. Edward Bousseney admitted to have seen Nairns strike the constable. Every seaman and the ship's captain told the court that Nairns was a quiet and sober person. The jury passed the judgment of guilty, with a strong recommendation for mercy. As the judge sentenced Nairns to death, he was executed on 23 July 1880.[90] The incident was portrayed in most newspapers as an example of how alcohol can lead a mostly sober person astray. As a correspondent wrote, his friends might be consoled by the fact that he was drunk when he committed the crime.[91] Indian newspapers also discussed the racial tension around the jury's mercy plea and the judge's decision to overturn it saying he would not make exception for a European.

It was commonly believed that long and difficult sea voyages caused seamen to abandon every pretence of discipline during shore leave. The police frequently received

[89] "The Murder by a Dundee Sailor at Calcutta," *Dundee People's Journal*, August 7, 1880, 6.
[90] Ibid.
[91] Ibid.

complaints about sailors' drunkenness, assault, theft, refusal to work, absence without leave, inability to pay fines, suspicious loitering, rioting and indecency.[92] A number of Europeans in Calcutta considered it wrong to criticise all seamen as a "drunken, reckless, mutinous lot", since it was the difficult circumstances of seafaring that drove them into disreputable activity.[93] It is hard to determine the actual number of 'criminal' sailors, as police records are sparse, and numbers were often inflated. Major G.B. Malleson referred to a lock-up register with 365 cases of seamen's drunkenness and confinement. Of these, 186 were living ashore – nearly three per cent of the off-duty sailors. Many among them were charged with assault but only 35 were imprisoned. Repeated complaints about seamen's behaviour served the double function of maligning them and making people sympathetic to their problems.[94] Several decades of court records indicate that many of these crimes were committed under the influence of alcohol. There were also complaints that the Government of India had not done enough to stop it. Juries in Calcutta regularly pleaded to prohibit this 'evil' on the rise in the streets and markets.[95] Some surgeons in the Indian Medical Service suggested that consumers of intoxicants containing certain narcotics were more likely than others to commit a crime. Thus, the ill effects of adulteration of liquor upon seamen's health and behaviour became a contentious issue.

Adulteration and the fear of poisoning

Christian missionaries in India were critics of poor quality and adulterated liquor. The Baptist missionary John Statham wrote that in the 1820s, keepers of taverns and punch-houses in Bengal often sold 'damaged' and 'rejected' ale salvaged from shipwrecks and factories. Those unable to afford prime ale priced at a rupee a bottle, soldiers and seamen in particular, bought

92 "Sailor Life in Calcutta," 462-3.
93 "Sailor Life in Calcutta," 453.
94 Ibid, 462-64.
95 "Food and Drink in Calcutta," *The Friend of India*, June 2, 1864, 2.

this low-quality liquor at 4 annas or 6 pence a bottle. The liquor, which tasted worse that vinegar, often made them ill, especially with acute dysentery and cholera morbus. Many consumers died before they were taken to the hospital.[96] A bigger challenge for the government was, however, regulating the manufacturing process and suppressing the adulteration of liquor. The latter acquired a racial dimension in India, where the discourse of adulteration was centred on the fear of 'deceitful', 'cruel', and 'dangerous' Indians getting innocent Europeans drunk and stealing their possessions. This narrative recast European seamen as victims of colonised subjects. Seamen's crimes, including theft and murder, were often attributed to drinking adulterated or drugged liquor rather than lack of morality. Similar to the stigma of the tea business in China as the 'real hotbed of adulteration,' alcoholic drinks in India caused great anxiety among the British.[97] The Chinese people were considered dirty, lazy, dishonest and untrustworthy much like Indians. In Singapore, it was alleged, seamen were given drugged liquor in brothels and taverns, and then robbed and assaulted. Singapore had nearly 200 disreputable taverns and a multitude of foreign prostitutes till 1863, when the Bengal government, which ran the administration for Singapore at the time, permitted the city's authorities to close down undesirable taverns.[98]

The ailments caused by adulterated liquor were a focus of the racialised fears and anxieties of Europeans in a foreign land. In some reports on drunken brawls, seamen were exonerated as uneducated men for whom alcohol was an escape after weeks of hard physical labour. These reports portrayed crimps and tavern owners not as elements in the sailortown economy, but as deceptive persons who preyed on gullible seamen. Michael Fisher has pointed out that British tavern keepers, pawnbrokers, sharpers, and prostitutes would do the same to

96 John Statham, *Indian Recollections* (London: Samuel Bagster, 1832), 20.
97 Erika Rappaport, *A Thirst for Empire: How Tea Shaped the Modern World* (Princeton, NJ: Princeton University Press, 2017), 121-22.
98 Turnbull, *A History of Modern Singapore*, 81.

lascars in their depots in London.[99] The plight of lascars at the hands of Europeans is rarely documented unlike those of the European seamen in India. Such deliberate racializing of victimhood reflected the British government's relative lack of concern with Indian labourers, to the extent of making them 'invisible'.[100] The writings on seamen's ailments from adulterated drinks drew the colonial state's attention to the quality of liquor sold at local grog shops.[101] The authorities too were influenced by the apprehension of poisonous local liquor and death by poisoning, considered to be a symbol of Indian vengefulness and cowardice.

Talking about the problem of adulteration in his 1820 book, chemist Fredrick Accum (1769-1838) discussed how some dealers adulterated food and drink items with harmful substances.[102] 'There is death in the pot', thus began his description of how liquor manufacturers and vendors mixed the poisonous extract of Indian berry or Cocculus indicus (popularly known as the black extract) with malt liquor. The process made the drink more intoxicating at little additional cost. Sometimes they used a substance called multum, comprising of gentian root, liquorice juice and the black extract.[103] The practice of adulterating wine with lead, which helped stop the process of acescence or souring and maintained the transparency of white wine when it could become turbid, was very harmful to health. Even a small amount of lead could slowly poison a person to death, prompting Accum to call the drink frauds murderers.[104] Since most poisoning worked slowly, the frauds did not cause suspicion until a number of people would die. The gin shops and workshops of wine and spirit dealers

99 Michael H. Fisher, "Making London's 'Oriental Quarter'," in *Subalternity and Difference: Investigations from the North and the South*, ed. Gyanendra Pandey (London and New York: Routledge, 2011), 85.
100 Gopalan Balachandran, *Globalizing Labour? Indian Seafarers and World Shipping, c. 1879-1945* (New Delhi: Oxford University Press, 2012), 10.
101 G.B. Malleson, "The State of the Sailors in Calcutta," British Library IOR: P/437/29, Government of India, Home Department Proceedings, Marine 1866, No. 18.
102 Fredrick Accum, *A Treatise on Adulteration of Food and Culinary Poisons, Exhibiting the Fraudulent Sophistications of Bread, Beer, Wine, spirituous Liquor, Tea, Coffee… And Methods of Detecting Them* (London: Longman, 1820).
103 Ibid, 6.
104 Ibid, 102-3.

were known to be 'the laboratories of disease and of premature death.'[105] The 'seductive liquor' left its consumer 'polluted, disgraced and lost to society… impair[ed] the physical strength of the country, and induce[d] incorrigible habits of vice and intemperance.'[106]

Although most were not, some of the additives mixed with liquor to enhance its taste, appearance and strength were toxic and jeopardised the health of the consumer. Spirits were monitored more than any other form of liquor on account of their higher alcohol content and level of intoxication. They were also more regularly adulterated.[107] The licensing legislation enforced in Britain in 1828 sanctioned manufacturers caught adulterating liquor with cancellation of their license.[108] Yet, as Michael Donovan, professor of chemistry, noted in 1830, manufacturers of porter used Cocculus indicus, aloes, wormwood, quassia, gentian, and other substances to adulterate the liquor. Brewers used to store liquorice, treacle, mucilage of flax seed, potash, lime salts and other articles before the use of anything other than malt and hops in liquor was banned. The *Dictionary of Chemistry* made a list of such substances seized from various beer brewers in London in 1868 included multum, colouring, honey, hartsthorn shavings, Spanish juice, orange powder, ginger, grains of paradise, quassia, liquorice, caraway seeds, copperas, capsicum and mixed drugs. Addition of sulphuric acid added taste to over fermented beer, and picric acid and Cocculus indicus added bitterness to beer.[109] In India, the ingredients used for adulteration were slightly different, depending on the materials available locally.

Writing about Bombay in 1834, Jeffreys stated that soldiers mixed chillies and other hot stimulants in liquor to increase its strength.[110] In February 1834, Dr R.N. Burnard of the

[105] Ibid, 8.
[106] Ibid, 10.
[107] Thora Hands, *Drinking in Victorian and Edwardian Britain: Beyond the Spectre of the Drunkard* (Basingstoke: Palgrave Macmillan, 2018), 50.
[108] Greenaway, *Drink and British Politics since 1830*, 12.
[109] H.B. Cornwall, "Adulteration of Beer," *Public Health Papers and Reports* 10 (1884): 109-10.
[110] "Temperance Societies in India and China," 256.

Benares City Hospital reported about 70 men falling sick after drinking at a native liquor shop. He described the preparation of liquor as he witnessed on his visit to the particular shop. He saw a mixture of mowah flowers, molasses, and water being stored in large earthen jars for seven or eight days for fermentation. Once the froth rose above the top of the steeping jars, the mixture was shifted to a distilling pot placed obliquely on a furnace. Another jar attached to the top of the jar acted as a condenser. The distilled liquor, called *phool*, reduced to about four-fifth of the original volume, was poured to smaller pots through hollow bamboo stems, where it was combined with two-third water. Thereafter, shop owners surreptitiously mixed various substances with this liquor to enhance its strength, especially poisonous *singhera* and *buch-nag* roots, without the knowledge of customers.[111] It can be surmised that the practice of adding plants extracts or other supplements was a standard method of making liquors stronger was followed throughout India. This unsafe, 'poisonous' additive would classify the method as adulteration, though Burnard did not use the term.

As David Arnold points out, the European anxiety regarding being poisoned by disgruntled Indian and Eurasian subordinates, associates, and servants fomented a 'poison panic' in the mid-nineteenth century.[112] In his introductory lecture on medical jurisprudence in 1851, Professor A. Blacklock said that British surgeons knew the names but little about the nature of the lethal poisons used by Indians. He thought certain poisons were preferred in specific locales, such as arsenic in Madras and opium and datura in Bombay and Bengal. Some of these poisons eschewed detection as they induced symptoms mimicking those of common diseases. He made a very important assertion that since the people of Europe and India had different customs and habits, one's knowledge about crimes in the West would not help to

111 R.N. Burnard, "Case of Extensive Poisoning with Singhera," *London Medical Gazette* (June 18, 1836): 447-49.
112 David Arnold, *Toxic Histories: Poison and Pollution in Modern India* (Cambridge: Cambridge University Press, 2016).

solve problems in the East.[113] In 1857, as 30 or 40 seamen from a battleship in Calcutta fell ill at the same time, they suspected their alcohol supplier, a Bengali tavern owner, of poisoning them, and hanged him from Kidderpore bridge.[114] Indians were not the only culprits of poisoning with an intention to murder. In 1858, the Bombay police apprehended the chief mate of the British ship *Ivanhoe*, Henry Watson, for mixing arsenic to a bowl of soup meant for Captain Thomas Cooper. He wanted to avenge his suspension due to neglect of duty.[115] The report of this incident did not make any patronising remark such as a crime done under the duress of a tropical climate or the corrupting influence of the 'natives,' but medical writings on poisoning in India hardly ever cited cases with European perpetrators.

In his 1854 book, Michael Kirwan Joyce of the Bombay Police noted that most liquor shops were located in Dobee Tank and Duncan Road. Scattered over the area rather than in a cluster, these shops were difficult to raid. Many of these shops employed discharged European soldiers as unwaged crimps or 'catchpoles,' whose livelihood was the 'plunder of the unfortunate wretches' such as seamen. The liquor shops also employed abandoned women as domestic servants and prostitutes, who lured sailors into their establishments (called 'Tereerams'), drugged them with adulterated liquor, and looted their belongings. [116] Joyce argued that adulterated liquor was responsible for numerous deaths. Many licenced shops sold seamen special concoctions named 'Sailor Jack' or 'Tom's Brandy', which were prepared by mixing strong arrack with the 'poisonous juice' of datura, the juices of tobacco and chilli, and opium. The beer on sale, priced at 50 paisa per bottle, was a mixture of beer, water, a concoction of vinegar, soap nuts, sugar and soda. The so-called 'wine', which cost a rupee a bottle, was a

113 A. Blacklock, "Introductory Lecture on Medical Jurisprudence," *Madras Journal of Medical Science* 1, no. 1 (October 1851): 31.
114 Hobbs, *John Barleycorn Bahadur*, 189.
115 "Fort Police Office," *The Times of India*, September 29, 1858, 613.
116 Michael Kirwan Joyce, *An Exposure of the Haunts of Infamy and Dens of Vice in Bombay* (Bombay: Bombay Gazette Press, 1854), 1.

combination of vinegar, sugar, Parsee Brandy, and a decoction of log-wood.[117] The abundance of liquor shops – 422 including three hotels, 13 taverns, 172 retail and 234 toddy shops – compounded the problem.[118] The government did not have the resources to regulate this many shops.

At this time, in Britain, a campaign against adulteration of food and drink was started by Thomas Wakley, surgeon and editor of the medical weekly, *The Lancet*, and his colleagues. They established the Analytical Sanitary Commission in 1851 under the supervision of Arthur Hill Hassall, chemist and food safety specialist (1817-1894), and Henry Letheby, chemist and toxicologist at London Hospital (1816-1876). Although by no means the first extensive examination of adulteration, the Commission carried out the most comprehensive and scientifically strong survey of its time, having examined about 25,000 food and drink samples between January 1851 and December 1854. The report, published in *Lancet*, attracted much public attention, allegedly on account of the detailed descriptions of death, poisoning, paralysis or any illness caused by adulterated drinks.[119] The British parliament at this time became highly concerned about the quality of liquor sold to the public. A Select Committee established in 1855 to address this problem recommended immediate action against adulteration for protecting public health, revenue from alcohol, the interest of honest merchants and consumers, and especially public morality—so as to prevent depreciation of 'the high commercial character of this country… both at home and in the eyes foreign countries…'[120] However, many liquor

[117] Ibid, 3.
[118] Ibid, 4.
[119] Sandra Morton, "A Little of What You Fancy Does You… Harm!! (with Apologies to Marie Lloyd)," in *Criminal Conversations: Victorian Crimes, Social Panic, and Moral Outrage*, eds. Judith Rowbotham and Kim Stevenson (Ohio: The Ohio State University Press, 2005), 165-68.
[120] Arthur Hill Hassall, *Adulterations Detected or Plain Instructions for the Discovery of Frauds in Food and Medicine* 2nd ed. (London: Longman, Green, Longman, and Roberts, 1861), 37-39.

manufacturers and retailers claimed that adulteration was harmless and served consumers better by keeping prices low.[121]

The publication of Dr Norman Chevers's pamphlet on the health of European seamen in Calcutta, which was originally delivered as a talk to an audience of European seamen at the Floating Library on board the *Lady Canning* ship in 1864, grabbed the Bengal government's attention. Chevers remarked that the principal causes of disease and death among seamen were poor diet and ventilation on board ships, warm climate, and, 'perhaps, above all, drunkenness and other evil habits when on shore.'[122] In his opinion, abstinence could reduce mortality among seamen to two-thirds of the present rate. The 'wild drinking of liquid fire' was more fatal for those drinking after a hiatus or a period of working on temperance ships.[123] Chevers thought that alcohol aggravated existing ailments and impaired consciousness, often leading to death. Many of his patients died after a drinking binge following their discharge from hospital. He remarked that seamen should be healthy and convivial, and British seamen ought to be 'one of the healthiest of mankind'.[124] After his pamphlet was published, government officials started maintaining registers for seamen and enacted new sanitary regulations on the basis of accumulated data. As part of its welfare programme, the Sanitary Commission of Bengal recommended providing seamen with comfortable accommodation and amusement.[125] Since the government did not realistically expect abstinence from seamen, they monitored the sale and consumption of liquor, particularly adulterated liquor.

Chevers published more studies of poison in his articles and subsequent books on medical jurisprudence. Arnold states that in his mission to delineate all the exotic factors that

121 Chris Otter, "The Vital City: Public Analysis, Dairies and Slaughterhouses in Nineteenth-Century Britain," *Cultural Geographies* 13, no. 4 (2006): 520.
122 Norman Chevers, *On the Preservation of the Health of Seamen* (Calcutta: Military Orphan Press, 1864), 3.
123 Ibid, 36.
124 Chevers, *On the Preservation of the Health of Seamen*, 1.
125 "Sailor Life in Calcutta," 466.

made ‘poisoning emblematic of India and the dark, lurking danger to British rule,’ Chevers collected massive data the varied deadly plants available in the hot and moist climate of Bengal and the ‘unrestricted freedom’ to purchase nearly all the different forms of mineral and vegetable poisons that are easily accessible in the local markets.[126] Chevers also described the habit of daily consumption of opium and hemp and the effect of such narcotic drugs. He too was concerned about the practice and preference for ‘secret poisoning’ among Indians whom he referred to as ‘timid people’ – more inclined to deceit while committing a crime. His view was echoed by A.L. Mitchell, Seamen’s Chaplain in Calcutta, who portrayed crimps as ‘harpies’ who enticed seamen to consume drugged liquor. The sources of Mitchell’s information were convalescent seamen, who presented themselves as helpless, ‘unfortunate victims’, and ‘dupes of conspiracy’ of crimps.[127] According to an observer, seamen’s health broke down “from the effects of methylated spirits administered under the name of gin or whiskey, etc., by opium, or cocculus indicus in the name of beer, and in addition, by some loathsome complaint that may and probably will incapacitate him after a day or two at sea.”[128]

The major agents of adulteration in Bengal were generally ‘fiery hot’ red pepper and other ‘tongue-rasping’ and ‘bowel-scorching abominations’, and in specific cases strong narcotic drugs such as datura, cocculus indicus, gunjah.[129] Investigations into the sale of adulterated liquor to poor Europeans, especially sailors and soldiers, in Lal Bazar, Bow Bazaar, Radha Bazaar and College Street, revealed that many shopkeepers sold ‘native’ liquors, or what was described by Chevers as ‘bazaar sharab’ (such as *Mudut* and *Doasta*), in English bottles with labels such as ‘Old Tom’ and ‘Exshaw’s Brandy.’[130] Better quality liquors such as ‘Exshaw’s first class Brandy’ were sold to Europeans at higher than the market rate. Chemical

126 Arnold, *Toxic Histories*, 102.
127 Seamen’s Chaplain, A.L Mitchell, to Major Malleson, “The State of the Sailors in Calcutta”, xiii.
128 *The Nautical Magazine* (June 1871): 385.
129 Chevers, *On the Preservation of the Health of Seamen*, 41.
130 Ibid, 65.

analysis of liquor in Calcutta in 1857-58 found that it was diluted rather than drugged; and it was less its quality than the quantity of consumption that resulted in drunkenness and associated misdeeds.

According to Chevers, good quality alcohol was so difficult to obtain in Calcutta that a 'sober man' (ostensibly a British sailor) could hardly ever find proper beer.[131] Chevers argued that regulation of alcohol could reduce seamen's mortality by a third. He speculated that equal duty on rum and *doasta* would increase the sale of rum. All *doasta* in Calcutta was to be distilled under strict surveillance. Low quality, 'poisonous' liquor continued to be sold unabated despite adverse publicity. In G.B. Malleson's report on the state of seamen in Calcutta, Dr C. Fabre-Tonnerre, the municipal health officer in Calcutta, was quoted as saying that Magistrate Macleod Wylie had reduced the sale of 'noxious liquor' in the late 1850s by ordering raids on public houses and withdrawing licences from those selling tainted liquor.[132] Disease, destitution and crime were thus intermingled in medical treatises. A number of prominent people, organisations and publications supported the campaign against adulterated liquor. Merchants were ordered to destroy food and drink on the health officer's order.[133] *The Indian Year Book for 1862* praised the newspaper *The Friend of India*, for its 'good service by directing attention to the alarming increase in the consumption of spirits'. It quoted the following from the newspaper:

> As if it were not tough that drunkenness should be the national crime of the English at home, and should only too unmistakeably characterise her sailors and lower classes abroad, it would seem as

131 Ibid, 37.
132 Malleson, "The State of the Sailors in Calcutta", 2.
133 "Abstract of the Report of the Health Officer of Calcutta for the Year 1866," *Report on Measures Adopted for Sanitary Improvements in India during the Year 1868, and upto the Month of June 1869* (London: Eyre and Spottiswoode, 1869), 72.

> though the Government of India were determined to make their heathen subjects and their own soldiers as bad as the people of the mother country…[134]

A correspondent in *The Friend of India*, convinced that a sailor almost instinctively cast anchor in a grog shop on coming to shore, wrote that seamen could be stopped from drinking, but the government could ensure they were not drinking poison.[135] Chevers recommended appointing a competent official to inspect every ship arriving at the port and install taps to sell good quality spirits, wine, beer and other drinks to sailors. The Superintendent of the Reserve Force reported in 1866 that seamen could obtain liquor at least till 10 pm. The quality improved after 'second class' hotels were established in Cossitollah, whose alcohol better than those obtained from prostitutes and agents. He added that Indian liquor sellers in Radha and Lal Bazar manufactured liquor from spirits of wine.[136] The Master Attendant, Captain Reddie, wrote that men and women peddled liquor of an unknown variety along the stretch from Garden Reach to the Custom House, the area frequented by seamen.[137] The Firebrand Whisky, despite its taste of 'hot brass nails and green chillies,' was a favourite among seamen.[138] Since European sailors would not stop drinking, alternative steps were taken to ensure 'none but pure alcohol would be sold'. Additionally, the municipal authorities tried to shut down shops that sold the cheapest possible liquor, saying that 'sober men' should be provided the opportunity to buy 'well-made coffee', 'good soda water', 'ginger-beer' and 'lemonade' at proper rates.[139]

Borradaile, Schiller, and Co., a major partner in the Port Canning Land Investment, Reclamation, and Dock Company in Calcutta, suggested banning and penalising sellers of 'that most intoxicating drink, the Indian Rum and Doasta.' They supported the reduction of duty on

134 John Murdock ed., *India Year-Book for 1862* (Madras: Graves, Cookson & Co, 1863), 117.
135 "Our Sailors," *The Friend of India*, April 14, 1864, 399.
136 Malleson, "The State of the Sailors in Calcutta", 11.
137 Reddie also drew a correlation between heat and drunkenness. He wrote that not only did the small cloth caps worn by sailors offered little protection from the sun, increasing the risk of sunstroke, exposure to heat increased the felling of thirst and made the sailor drink whatever given to them. Ibid, 11.
138 Hobbs, *John Barleycorn Bahadur*, 321.
139 Chevers, *On the Preservation of the Health of Seamen*, 51.

European drinks to make their price competitive in the local market. The Municipality adopted Fabre-Tonnerre's suggestion of registering all seamen on arrival in Calcutta port and obtaining from the captain of each vessel a list of the number and cause of casualties on board.[140] The government closely monitored inquiries made by Chevers and other officers about 'unwholesome food and drink'. A special committee was appointed to assist health officers to systematically inspect food and drink sold in the public markets, and confiscate 'unwholesome articles.'[141] However, such measures were not uniformly successful. In 1875, the samples of important brandy collected during a raid was proved to be a combination of spirit and other substances but not brandy.[142] Later, the government refused licences for German spirits that were sold under the labels English Gin, French Brandy and Scotch Whiskey with added flavour and colour.[143]

The Government of Bombay's Abkari Act in 1878 sought to implement a new system of stopping adulteration of liquor in Bombay. Indra Munshi Saldanha writes that British liquor policy in India was aimed at generating revenue and regulating intemperance.[144] Limiting the production of locally produced liquor by restrictive licensing helped the colonial state track the points of production and collect revenue systematically. The Act defined liquor as spirits of wine, spirits, wine, toddy, beer and all liquid containing alcohol; toddy as fermented or unfermented juice extracted from coconut, brab, date or any kind of palm tree; intoxicating drug to include ganja, bhang and drinks prepared from hemp, grain or substances not included in the term liquor; and manufacture as every natural or artificial procedure of preparing and

140 Malleson, "The State of the Sailors in Calcutta", 3.
141 Chevers, *On the Preservation of the Health of Seamen*, 63.
142 Revenue Proceedings No. 33-34, April 1875, Miscellaneous Revenue Department, Government of Bengal, WBSA.
143 Proceedings No. File E 1-R/1 (4 No. 1-2), October 1894, Financial Department, Separate Revenue, Government of Bengal, WBSA.
144 Indra Munshi Saldanha, "On Drinking and 'Drunkenness': History of Liquor in Colonial India," *Economic and Political Weekly* 30, no. 37 (September 16, 1995): 2323.

enhancing any spirituous, fermented or intoxicating liquor or drug.[145] It would penalise licenced liquor manufacturers for contravening approved methods of distilling alcohol and allowing drunkenness in the premises of liquor shops and distilleries. Adulteration of liquor for the purpose of increasing its intoxicating quality or strength, selling, storing or circulating country liquor as European or foreign liquor, tinkering or falsely packaging country liquor with trademarks and bottles associated with European liquor with the intention of deceiving or injuring customers, were punishable with a fine of up to 500 rupees or imprisonment up to three months, or both.[146] The success of these measures cannot be determined.

The question of whether drunkenness as a disease, or a vice, or both, continued to be debated late into the nineteenth century. In order to get to the root of this question, Rev. John Todd made distinctions between various stages of drunkenness. Drinking in excess after one's initiation to intoxication was a vice and not a disease. However, when an individual depended too much on liquor, such 'habitual drinking' indicated a diseased bodily system. He wondered if this stage of submitting oneself to drunkenness was a result of a 'diseased brain' or a moral problem. Hence, the need to understand whether the act was a 'crime' or rather a 'misfortune'. He argues that this can hardly be a combination of both, "physical and moral, both necessary and voluntary, both criminal and innocent." The doctors who specialised in treating drunkenness would call it a disease. A paper read before the British Medical Association advocated for dipsomania or the overpowering affinity to drinking being a disease. A physician of Glasgow remarked before a committee of parliament that consumption of alcohol and other forms of spirits over an extended period of time resulted in certain kind of structural changes, especially in the nervous system. Those involved in reforming drunkards, managing Sailors'

145 "Abkari Acts of the Government of Bombay in Council 1878," *The Bombay Code* (Calcutta: Office of the Superintendent of Government Printing, 1880), 570.
146 Ibid, 582.

Homes, or in temperance societies refuted this idea, maintaining that drinking and drunkenness was a symptom of being unreligious, immoral and sinful.[147]

Writings from the late nineteenth century showed seamen's condition to have hardly changed. Missionary accounts in particular betrayed a sense of disappointment with the limited success of preaching and social work. If anything, the number of seamen visiting Calcutta diminished after the opening of the Suez Canal in 1869, which shifted the bulk of maritime trade to Bombay. The opening of the Kidderpore docks in 1870 led to the haunts of seamen relocating southward. A sailor was no longer a common sight in Bow Bazar in the 1870s, whereas the locality abounded with disreputable drinking saloons and chop-houses till the mid-nineteenth century. The punch-houses in the area were then replaced by grog-shops and boarding houses for seamen.[148] The lodges employed a 'runner' who met seamen after their ship anchored at the harbour or when they came ashore, coaxed them to drink excessively or had them drugged, and sometimes robbed. The incidence of drunken brawls abated after 1875 as there were no longer any grog-shop beyond Phear Lane. Earlier fights would get so bad that it often took up to three European sergeants to restrain a drunken sailor.[149] As Rudyard Kipling wrote:

> … the seductions of the Howrah boarding-houses and the delights of Colootolla. If Fate will, "Nightingales" will know them no more for a season, and their successors may paint Collinga Bazar vermillion. But what captain will take some of these battered, shattered wrecks whose hands shake and whose eyes are red?[150]

The Adelphi hotel became a refuge for ship captains around this time. Acquired and run by two seamen named Broad and Mackinnell, the hotel turned into the headquarters of captains in the

147 John E. Todd, *Drunkenness a Vice, Not a Disease: A Paper* (Hartford, Conn: Case, Lockwood and Brain, 1882), 2-3.
148 Wenger, *The Story of the Lall-Bazar Baptist Church*, 389.
149 Ibid, 390.
150 Rudyard Kipling, *City of Dreadful Night* (New York: Alex Grosset, 1899) 44.

1880s when ships were stuck at the port waiting for cargo for months. To ensure their comfort, the hotel provided excellent food and bar services along with two billiard tables and a skittle alley. Most resident splurged money at the bar and dining room that could have come from 'underpaid, half-starved sailors.'[151] An account from 1886 points out that apart from Flag Street, the dens of 'vice' were still found in Emambaug Lane, Free School Street, Wellesley Street, Fenwick's Bazaar, Meredith's Lane, Chunam Gully and other places. Crimps cleaned out the savings of seamen during their sleep, leaving them little other their red jacket to be pawned for money:

> Turn we now to chop-houses in Lalbazar. These are generally kept by sailors, who, tired of roaming over the world, make up to some unfortunates in the black slums who they have known [made proposals of marriage to Indian prostitutes] and set up chop houses or taverns with the money which the latter had hoarded. These places are frequented by soldiers, sailors, runners and loafers. Some of them have a small room in the back, in which a great deal of vice and debauchery is perpetrated, by means of the miserable girls of the third class [lowly prostitutes] who are sent for by the landlady, when required, and who are also expected to aid the owner of the house in the sale of liquors, both by inducing sailors and other visitors to drink, and by accepting whatever drink may be offered them. A girl in one of these dens earns but one shilling from each visitor as her honorarium, for which miserable pay she is content to surrender her person, and that, to obtain a tolerable subsistence, she must take three or four at least of such lovers per night.[152]

In the 1880s, the colonial state tightened its grip on the source of alcohol for seamen on shore. The decision to close all liquor shops in Calcutta on Sundays was welcomed by almost resident of the city, if the elated letter-writers to *The Friend of India* are to be believed. One of them wrote, 'the most disgraceful drunkenness among the sailors takes place on Sunday.'[153] J.M.

[151] Hobbs, *John Barleycorn Bahadur*, 285.
[152] Robert Kerr, *The Social Evil in Calcutta*, 3rd ed. (Calcutta: T.S. Smith, 1886).
[153] "Sunday Closing in Calcutta," *The Friend of India*, August 27, 1881, 906.

Thoburn and G. Mitra thought the closure will help keep the city quiet and orderly, free from the noisy revelry of drunk seamen.[154] One G.A. Baugh wrote that the Government should try to reform rather than restrain seamen, and must not label alcohol as a fount of problems since some forms of alcohol served as medicine.[155] He suggested starting more coffee rooms for seamen as some missionary organisations had started doing. Nevertheless, taverns such as the Flags of All Nations, the House of All Nations, and Homeward Bound were still more popular among seamen among coffee houses. The Checkers pub, managed by a Swedish who had the nickname Draughtboard Dutchy, was known as a site where English seamen regularly brawled with Scandinavian and German seamen.[156] Apparently, keeping seamen off the bottle was the main reason for closing liquor shops for all. From a respectable neighbourhood with elegant shops in the eighteenth century, Lal Bazar had been transformed into a den of disease and debauchery by the late nineteenth century almost entirely on account of the presence of European seamen. Around the same time, the notion of racial degeneration gained more currency as a scientific opinion in Britain. The fear of the combined ill effects of drunkenness in a warm climate on the mind and body of European seamen proved to be far more disconcerting for the colonial state than merely the crimes or misconduct by seamen.

Conclusion

This chapter examined how the colonial state addressed European seamen's 'drink problems' by regulating the distillation and sale of alcohol. Indiscriminate drinking was thought to not only aggravate the health problems caused by disease, poor diet, and change in climate, but also debase seamen's body and morality. Their diseased and debilitated bodies foregrounded

154 "Closing Liquorshops of Sundays," *The Friend of India*, September 3, 1881, 934.
155 Ibid, 935.
156 Stan Hugill, *Sailortown* (London: Routledge and Kegan Paul, 1967), 314.

the vulnerability and incompetence of European physicality, and diminished the visage of imperial power. Seamen's inclination to mingling with Indians and committing petty crimes under the influence of alcohol threatened to deflate imperial prestige. Therefore, the weak body and improper behaviour of these seamen were discomfiting for the claim of the British Empire to represent the highest standard of modern civilisation. Christian missionaries and the colonial government in India worked to redeem these seamen and the British Empire through a combination of moral and legal regulations. The primary object of their reform measures was to reduce drinking and drunkenness among European seamen in the naval and merchant services. The colonial state's key concern was drunkenness rather than drinking, and adulterated liquor w\as a secondary problem. Sanitary reforms in regard to regulating drunkenness served to protect both British racial superiority and commercial interests.

The chapter has also pointed out that race was an important feature in the depictions of European seamen's experience in India. Christian missionaries and news reporters portrayed them as innocent victims of a challenging climate and local dupes. The clergy were highly critical of Indian crimps, while not mentioning the presence of English and American crimps as frequently. In contrast with missionary records, administrative documents show that most of the tavern owners in the Calcutta sailortown were English, who were often charged with running unlicensed premises and selling adulterated liquor. Apparently, the racial nature of missionary and journalistic writings was largely absent in colonial records. The colonial state was undoubtedly aware of its vulnerability against an unfriendly colonised population. Some judges were allegedly lenient towards European seamen charged with attacking or stealing from Indians. But, the occasional disciplining of seamen, the hanging order, the regulation of their drinking habits, and determining what counted as legitimate brewing processes and selling mechanisms, enabled the creation of the state's medical power. The authority the colonial state exercised over recalcitrant Europeans shows that the colonial experience was not racially

homogenised. Seamen were seen as expendable labour despite the uproar for their safety. It was mainly when they were confronted with diseases like cholera, which threatened to tear down the imperial edifice, that the colonial state strengthened the defence of seamen. When links were established between low quality and poisonous liquor and cholera, the consumption of alcohol and the squalor of the marketplace became even more serious dangers. The fear around cholera raised concerns over the effectiveness of science and government's ability to ensure proper public health and adulteration tended to do the same. The next chapter will discuss the fear and spread of cholera in greater detail.

CHAPTER 5

Cholera and maritime anxiety

> The reckless habits and vagrant propensities of seafaring men, as well as the unsanitary condition of the portions of the city in which they lodge, make them peculiarly liable to become the medium for the spread of contagious and infectious diseases. The services rendered by the sailor to commercial and national prosperity, his exposure to danger and suffering, his romantic and generous disregard of self, and his freedom from domestic and conventional restraints—points in his character and history that have thoroughly enlisted the philanthropist in his behalf— are so many reasons why his sanitary condition should be faithfully studied.[1]

Seamen's death from cholera, and the fear of seamen transmitting cholera, were two longstanding anxieties of the British Empire. Although not the leading cause of death among European seamen, cholera had a remarkably high mortality rate. In 1844, Dr John Macpherson of the Bengal Medical Service wrote that 371 seamen were admitted in the Howrah General Hospital, of whom 17 were affected by cholera. When it came to mortality, however, as high as 10 of the 17 cholera patients died, most of them within nine hours of admission. In comparison, only 9 other seamen died in the entire year, from common maladies such as dysentery, remittent fever, the 'infrequent' acute rheumatism, the 'mild' syphilis, and the 'very rare' scurvy. The hospital records say that most cholera-related admissions (13) and deaths (8) were in April, which probably originated in the same ship.[2] For two years the hospital tried known remedies such as hot bathing, which appeared to help in one case, when combined with

1 A.B. Judson, "Report upon Sanitary Condition of the Waterside and Seamen," *Report of Metropolitan Board of Health of the State of New York* (New York: D. Appleton, 1869), 145.
2 John Macpherson, "A Few Remarks on the Diseases of Seamen in the Year 1844," *Calcutta Journal of Natural History* 6, no. 22 (July 1845): 251-58. In one case, the cause of cholera was supposedly as innocuous as drinking two tablespoons of cream of tartar in water.

a number of other methods. But the problem of overcrowding and the seamen's tendency to turn up in the hospital at the last possible moment, undermined the effectiveness of all remedies. The situation was worse if cholera spread to transiting ships, as ship surgeons did not have the resources to care for cholera patients in their workspace below the deck or the forecastle.

Furthermore, European seamen were considered high risk vectors of cholera. The ocean was the great highway of both commerce and disease, wrote Dr Heber Smith, surgeon at the United States Marine Hospital in New York, and seamen were highwaymen who robbed individuals and communities of their health by propagating diseases that could otherwise be prevented by the simplest sanitary measures. By the third quarter of the nineteenth century, seamen had emerged as potential carriers of epidemic cholera, plague, and yellow fever that led to innumerable deaths across the world. Smith remarked that sanitary regulation for ships and the seamen was not given its due attention and importance. He put great faith in the 'influence and catholic scope of sanitary science' and regulation to ameliorate the physical condition of seaman and protect the health and lives of both seamen and land people.[3] The government should give utmost importance to sanitary regulation of seamen as:

> The dissemination of cholera, small-pox, typhus, yellow, and relapsing fevers, and particularly of venereal diseases, in all their varied forms, is, probably, more to be dreaded from sailors flitting about from port to port, than from all other sources. It is indisputable that no outbreak of cholera has occurred in this country that has not been imported here in ships.[4]

The cholera epidemics provide an ideal case study to examine how the concern for the health of the seamen evolved over the nineteenth century. Every epidemic outbreak was a period of

[3] Heber Smith, "Sailors as Propagators of Disease," *Public Health Papers and Reports 1873* (New York: Hurd and Houghton, 1875), 447.
[4] Ibid, 448.

upheaval that caused panic, reminded people of life's transitory nature, disrupted trade and commerce, and recast the understanding of objects, climates and landscapes. Bengal, the point of origin of the first cholera epidemic in the nineteenth century, was identified as a pathogenic place. This chapter will show how the British government responded to the growing tension of the spread of cholera among and through seamen. As we have seen in the third chapter, moral regulation of seamen was preferred to sanitation in the first half of the nineteenth century for reforming seamen in a manner that would enable them to take care of themselves, reducing the pressure on sanitarian and medical institutions. But, as the anxiety regarding cholera epidemic escalated in the second half of the century, especially after the cholera pandemic in 1866, the colonial state took greater interest in sanitary reform of colonial cities and regulating the quality of the water and alcoholic beverages seamen consumed. Not only were the colonies looked upon as 'dangerous' places but seamen themselves were perceived as the 'propagators of the diseases' and a substantial threat to public health. Through a study of cholera-stricken European seamen, this chapter will analyse how imperial sanitary reforms in the regulation of filth, contamination, hygiene, and morality were built around the subjecthood of seamen as victims and vectors of cholera.

The framing of Asiatic cholera

Much before the cholera outbreak in Bengal in 1817 took a pandemic form, Europeans had possibly encountered cholera during the Portuguese conquest of Goa in 1510. A British ship carrying soldiers to Calcutta in 1756 under the command of Admiral Watson was struck first by scurvy and then what appeared to be cholera according to later chroniclers.[5] One of the first

[5] William Smart, "On Asiatic Cholera in Our Fleets and Ships," *Transactions of the Epidemiological Society of London* 5 (1887): 65.

accurate description of cholera comes from Dr Thomas Curtis, surgeon of HMS *Seahorse* during the Anglo-French Battle of Trincomalee in 1782. His observations were based on his treatment records on his ship and at the Madras Naval Hospital, and the accounts of surgeons from the HMS *Hero* and the HMS *Superb*. Affected particularly by the seizures and collapses suffered by the patient, he named the disease 'cramp', 'mort de chien', and 'spasmodic cholera'.[6] Dr Thomas Girdlestone, surgeon of the 101st Regiment, wrote that the troops arriving in Madras in 1782 were afflicted by a 'spasmodic disease' that resulted in more than 50 deaths within the first three days and upward of 1,000 cases of illness within the first month.[7] He insisted that the disease was not traditional English cholera or *cholera morbus*, leading to its retrospective identification as Asiatic cholera. From the 1830s, the terms Asiatic cholera or cholera spasmodica were used to refer to the more virulent form of cholera that scythed through Europe.

Cholera epidemics were sporadic, eventful, and especially 'dramaturgical' in its recurring pattern over a period of time, as if 'following a plot line of increasing and revelatory tension, move to a crisis of individual and collective character, then drift toward closure.'[8] A combination of menacing symptoms (severe muscle spasm, voice loss and atrophy, excessive fluid discharge), high mortality rate, mysterious origin and alien nature made the disease appear more threatening than other epidemic diseases.[9] British surgeons from the early nineteenth century were often unable to distinguish cholera from severe diarrhoea or dysentery.[10] The confusion regarding the aetiology of cholera resulted from an epistemological inability to

6 Charles Curtis, *An Account of the Diseases of India, As They Appeared in the English Fleet, and in the Naval Hospital at Madras, in 1782 and 1783* (London: W. Laing, 1807).
7 Thomas Girdlestone, *Essays on the Hepatitis and Spasmodic Affections in India: Founded on Observations Made whilst on Service with His Majesty's Troops in Different Parts of that Country* (London: J. Murray, 1787).
8 Charles E. Rosenberg, "What Is an Epidemic? AIDS in Historical Perspective," in *Explaining Epidemics and Other Studies in the History of Medicine* (Cambridge: Cambridge University Press, 1992), 279.
9 Charles E. Rosenberg, *The Cholera Years: The United States in 1832, 1849, and 1866* (Chicago and London: University of Chicago Press, 1962), 1.
10 Theodore J. Preston, "Epidemic Disease in the Royal Navy," *Transactions of the Epidemiological Society of London* 14 (1894-95): 43.

reconcile various theories of cholera occurrence. At the time of the first cholera outbreak in the 1830s, most medical practitioners in Britain and elsewhere in Europe followed the Hippocratic notion of the balance among four humors, namely blood, phlegm, black bile and yellow bile, which postulated the discharge of excess yellow bile (*choler*) as the cause of 'cholera' (*morbus*).[11] This form of cholera was a non-fatal combination of gastroenteritis, regurgitation and diarrhoea. The cholera of the 1830s was more malignant, severe, endemic and rapidly transferred than the 'old disease.' This transitional form was given several names such as cholerine, choleroid, paracholera, blue cholera and Asiatic cholera. It caused more deaths than cholera nostras, cholera morbus and English cholera.[12] The term Asiatic cholera began to be used as cholera hit Sunderland in 1831. Although medical practitioners were aware that spasmodic cholera was not rare in temperate regions, the unforeseen rate of mortality convinced them of the disease's foreign origin.[13]

It appears that the benign form of cholera was called English cholera and the more fatal and pestilential form was called Asiatic cholera. The identification of the disease in terms of regional characteristics was inspired also by the prevalent practice of dividing the colonial world between the healthy temperate and the unhealthy tropical zones. By this time, the optimism regarding the ability of Europeans to acclimatise to tropical regions was replaced by a grim realisation that the tropics were not suited to long-term European residence and colonisation. The biological understanding of Asiatic cholera was thus connected to the geographical taxonomy of a diseased environment. Increasingly through the nineteenth century, this demarcation dictated how cholera was perceived and addressed by British surgeons. They traced the origin of every cholera pandemic in the nineteenth century to India

11 Christopher Hamlin, *Cholera: The Biography* (Oxford: Oxford University Press, 2009), 19.
12 Ibid, 46.
13 Thomas Salter, "Diagnosis of Indian and English Cholera," *Provincial Medical Journal and Retrospect of the Medical Sciences* 5, no. 110 (November 5, 1842), 110-11.

and Bengal in particular, stressing the existence of a unique, erratic, and deadlier version of cholera previously unknown to the Western world.[14]

Britain's knowledge of Asiatic cholera was informed by the copious records of British surgeons and colonial officials in India. Describing the nature of cholera, the Secretary of the Madras Medical Board noted in August 1818, 'This disease is characterized by the suddenness of its attack… in this severe epidemic, death has hitherto been due observed to ensue from 10 to 12 hours from the commencement of the attack.'[15] Some of these officials dismissed the nomenclature of Asiatic cholera, saying the disease was neither distinctively Indian nor too dangerous for Europeans with a healthy and sanitised lifestyle. In 1842, an assistant surgeon of the army in Vellore wrote in his diary that no soldier had died of cholera in the last eighteen months, and the 'few cases of European deaths cannot be imputed to the fault of the country, but directly to the individuals themselves.'[16] Such statements did not have much influence on medical opinion in Britain. Writing in the same year, Dr John Barrett suggested that Asiatic cholera was an aggravated form of English cholera.[17] Death certificates issued in the 1850s mentioned at least 15 different types of cholera.[18]

The characterisation of cholera as Asiatic continued well into the third quarter of the nineteenth century, by which time the term English cholera went out of use. The image of cholera had an important class dimension in its association with both the backwardness of Indian society and irrationality of its knowledge-based practices as well as the 'filthy' parishes of East and South London – 'a heathen country submerged under and concealed within the

14 Christopher Hamlin, "The Cholera Stigma and the Challenge of Interdisciplinary Epistemology: From Bengal to Haiti," *Science as Culture* 21, no. 4 (2012): 446.
15 David Arnold, *Colonizing the Body: State Medicine and Epidemic Disease in Nineteenth-Century India* (Berkeley: University of California Press, 1993), 160.
16 "Diary of an Assistant Surgeon, No. X", *The Asiatic Journal* 38 (May-August 1842), 160.
17 John Barrett, "Asiatic and English Cholera," *Provincial Medical Journal and Retrospect of the Medical Sciences* 5, no. 109 (Oct. 29, 1842), 90-2.
18 Tom Koch, "1831: The Map That Launched the Idea of Global Health," *International Journal of Epidemiology* 43, no. 4 (August 2014): 1015.

otherwise healthy English metropolitan heart of Empire.'[19] A report by J.B. Scriven, first Principal of the Lahore Medical College, in 1862 suggested that the epidemic followed no obvious or rational 'line of progression.' It decimated one village, spared the next, suddenly disappeared, and resurfaced after a few months.[20] The disease was unpredictable, perplexing and horrifying, much like the representation of Indian society in the imperial discourse. Cholera was politicised as an Indian threat to British military campaigns and commerce through its representation as an exotic disease that killed more Europeans than Indians. Through the identification of cholera as 'essentially' rather than 'accidentally' Indian, a colonial overtone was implicated in the making of scientific opinion. As David Arnold says, 'India' and 'Indians' were a 'convenient scapegoat' for the 'health problems of the Empire.'[21] Ira Klein also noted that in the ideology of the British Empire, 'cholera was notoriously Indian, a more distinctive import than the subcontinent's indigo, jute and tea.'[22] Indian passenger ships to Mecca were known to violate the British Native Passengers Act of 1858 (which all national shipping companies were bound to) by carrying more than the limit of two persons per one ton.[23] South Asian pilgrims were 'notorious for their professional filthiness' and therefore viewed as 'exceptionally dangerous vectors of transmission.' Consequently, it had not taken European nations a long time to deduce the origin of the cholera problem.[24]

British opinion oscillated between a belief in the capacity to educate and reform Indians and pessimism that most were not receptive to it. Racial inferiority also accounted for the poor sanitary habits of Indians that arguably helped generate the filth and effluvia responsible for

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19 Pamela K. Gilbert, *Cholera and Nation: Doctoring the Social Body in Victorian England* (Albany: State University of New York Press, 2008), 110.
20 Ibid, 161.
21 Arnold, *Colonizing the Body*, 159-61.
22 Ira Klein, "Imperialism, Ecology and Disease: Cholera in India, 1850-1950," *Indian Economic & Social History Review* 31, no. 4 (1994): 491.
23 LaVerne Kuhnke, *Lives at Risk: Public Health in Nineteenth-Century Egypt* (Berkeley: University of California Press, 1990), 103.
24 Saurabh Mishra, *Pilgrimage, Politics, and Pestilence: The Haj from the Indian Subcontinent, 1860-1920* (New Delhi: Oxford University Press, 2011), 54.

cholera. To understand a European civilisation's sanitarian response to cholera pandemics, Alan Bewell draws upon Julia Kristeva's use of 'abjection' as a model to describe the separation of one's autonomous self from a threatening and detestable physical world. Abjection is a state of mind that makes one despise unsavoury article like filth and waste, causing disgust at the very sight or thought of them. Bewell suggests that European settlers cultivated a sense of disgust towards tropical climate and inhabitants of the tropics as a boundary to demarcate their sanitised world from the tropical world of disease. The Victorian obsession with moral and physical purity created a reflexive boundary between conventionally defined elite and working-class peoples as well as between Britain and the 'excremental colonial world' with India at its centre.[25] Cholera was framed as a disease that originated in India and spread in Britain through their mobile working class. This envisioning of cholera was ostensibly a product of British middle-class anxiety to avoid exposure to filthy and contaminated living spaces and bodies. The sense of disgust buttressed the class boundary when cholera broke racial barriers by travelling from Asia to Europe, and leapt from the effluvia of its origin to sanitised European bodies. A lot of the reflections on insanitary Indians till the mid-nineteenth century were in fact reflections on those of British lower social class. The analogy of colonial otherness shifted to a view of the fundamental biological difference of Indians after the 1850s.

Two surgeons of the Indian Medical Service, John Macpherson (1814-1890) and Charles Macnamara (1832-1918), were largely responsible for strengthening the concept of cholera as an Asiatic disease in the 1870s. Macpherson's *The Annals of Cholera from the Earliest Times to 1817* (1873) and Macnamara's *The Treatise on Asiatic Cholera* (1870) and *History of Asiatic Cholera* (1876) termed cholera 'eternally' Asian. In Macnamara's opinion,

[25] Alan Bewell, *Romanticism and Colonial Disease* (Baltimore and London: The Johns Hopkins University Press, 1999), 252.

medical authors in Ancient India were probably unaware of the epidemic form of cholera but they had a good understanding of several cholera-like diseases and symptoms.[26] Macpherson assumed that Asiatic cholera had not spread globally before the nineteenth century due to India's relative isolation from the outside world. Imperial conquest and commerce opened India and its diseases to the world. Analysing their works, Christopher Hamlin argues that cholera might have been an Indian disease, but its provenance was 'a European concept, a product (and vindication) of observation.' He further says that the theory of cholera's Bengali origin was inaccurate. The disease was known to be endemic to several other parts of the country in the eighteenth century, so the emphasis on Bengal in medical texts was misplaced. The emphasis on Bengal was, however, indicative of the colonial representation of the region as the epitome of filth and insalubrity.[27] To quote a report from 1850 that compared Bombay and Calcutta: 'Bombay lays lower, or as low, is more densely populated in a smaller space, and worse drained than Calcutta, and has stagnant marshes to the north-east of it, and yet medical men tell you that there is no cholera amongst European crews there.'[28]

European seamen as propagators of cholera

British surgeons in India at the time of the first outbreak in 1817 thought the disease was caused by animal and vegetation effluvia, and spread through miasma rather than contagion.[29] Contagionism became increasingly popular as a medical opinion when cholera traversed oceans and hit Britain in 1831. Dr James Kennedy of the Royal College of Surgeons in London

[26] Hamlin, *Cholera*, 39-40.
[27] Hamlin, "The Cholera Stigma and the Challenge of Interdisciplinary Epistemology," 1-3.
[28] Joseph Smith, *The Claims of the British Seaman to the Protection of Parliament* (London: C.A. Bocking, 1850), 13.
[29] Peter Baldwin, *Contagion and the State in Europe, 1830-1930* (New York: Cambridge University Press, 1999), 39-40.

illustrated this opinion through the example of the ship *Carnatic*, which sailed from Madras with a number of crew members who had recovered from cholera, but were stuck again during the voyage. Surmising that the cholera pathogen could not have been carried deep into the ocean from the shore, Kennedy wrote that the disease must have been transmitted through the human body.[30] He also mentioned that shortly after the beginning of the cholera outbreak in Calcutta in 1817 the disease spread in a number of the Company's vessels anchored at Sagar Island. The first death occurred on board the *Warren Hastings* on 7 September 1818, and several other seamen died within a week, while other ships had fewer cases.[31] Ships received some attention in the cholera literature in the 1830s as a ship from the Baltic was supposed to bring the disease to Sunderland in 1831. Dr William Macmichael suggested that the cholera prevailed in waterside communities and usually began after the anchoring of ships with diseased crew, indicating the contagious nature of the disease.[32]

Heeding the caution of cholera's transmissibility from one body to another, the British government implemented some sanitary measures on board ships based on the prophylactic virtues of a disciplined life – diet, hygiene, and comfortable living condition – to reduce the severity of cholera epidemics. They monitored land routes as the pandemic in the 1830s seemed to have spread through Russia. Despite the frequency of cholera among seamen, they also thought it unlikely for the cholera miasma to spread through the slow and often roundabout journeys made by sail ships. They quarantined ships carrying cholera-infected crew and passengers outside the harbour for up to 60 days. Quarantining led to spoiling of organic cargo and also shortage of food on board incoming ships. Facing financial loss, merchant communities opposed the system on the ground of its adverse impact on trade, risking a poor reputation for undermining public health. Many cities replaced quarantine with sanitary

30 James Kennedy, *The History of Contagious Cholera* (London: James Cochrane, 1831), 239-40.
31 Ibid, 199-200.
32 William Macmichael, *Is the Cholera Spasmodica of India a Contagious Disease?* (London: John Murray, 1831).

measures to keep spaces clean and prevent contagion.[33] Abolition of quarantine became the leading public opinion in the 1840s as new sanitary reform of public spaces and a humanitarian interest in the welfare of seamen changed the way cholera was addressed.[34] Increasing support for anticontagionism was based on the widespread preference for miasma rather than the germ theory of disease dispersion, but it also owed much to political resistance to quarantine.[35] The main reason, however, was the lack of understanding of cholera: 'is it a fungus, an insect, a miasma, an electrical disturbance, a morbid off-scouring of the intestinal canal?'[36]

Seamen were at a greater danger due to their brutal lives and the relative lack of access to health care on board ships and in port cities. Cholera and dysentery contributed to the maximum number of seamen's death at the Howrah General Hospital in the 1840s.[37] The findings corroborated the relative frequency and mortality from various diseases in the Royal Navy from 1830 to 1836.[38] Among the contributing factors were seamen's 'reckless' behaviour, condition of stomach after long voyages, consumption of spirituous and poisonous liquor, compulsion of working under the midday sun, maundering in the markets during daytime, debauchery, sleeping out in the dew or on the damp deck, and living close to the mouths of sewers where their vessels were moored.[39]

The French government, which had reduced the stringency of quarantine in their Mediterranean ports in the 1840s, convened an international sanitary conference in 1851 to standardise quarantine regulations. This and the next conferences discussed how to protect

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33 Mark Harrison, *Contagion: How Commerce Has Spread Disease* (New Haven: Yale University Press, 2009), 67.
34 Ibid, 105.
35 Erwin H. Ackerknecht, "Anticontagionism between 1821 and 1867," *International Journal of Epidemiology* 38 (2009): 7-21.
36 "Contagiousness of Cholera," *The Lancet* 62, no. 1573 (October 22, 1853): 393-94.
37 Macpherson, "A Few Remarks on the Diseases of Seamen in the Year 1844," 251.
38 'Statistical Reports of the Health of the Royal Navy for the Years 1830, 1831, 1832, 1833, 1834, 1835, and 1836, Part II,' in *Parliament Accounts and Papers Vol. V* (1841), 111.
39 Ibid, 252.

Europe from the 'exotic diseases' of the East and keep 'Asiatic scourges' like cholera at bay.[40] The delegates in the first conference discussed climate, atmosphere, effluvia and filth that were so often associated with cholera. Despite conceding that South Asian pilgrims transmitted cholera across the Middle East through Haj pilgrimage, they could not come to a resolution regarding the extent and method of quarantine.[41] The bills of health issued by port authorities to the ship's crew served as confirmation or absence of disease when the ship journeyed to its destination from a region where an epidemic disease had broken out. The deployment of long-distance commercial steamships in the Indian Ocean in the 1850s cut journey times by half in most routes and allowed diseases to spread more rapidly.[42] Ships were also now larger and able to accommodate more people than before, thus increasing the possibility of spreading germs through contagion.[43] In 1865, for the first time, cholera approached Europe by sea instead of the conventional land routes.

The third International Sanitary Conference held in Constantinople in February 1866 discussed how infected sailors and passengers carried cholera to Egyptian and Mediterranean ports and subsequently to Europe. The increasing mobility of seamen and immigrant labourers intensified the threat of the transfer of diseases across regions, thus making the health of seamen and passengers a global concern. Steamships enabled cholera-stricken persons to travel long distances before they began to show symptoms. The journey of the cholera pathogen along

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40 Arnold, "The Indian Ocean as a Disease Zone," 21.

41 Norman Howard-Jones, *The Scientific Background of the International Sanitary Conferences, 1851-1938* (Geneva: World Health Organization, 1975).

42 Sailing ships had not been put out of operation yet. In a lecture in November 1873, Lord Brassey explored the transition of sail to steam, and the great impact of steam vessels on British trade and commerce. Along with this technical and engineering advancement, the opening up of the Suez Canal too had increased considerably Britain's communication by sea with the East. Not only did it shorten the distance to be travelled and therefore the time but it now provided the opportunity for sailing vessels to pick up coal as and when required from British acquired territories such as Gibraltar, Malta, Port Said and Aden. Sailing vessels were still considered useful especially in cases when raw materials could be stored and sold in the market according to the proper business opportunities. They were convenient not only because they took longer to travel but also the ship served both as 'conveyance' and 'a warehouse'. Lord Brassey, *Mercantile Marine and Navigation from 1871 to 1894* (London: Longmans, Green & Co., 1894), 4-5.

43 Mark Harrison, *Contagion: How Commerce Has Spread Disease* (New Haven and London: Yale University Press, 2012), 140-41.

marked sea routes enabled European nations to pinpoint the problem areas and consider measures of arresting the flow more efficiently. This was one of the main reasons why countries such as France were keen to establish a sanitary buffer zone in the Middle East. They went to the extent of suggesting closure of maritime routes between Europe and Asia and making pilgrims undertake overland journeys so that the disease could be contained within Asia.[44] Britain were unwilling to follow measures as stringent as these, but maritime quarantine was the most important aspect of British medical policy in India from 1860 till the end of the century.[45]

Anne Hardy says that Britain's main defence against cholera at this time was monitoring its shoreline. The government was resolutely against imposing quarantine, but regulating the influx of infected seamen and passengers was the best course of action. The relationship between cholera and contaminated water was still not worked out, and water purification was not yet a steadfast agenda of the government.[46] Seamen's vulnerability to cholera and the risk of spreading cholera through diseased seamen received more attention around this time. The Seamen's Hospital in London issued notices to the port authorities to isolate seamen who showed symptoms of a contagious disease on return from a region infected with the disease.[47] The Sanitary Act of 1866 gave the Lords of the Privy Council the authority to issue rules and regulations for vessels carrying persons suffering from infectious diseases. They could now issue an order to treat those suffering from cholera, epidemic, endemic and contagious diseases in order to prevent it from spreading across Britain. It was noted that the recommendations made for the improvement of the sanitary condition of seamen were not

[44] Ibid., 140.
[45] Mark Harrison, *Public Health in British India: Anglo-Indian Preventive Medicine, 1859-1914* (Cambridge: Cambridge University Press, 1860), 117.
[46] Anne Hardy, "Cholera, Quarantine and the English Preventive System, 1850-1895," *Medical History* 37 (1993): 254-55.
[47] Gordon Cook, *Disease in the Merchant Navy: A History of the Seamen's Hospital Society* (London: CRC Press, 2007), 196-97.

implemented most of the time. The mortality rate of the merchant seamen was found to be double of what it should have been.[48]

The Port Sanitary Authority (PSA), established in 1872 with a number of medical practitioners to inspect the port area and the passengers and cargoes of inbound ships for diseases, had proposed an alternative to the prevalent custom of quarantine. Liberals and Radicals tended to be against human quarantine because the practice allegedly failed to prevent spread of diseases, infringed individual liberties, disrupted maritime trade, and was expensive to maintain. The PSA implemented an alternative practice, known as the 'English System', to manage diseases outside the Quarantine Act such as smallpox, typhoid, scarlet fever, and measles. Only infected patients were now isolated and sent to a specialised hospital, while other passengers and crew were monitored for possible infection.[49] Cholera was removed from the quarantine programme as the port authorities succeeded in containing it after the 1870s. The identification of the cholera pathogen and the link with the water supply strengthened Britain's case for waiving quarantine. Sometimes, the attempts of the health authorities to protect Egypt from cholera failed because of the 'complete disregard for control measures displayed by ship captains,' who falsely declared good health of passengers and provided wrong information about the causes of death on shipboard in order to avoid quarantine.[50]

It is notable that medical practitioners gave more attention to intermittent cholera compared to chronic problems such as fever and tuberculosis that occurred round the year.[51] Gavin Milroy, member of the Epidemiological Society of London, noted in 1870 that despite the study of epidemic cholera achieving 'great national importance of epidemiological

48 William Hardwicke, *Notes and Commentaries on Public Health* (London: Nicholls Bros, 1867), 98.
49 Krista Maglen, "'The First Line of Defence': British Quarantine and the Port Sanitary Authorities in the Nineteenth Century," *Social History of Medicine* 15, no. 3 (2002): 414.
50 Myron Echenberg, *Africa in the Time of Cholera: A History of Pandemics from 1817 to the Present* (Cambridge: Cambridge University Press, 2011), 76.
51 Margaret Pelling, *Cholera, Fever and English Medicine, 1825-1865* (Oxford: Oxford University Press, 1978).

inquires,' the knowledge generated in the past fifty years or so was not sufficient in preventing and curing it.[52] As the Merchant Shipping Act of 1867 did not seem to have helped much in improving seamen's conditions, it was revised in 1894. The new Act emphasised the improvement in ship building, saying all crew spaces should be securely constructed, properly lighted and ventilated so that seamen are protected from the weather and sea.[53] The results, not so encouraging, provoked criticisms from government officials.

Prevention of cholera on board ships

In his article on the treatment of cholera in the nineteenth century, Norman Howard-Jones called cholera therapy 'tragicomic' and the most 'grotesque chapter' in the history of therapeutics.[54] He thought doctors did patients more harm than good by applying ineffective methods. Bleeding was initially the most favoured treatment of cholera, especially in British India, which compounded the problem of loss of water and electrolytes due to diarrhoea and vomiting. The second most favoured option of treating cholera was giving patients calomel and opium. Other methods included cauterising the patient with blisters put along their spine, baths of hot or cold water, pumping air into bellies through anus, electric shock, and intravenous infusion of saline water. Howard-Jones points out that the last option had some potential of success unlike the others since saline water would compensate the loss of fluid. Most of these methods were derived from the idea that patients' bodies needed to cleansed of the substance causing cholera. Since doctors were uncertain which 'morbific element' or 'poison' they were

52 Gavin Milroy, "Epidemiological Conclusions and Suggestions," *The British and Foreign Medico- Chirurgical Review* 46, no. 92 (October 1870): 472.
53 W.G. Romeril, "Sanitation in the Mercantile Marine," *Journal of the Sanitary Institute* 17, no. 2 (1896): 152-73.
54 Norman Howard-Jones, "Cholera Therapy in the Nineteenth Century," *Journal of the History of Medicine and Allied Sciences* 27, no. 4 (1972): 373-95.

looking to purge, the methods were more speculative than practical.[55] Patients died in large numbers with or without therapeutic assistance. Ship doctors did not have access to the apparatus that doctors on shore could use, so they had to rely on pharmacy to nurse cholera-affected seamen.

Curtis was one of the first British surgeons to meticulously describe the symptoms and treatments of his patients. His first two patients had died within hours of the start of treatment but he was able to save a number of other patients. The treatment began with four grains of solid opium in two pills to consume and rubbing two or three teaspoons of a mixture of equal parts of laudanum and ether on their stomach. If their symptoms did not subside in half hour, they were rubbed with dry flannel and given four grains of opium. If the patient felt better after two hours, he was given one and a half ounce of Glauber's salt to neutralise the effects of too much opium. Treatment could also involve administering a laxative glister, a warm seawater bath for 15 minutes, and warm wine.[56] The uneven success of these methods made Curtis replace opium with repeated small doses of Glauber's salt in Aqua Mentha Piperitae (peppermint water), mixed with small quantities of emetic tartar, but his next patient died as well.[57] On his visit to the ship, the Admiral's surgeon recommended using the purgative antimonial solution, castor oil, rhubarb and calomel, with purgative glisters, warm stimulating cordials and the application of heat in every possible way. The two patients treated in this method died within eight hours.[58] Another patient was given a glister with castor oil, wine and nourishing diet, and doses of calomel and James's Powder.[59] Several patients recovered from mild forms of cholera after taking laxatives with aromatic oil, warm glisters and wine, and

[55] Donald D. Vogt, "Trends in 19th Century American Cholera Therapy," *Pharmacy in History* 16, no. 2 (1974): 43-53.
[56] Curtis, *An Account of the Diseases of India*, 58.
[57] Ibid, 58-59.
[58] Ibid, 59.
[59] Ibid, 62.

cordial diet and drinks.[60] Curtis, aware of the constraints of care on board a ship, said limited medication and manpower hindered his experiments on patients.

Curtis treated many more cases of mort de chien when he joined the Madras Hospital in July 1782. Fewer patients, three out of 20, died in the hospital. They were given gentle purgatives and glisters such as decoction of Manna with cream of tartar, decoction of tamarind and senna, and rice-water with boiled cassia to flush out the bile; pills of rhubarb and calomel to cure irritable stomach; warm wine with spices, punch or toddy to strengthen a patient weakened from stomach problem; and use of opium was avoided.[61] The experience of treating patients helped Curtis identify the symptoms of cholera and take preventive measures before the disease intensified. He mentioned that the treatment undertaken in hospitals was more effective than the treatment practiced on board ships. The emphasis in hospital care was on rubbing the stomach, legs and feet with arrack-soaked flannel, wrapping patients in large blankets to prevent exposure of the body to air, and giving them warm wine mixed with chili and strong draughts.[62] The treatment Curtis did was mostly exploratory as he, or any surgeon at the time, was not certain about cholera pathology. The severity of the disease, which caused death in usually less than ten hours, hardly gave surgeons enough time to observe patients and experiment on the dose and composition of decoctions.

Possible treatments of cholera featured in hundreds of articles in medical journals and treatises in Britain. A study of the medical guides circulated among captains of merchant ships shows the transformation of the medicine given to cholera patients. *The Seamen's New Medical Guide* from 1842 provided a comprehensive step-by-step method of bringing diarrhoea and cholera under control on board ships. The book numbered every medicine mentioned to enable

[60] Ibid, 67.
[61] Ibid, 70.
[62] Ibid, 71-72.

ship captains find them easily in the medicine chest. It urged taking diarrhoea very seriously since as usually the first symptom of cholera. The *Guide* recommended immediately giving the patient an emetic of ipecacuanha and follow it up the next morning with 25 grains of rhubarb and 10 grains of magnesia mixed in water with a few drops of the essence of peppermint. If the disease advanced, the patient would be given 20 or 30 grains of the Astringent Powder every two or four hours. If the patient was exposed to cold, five or six grains of Dover's Powders were to be given three times a day, and the patient would not be allowed to drink anything immediately afterwards. Five or ten drops of laudanum could be given with Astringent Powders to ease pain.[63] Cholera required the same medication in stronger doses, with brandy during the attack and half a tumbler of mulled wine with a small quantity of toasted bread and castor oil after the symptoms subsided.[64]

A guide book from 1845 recommended bleeding at the onset of the disease, keeping the patient warm to sustain proper blood circulation, rubbing hartshorn liniment on the stomach, putting 20 grains of calomel on the tongue and repeating in doses of one grain every second or third hour, having the patient gulp it down with a draught containing 10 or 15 drops of laudanum and two tablespoon of brandy in a small quantity of water, and finally occasional doses of castor oil and light nourishing diet when the patient was on his way to recovery.[65] The book said a cholera patient had to be immediately covered in hot blankets and kept warm by rubbing flannels and camphorated spirits, or applying poultices of equal parts of mustard and linseed meal or oatmeal to the stomach. Hot water bottles were to be pressed to the soles of their feet. They would be frequently given spiced white wine whey, hot brandy and water, and a teaspoon of spirits of hartshorn in a glass of hot water, or five to 20 drops of peppermint oil.

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63 *The Seamen's New Medical Guide* (Liverpool: Mitchell, Heaton and Mitchell, 1842), 113.
64 Ibid, 113-14.
65 Edward Palmer, *A Guide-Book to the Government Medicine Chest for Merchant Seamen* (London: H. Silverlock, 1845), 42.

Spiced warm broth could be given if the stomach was able to take it. 20 to 40 drops of laudanum in any warm drink would be given in severe cases. The *Guide* noted that patients usually survived if they braved the first four or five days of struggle. Once the patient recovered, all his articles including rags, cordage, paper, old clothes would be burnt, clothing and furniture rinsed, and wooden articles cleansed by a strong mixture of soap and water.[66] These recommendations were derived from the preferred methods of doctors during the 1830s cholera pandemic in Britain.

In his 1854 book, Dr Gustavus Horner suggested using magnesia and supercarbonates of soda as a remedy for nausea and acidity; taking one to three grains of the powders of calomel and opium, the sweet spirits of nitre, sulphuric ether, laudanum and essence of peppermint as anodynes and antispasmodics; having hot baths of seawater with pulverised capsicum, putting mustard and blisters on one's body, and sprinkling powdered sulphate of Quinia on the skin; drinking hot brandy toddy and a julep of carbonate of ammonia, Gum Arabic, sugar and water a stimulant; and applying hot water bottles on hands and feet.[67] He suggested drinking rice and barley water for cholera patients. During convalescence, patients were to be given powdered cantharides boiled in Spirits of Turpentine, which would be replaced with acetate of lead since it acted a strong sedative. To restore their strength, patients were given quinine, an infusion of Columbo root, and a concoction of the root, powdered cinchona and ginger.[68]

The Seaman's Medical Friend, published in 1857, observed that the first thing to do was keep the patient warm by blankets, hot water bottles, and rubbing their hands continuously by two persons if possible. The patient would be given small quantities of cold water or ice to drink. A spoonful of castor oil or olive oil combined with 10 drops of laudanum would be given

66 Ibid, 115-16.
67 Gustavus R.B. Horner, *Diseases and Injuries of Seamen* (Philadelphia: Lippincott, Grambo & Co, 1854), 147.
68 Ibid, 148.

every two hours to reduce vomiting, and the dose would be changed to 20 drops of elixir of vitriol with 10 drops of laudanum in gum water if vomiting continued. The book recommended application of mustard plasters on the stomach and stimulants when the pulse was low. The emphasis was on keeping the patient in isolation, throwing his excreta overboard, fumigating or whitewashing his sleeping place on recovery, and boiling his bedding and clothes before they were used again.[69] Finally, the Navy-authorised guide by Harry Leach recommended using diarrhoea mixture that was a combination of Diarrhoea Powder, laudanum and water after every bowel movement, no medicine during cramps, and nothing but nourishing diet during fever.[70]

In addition to seamen, surgeons were at great risk of succumbing to cholera on account of their proximity with cholera-stricken seamen and passengers. For example, the assistant surgeon on board the *Fox* died of cholera in 1852.[71] Sir Charles Forbes, chartered for service against pirates in Burma, wrote about his experience of getting cholera:

> Visit the fort, call on friends, see Sillar, find no money sent from Hong Kong, am in distress as to what I take up to China. Tiff at Bank and proceed to ship; am feeling very seedy; coldness about the stomach and general lassitude; go to bed, at midnight wake up with fearful gripping pains; bear it till 2 a.m., 31st, when I vomit and am purged; send for surgeon of 'Pottinger'; says I have Cholera, am drawn together with cramps, quite cold and vomiting frequently… the day is spent in thinking of the uncertainty of life and how soon we are cut off and gone. (Bombay, 30-31 August 1854).[72]

69 Frederick D. Fletcher, *The Seaman's Medical Friend*, 2nd ed. (Liverpool: W. Fearnall, 1857), 58-59.
70 Harry Leach, *The Ship Captain's Medical Guide*, 2nd ed. (London: Simpkin, Marshall & Co., 1868) 43-44.
71 "Naval Intelligence," *The Times*, November 29, 1852, 7.
72 Charles Forbes, *Journal of Further Voyages for the P. & O. Company between Bombay, Singapore and Hong Kong, and on a Return Voyage to England, August 1854-June 1855*, Wellcome Library, MS5959.

The Inspector-General of Hospitals Robert Lawson's investigation on the outbreak of cholera in ships at sea, presented at a meeting on 10 June 1871, analysed the circumstances of cholera in ships that travelled from Gravesend to India in 1866. He outlined three causes of epidemic diseases as general, locality-specific and individual-centred. The first of these, the *Windsor Castle*, was a large ship with a cargo of railway iron. An artilleryman on board was almost immediately attacked by diarrhoea or cholera, who was followed by other passengers and seamen. Nine persons died before the ship passed the Cape of Good Hope, after which health on board the vessel improved and no further death was reported. The medical officer of the ship, Dr Hanrahan, Staff-Assistant and Surgeon, had the latrines thoroughly cleansed with distilled water and sprinkled with chloride of lime every two hours, the decks fumigated with nitric acid fumes, the lower deck scraped, scrubbed and sprinkled with chloride of zinc and lime, the ventilation shafts cleaned, the passengers kept on deck for as long as possible. He had all the belongings of the deceased thrown overboard and their berths scrubbed and washed with chloride of lime. The logs of the second ship, *Lord Warden*, showed a similar tendency of cholera dying out once the ship passed the Cape.[73] It was assumed that cholera was at its severest when the ship was in the tropical region and its intensity depended on fluctuation of temperature. The drop in temperature did not always occur when the ship travelled towards Europe. In one instance from 1875, cholera broke out on board the ship *Glasgow* as it moved towards Calcutta from Trincomalee and the temperature dropped almost 20 degrees Fahrenheit.[74]

There were instances, such in the case of HMS *Jumna*'s passage to India in 1867, when nearly 60 seamen and officers suffered from malignant cholera and choleraic diarrhoea. It was observed that those who ate the beef and bread procured in England were more vulnerable to

[73] Robert Lawson, "Observations on Outbreaks of Cholera in Ships at Sea," *Transactions of the Epidemiological Society of London* 3, no. 2 (1874): 297-99.
[74] *Statistical Report of the Health of the Navy for the Year 1875* (House of Commons: 1876): 226.

the disease than those who did not. The ship *Newcastle*, journeying from India to England in 1866, was seized with cholera between the Cape and St Helena in the South Atlantic Ocean. Lawson mentioned several cases from Macpherson's *The Cholera in its Home*. A ship named *Sultany* that had no cholera patients among its 80 crewmembers and 375 passengers on board when it started its journey from Calcutta on 10 February 1854, ended up with 30 casualties by the time it reached Mauritius on 24 March. In 1859, the P. & O. Company's steamship *Oriental*, carrying 588 passengers, mainly troops, left for Ceylon from Bombay when cholera raged through the city. Twelve deaths were reported by the time the ship anchored at Galle as an emergency stop. The disease had subsided by the time the ship reached Mauritius.[75]

Thereafter, Lawson referred to Dr Murray's report on treating cholera on board the *Gertrude* that transported 120 military invalids from Calcutta to England in 1859.[76] He made a comparison between the document and the official report submitted by the military medical officer on board to the Director General Army Medical Department and the ship's log sent to the Registrar General of Seamen. He noted the difference among these documents in terms of the description of the disease that killed nine and incapacitated many for days. Passengers of another ship, *Queen of the North*, in 1864 met with bowel ache and diarrhoea, which the medical officer 'hesitated to call cholera.' The more severe cases were termed as cholera, which claimed 24 lives. The crew of the ship, who lived in the forecastle and did not go into the hold, did not get cholera but the chief officer, who apparently drank water in large quantities, died of cholera.[77] Finally, Lawson wrote about five cholera deaths on board *Durham*, which travelled from Calcutta to London in 1866. The ship's medical officer reported that nearly half the seamen slept on the top deck owing to the heating of the lower deck, and none of them had

[75] Ibid, 301.
[76] The surgeon was referred to as Dr Tuloch in "Military and Naval Intelligence," *The Times*, September 29, 1859, 10.
[77] *Statistical Report of the Health of the Navy for the Year 1875*, 303-4.

cholera.[78] He concluded that cholera spread like a wave without specifying the mode of circulation and supported the tropical origin theory despite having surveyed cholera cases stemming from England.

The incidence of cholera on board the Marguerite occurred under unusual circumstances, as the deck was clean, the ship was empty of cargo and free of odour, the crew slept on the deck in open air under a tree near the river bank. The captain said that the disease began shortly after the seamen consumed a cask of salted meat bought from the local market. Finally, it intensified following the purchase of drinking water from local boatmen, who pretended to sell filtered water to all ships in the harbour that could mot take direct supply from the hydrants on the banks. The water had a foul odour and unpleasant taste, and revealed impurity when tested. Cholera stopped after the water was ceased to be used, but 12 people had already been affected.[79]

In 1877, three seamen died of cholera on board *Arab* in Bombay. The captain had stopped granting shore leave once the prevalence of cholera in certain areas of the town was confirmed but several seamen were already infected. Only one among the four seamen taken to the European General Hospital for treatment survived. To counter cholera, the ship was first moved away from the city. It was then fumigated and disinfected with sulphur and carbolic acid. The clothes and bedding of the cholera patients were burnt. Two water closets were reserved for patients. All infected seamen were isolated under the hurricane deck. The ship's medical officer reported that the ship had been using water from a merchant shipping tank instead of the dockyard tank vessel in accordance with the regulation. His had found traces of ammonia, chlorine and organic matters in this water before filtration. The remainder of the

[78] Ibid, 305.
[79] H.W. Bellew, *Cholera in India, 1862-1881* (Calcutta: Bengal Secretariat Press, 1884), 100.

water was consequently flushed out but drinking of this water before the test could have caused cholera.[80]

Lawson collected a massive amount data about cholera on board ships over the next twenty years that was presented to the Epidemiological Society of London. He cited the Sanitary Commissioner for the Government of India's report for 1881, which contained a detailed account of cholera on board ships transporting coolies from Calcutta to Mauritius, Natal and the West Indies from 1871 to 1880. Out of the 222 ships carrying 129,527 coolies, 32 were affected by cholera and caused 181 deaths.[81] There is no mention of any sailor dying, though it would be unlikely for not one among the crew succumbing to cholera. It was in the 1880s that the Royal Navy was thought to have finally eradicated cholera from its ranks to a large extent, learning a great deal from the experience of epidemics, and the study of the method of transmission of cholera.[82] The cholera epidemic resurfaced in 1891, affecting 44 seamen and killing 23 in the ships *Redbreast* and *Marathon* when it was anchored in Bombay. The disease raged through these ships between 11 and 15 September. Vindicating Lawson's belief that cholera in the port city was the precursor to cholera on board ship, the crew of these ships fell ill after a shore leave when they supposed contacted the disease from the local people. There was no sign of the disease in the ports these ships arrived from, Karachi and Trincomalee. Cholera on board was particularly dangerous since infected persons could not be effectively isolated. Some surgeons also believed that the depression of watching one's colleague die made seamen even more likely to succumb to cholera.[83]

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80 *Statistical Report of the Health of the Navy for the Year 1877*, 194.
81 Robert Lawson, "On the Manifestations of Cholera in Ships at Sea, and Their Connections with Outbreaks on Land," *Transactions of the Epidemiological Society of London* 11 (1892): 84.
82 Preston, "Epidemic Disease in the Royal Navy," 47.
83 Ibid, 48.

In sum, the modes of treatment on board ships differed significantly from the measures adopted in hospitals. In comparison with the various treatments of cholera in Britain that depended upon the prescribing surgeon's allegiance to the specific theory of the origin of cholera, the Navy used a standard protocol derived from the study of cholera among ship's crew. Before the 1860s when urban authorities in Britain were finally able to identify and destroy the source of contamination, British medical practitioners advocated various contradictory methods of treatment. Snow started working on the possibility of treatment during the third epidemic of cholera that reached Britain in 1853. His method of therapy was premised on his transition from the humoral to the germ theory of disease. He prescribed destroying the cholera particle by chemical substances like olive oil, animal charcoal, sulphur, oil of cajeput, camphor, and creosote or saline intravenous injection when the patient was in a state of collapse.[84] Those who subscribed to the traditional humoral theory, such as the surgeons in St Thomas' Hospital in London used the mixture of half pint water, two grains tartar emetic and half ounce sulphate of magnesia as medicine and lead, opium, turpentine, carbon, lime juice, burnt coffee, soda water, hot air baths and ipecacuanha for treatment.[85] These were not very different from the therapeutics used in the Navy. It shows that many naval surgeons based their method of treatment on humoral theory till at least the mid-nineteenth century, which was in contrast with their explication of a nervous pathology for cholera in their treatises.

In the late nineteenth century, ship surgeons were hopeful of curing cholera before the patient was in a state of collapse. A number of surgeons went to the extent of suggesting that hypodermic injection of chloral or quinine could seize the morbid process. They were more

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84 Peter Vinten-Johansen et al. *Cholera, Chloroform, and the Science of Medicine: A Life of John Snow* (Oxford: Oxford University Press, 2003), 250.

85 Amanda J. Thomas, *The Lambeth Cholera Outbreak of 1848-1849: The Setting, Causes, Course and Aftermath of an Epidemic in London* (Jefferson, NC and London: McFarland, 2010), 48-49.

experimental than civilians in the sense they lacked adequate equipment for treatment and resorted to ad hoc measures, such as using the top of a chest as a surgery table or substituting a known emetic for a little used another in case of short supply. Surgeons on shore used warm blanket to sustain the patient's body temperature and gave them iced drinks. The measure of giving stimulants had almost stopped after the mid nineteenth century since their injurious impact on the kidneys and liver as well as the inadequacy of the nervous theory of disease was established by now. They were used in special circumstances, especially when surgeons needed to restore the patient's heartbeat. Astringents such as chlorodyne and diluted sulphuric acid, sinapism, and diluted hydrocyanic acid were used to cure gastric irritability caused by diarrhoea. Careful nursing such as applying heat on the patient's body and rubbing his limbs was essential.[86] The stark difference between the two methods of treatment from different quarters of the nineteenth century exhibits how ship surgeons modified their approach to treatment in keeping with the transformation of theories of disease. The reduction in the number of recommended medicines also points out the increasing certainty over the method of treatment.

Prevention of cholera in port cities

British surgeons in hospitals were known for modifying remedies prescribed in British medical textbooks, integrating elements from indigenous therapeutics and experimenting on patients whose symptoms did not match conventional knowledge. For treating cholera, they used black pepper, calomel, ginger and asafoetida with opium, brandy or arrack, and later cholera pills made of equal portions of opium, black pepper and asafoetida.[87] The use of Indian ingredients

[86] *Statistical Report of the Health of the Navy for the Year 1875*, 230-31.
[87] David Arnold, "Cholera and Colonialism in British India," *Past & Present* 113 (1986): 136.

such as black pepper, ginger and arrack in combination with European-origin calomel and brandy shows an eclectic exchange of medical ideas between Britain and India. The therapeutic treatments were understandably not standardised, as cholera pathology was uncertain till the end of the nineteenth century. Surgeons relied on early detection and start of treatment for cholera patients.[88]

European seamen's greater vulnerability to cholera than other members of the colonial ruling race was pointed out by Dr Macpherson when he said that cholera was more severe among seamen in the Howrah General Hospital in comparison with the military hospital patients. In the absence of surgeons on most merchant vessels, ailing seamen often had to wait for the captain to have some time off to check on him. Seamen were seen to lie helpless on the damp deck for the night, too weak to call out for help, waiting for other crew members take notice and send him to the nearest hospital on shore. Some of them died before or were near death by the time they were taken to the hospital. Seven out of ten died within nine hours of admission to the Howrah Hospital. The treatment in hospitals was more effective than on board ships, but hardly adequate on account of the shortage of staff and beds. In most situations, patients received no formal treatment. Some were given hot baths when on the verge of collapse. Macpherson noticed that the severest cases often came from the same ship. His usual method of treatment was fifteen grains of sugar of lead combined with small quantities of opium, other than hot bath.[89] His access to medicine was probably very limited, as surgeons in Britain or even ship captains with medicine chests seemed to have more varieties of medicine at their disposal. In any case, the Bengal government did not have a discernible plan of action in combating cholera until Norman Chevers published a pamphlet on the health of seamen in 1864. This pamphlet, rather than the British government's trepidations in the wake of the

88 Campbell Brown, J., *Report on the Calcutta Medical Institutions for the Year 1871* (Calcutta: Bengal Secretariat Press, 1872), 14.
89 Macpherson, "A Few Remarks on the Diseases of Seamen in the Year 1844."

cholera epidemic in Mecca and Egypt in 1865, precipitated largescale sanitary reform in British India.

The need for a racial barrier was instrumental in the spatial arrangement and landscaping of colonial cities like Calcutta and Bombay. Calcutta's European and Indian population lived in different parts of the city. Many colonial authors envisioned the 'white town' as a British sanctuary surrounded by a menacing 'black town'. The delineation of a core and a periphery in a city somewhat negated the pre-existence of a settlement at the site. According to Farhat Hasan, the division sought to preserve European cultural exclusiveness rather than racially segregate them from the indigenous society. There is evidence of indigenous merchants owned properties in the 'white town' in the mid-eighteenth century, and of their European associates visiting their houses in the 'black town'.[90] A Bengali merchant named Jagmohan Bysack had an office in the European area of Calcutta where he invited newly arrived British civilians to stay. He considered it beneficial for the family's commercial interests to have made acquaintances with young civilians, some of whom went on to have excellent administrative careers in later life. Apart from the local trading partners of the British, Indian servants working in European households lived in the 'white town' in their array of huts. The 'black town', centred round a marketplace, was inhabited by a variety of people and had a heterogeneous culture. The patronage of art and culture by affluent Bengali merchants led to its gentrification.[91]

The people of Calcutta, most notably Indian merchants and government employees with knowledge of English, kept crossing cultural borders. An example of this entanglement was the establishment of Hindu College in 1817, where European teachers taught Indian students.

[90] Farhat Hasan, "Indigenous Cooperation and the Birth of a Colonial City: Calcutta, c. 1698-1750," *Modern Asian Studies* 26, no. 1 (1992): 76.
[91] Ibid, 77.

The desire to know India's past inspired several European scholars to learn Sanskrit under Hindu pundits.[92] The dialogues of the people engaged in this field of cultural encounter reveal that the white and the black towns were demarcated by class, ethnicity, and occupation instead of race. The living quarters of Eurasians and Armenians represented grey areas of racial integration. European accounts of the black and white towns did not conclusively draw a boundary between the racial spaces as their territorial and cultural signposts were always in flux.

Swati Chattopadhyay argues that the black and the white towns in Calcutta developed separately as Indian and non-Indian habitats till the Town Improvement Committee, established by Lord Wellesley in 1803 to implement British planning ideas, consolidated of several localities into a city. The shifting nature of the white town's perception was best exemplified by Chowringhee. Initially a suburb compared to the 'fashionable' European district of Tank Square, in the 1830s Chowringhee became a desirable neighbourhood for wealthy people who wanted to avoid the bustling centre and yet live close to the administrative and commercial districts. When both Chowringhee and Park Street became the centre of commercial activity in the mid-nineteenth century, the European living quarters shifted southward to Alipore.[93] The boundary between the white and black towns thus relied on the context, and European residents created 'discrete containments for both public and private sociability' when there was little to distinguish between communities.[94] Military objectives and commercial interests often influenced the government's urbanisation plans. Markets in particular obviated demarcation in keeping with their integrative character.

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92 Peter J. Marshall, *Bengal: The British Bridgehead* (Cambridge: Cambridge University Press, 1988), 175.
93 Swati Chattopadhyay, *Representing Calcutta: Modernity, Nationalism, and the Colonial Uncanny* (London and New York: Routledge, 2006), 77.
94 Ibid, 79.

The colonial state put their opinions on sanitation and modernity into practice through town planning.[95] The Governor of Bengal Warren Hastings set up the Lottery Committee during the cholera epidemic of 1817 in Lower Bengal. The urgency of reformist and development strategies were mobilised to a large extent by the need to tame India's environment, perceived as an epidemiological threat for European settlers. The public works department started building wide roads in densely populated areas to ease out congestion-related health problems.[96] As one of its members, G.I. Gordon, admitted, the Lottery Committee was a product of the sanitarian need to protect European residents from the tropical diseases emanating from the black town. The Committee emphasised the need for improved drainage, larger tanks, new aqueducts and bridges, and cleaner waterfronts. The sanitary engineering projects in particular areas of the city reflected the concern regarding the close link between cleanliness and health.[97] An Improvement Committee surveyed the city and suggested measures to improve drainage, water courses and streets. The Lottery Committee was eventually replaced by the Fever Hospital Commission in 1836 that identified and recommended restructuring hotbeds of epidemic diseases within the city.[98] The reports of sanitation surveys from this period framed the city within a paradigm of backwardness, consolidating its image as a 'pathological space.' Finally, powerful and selective visual representation of the city in colonial documents helped create tropes of disease-ridden Indian localities and a symbolic geography of filth.[99] Thus, the disgust for filth created a context for the colonial state to regulate spaces and communities.

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95 Anthony D. King, *Colonial Urban Development: Culture, Social Power and Environment* (London: Routledge and Kegan Paul, 1976).
96 Robert Home, *Of Planting and Planning: The Making of British Colonial Cities*, 2nd ed. (London and New York: Routledge, 2013), 68.
97 Partho Datta, *Planning the City: Urbanization and Reform in Calcutta, c. 1800-c. 1940* (New Delhi: Tulika Books, 2012), 28-30.
98 Ranu Basu, "Colonial Municipal Policy and Indian Response: Municipal Government, and Police in Calcutta 1850-1872," *Bengal Past and Present* 190 (1981): 1-47; Harrison, *Public Health in British India*.
99 Nabaparna Ghosh, *A Hygienic City-Nation: Space, Community, and Everyday Life in Colonial Calcutta* (Cambridge: Cambridge University Press, 2020), 8.

In a lecture at the Bethune Society in 1862, Dr Norman Chevers explained the importance of sanitation, especially in combatting preventable diseases. He called sanitation 'a mere matter of common sense' with an instinctive quality of 'self-preservation'.[100] Calcutta was built upon a swamp rife with 'malarious venoms' of ague, dysentery, asthma, and cholera. In the absence of proper drainage, the organic matter rotting in the vast salt lagoon next to the city poisoned the air. Like many of his contemporaries, Chevers felt that sanitation in Calcutta was incomparably poor and propitious for pestilence. Managing supply of clean water was identified as one of the most challenging engineering problems of the time. The water in the river was 'frightfully impure,' filled as it were with 15000 corpses and carcasses a year and about 40 tons of excreta daily.[101] Utterly disappointed and worried about the state of sanitation, Chevers urged the Calcutta University to start a professorship of public health as part of the liberal education programme to teach the unknowing people in the 'unhealthiest city' in the 'most improvable country in the world.'[102] His concern was echoed in a macabre report from the *Indian Medical Gazette* in 1866 that highlighted cholera as one of the main causes of mortality among European seamen in Calcutta:

> There is a City in the east, its atmosphere is laden with malaria, its river is the reservoir of a deadly poison. Within its dwellings abide the seeds of a fruitful mortality: the harbour of the city is the Maelstrom of death. We need hardly add that the City is Calcutta… Years after year the brave sons of the sea are engulfed and perish in its vortex… Our metaphor points to that stern reality, the poison of cholera, which, discharged at various points in the shape of sewage upon the river-bank and into the centre of the stream, pollutes the water and the air; and, added to other malignant

[100] Norman Chevers, *The Sanitary Position and Obligations of the Inhabitants of Calcutta* (Calcutta: R.C. Lepage, 1863), 1-2.
[101] Ibid, 19.
[102] Ibid, 27.

> influences, common to all rivers in malarious countries at remote distances from the sea, converts a haven of refuge into a port of danger.[103]

The hygienic discourse associated with Indian port cities, especially sailortowns, necessitated sanitary regulation of seamen's living conditions and drinking habits. Ishita Pande has argued that colonial cities emerged as a new object of analysis and intervention with the threat of cholera looming large. Surgeons and medical superintendents of hospitals examined the topographic understanding of the disease and generated detailed statistics on disease prevalence, hospital admission, and mortality.[104] Pande says that by emphasising the need to make Calcutta more sanitary and healthy, Chevers championed the liberal colonial project of civilising the 'backward', 'ignorant' and 'unclean' native. The feeling of responsibility and the urge to govern the native inhabitants of the city, who often failed to understand the social and health benefits of sanitation, guided the imperial ideology of replacing the dual city with a sanitary city. The boundary between the black and white cities was dispensed with between 1830s and 1850s when British colonial ideas of free trade and 'liberal racialism' were in vogue.[105] The 'shock' of cholera had the biggest impact on this decision. The fear and panic around surrounding the cholera pandemics encouraged the city's administrators understand the disease's pathology and fight it with sanitation.

The Bengal government followed the British model in developing urban sanitation systems through improved drainage, water filtration and sewage disposal. Provision of clean and pure water became an essential part of sanitation in the 1840s. It was embedded even more firmly within health reforms as the popularity of cholera's waterborne origin theory increased

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103 "Cholera in the Port," *Indian Medical Gazette* 1, no. 7 (July 1866): 190-91.
104 Ishita Pande, *Medicine, Race and Liberalism in British Bengal: Symptoms of Empire* (London and New York: Routledge, 2010), 103.
105 Ibid, 97-98.

in the 1850s.[106] The ideas of contagion and contamination undergirding many of these initiatives were most visible in the regulations placed upon the urban poor, who were susceptible to contagious diseases owing to the overcrowding and squalor of their habitats.[107] Unlike the British Parliament, the Government of India had fewer conflicts with the commercial interests of private companies. In the 1850s, it started grappling with the idea that contamination and environmental conditions aided the spread of epidemics, but the idea of segregating Europeans from Indians to protect their health was manifested through town planning in the eighteenth century.

The squalor registered in British imagination was all the more reason to protect the port of Calcutta and the shipping industry as the colonial state's link to its homeland and an important hub of global commerce. Dr Hugh Macpherson, Inspector General of Army Hospitals in India, produced a report on the mortality of Europeans in Calcutta from 1856 to 1860, in which he estimated that as many as 716 European Protestants died of cholera. The city's floating population that included mainly seamen accounted for 76 per cent of cholera victims.[108] He noticed a remarkable change in the behaviour of ship captains, who were now observing precautions, and seamen, who were more sober and steady than ever, but this was not enough to prevent cholera. He considered certain anchor sites along the river Hooghly to be hotbeds of cholera. Colvin's Ghat, situated in close proximity to the mouth of a long sewer, was particularly notorious, as were Thompson's Ghat, Tolly's Nullah, Cooly Bazar, Fort Point and Armenian Ghat. He concluded that though none of these sites were perennially disease-prone, the recurrence of highly infectious diseases like cholera after a brief hiatus of one or two

106 John Broich, "Engineering the Empire: British Water Supply Systems and Colonial Societies, 1850-1900," *Journal of British Studies* 46, no. 2 (2007): 346.
107 Roy Porter, *Disease, Medicine and Society in England, 1550-1860* 2nd ed. (Basingstoke: Macmillan, 1993), 55-57.
108 Hugh M. Macpherson, *On the Mortality of Calcutta during the Twenty Years Ending with 1860* (Calcutta: s.n., 1861).

years in these areas rendered nearly vessels vulnerable to 'this most unwelcome visitor.'[109] A pattern was still difficult to establish since sometimes seamen visiting the relatively safe Esplanade or ships anchored away from the riverbank were found have been attacked by cholera to a greater extent than seamen or ships located closer to the designated danger zones. In 1858, 22 'Protestant' seamen died of cholera in the Sardinian frigate *Amazona* that was moored in Esplanade. The rest of the seamen were evacuated to prevent further loss of life. Similarly, when cholera broke out on board *Hastings* and spread to other vessels in the port of Bombay, the entire crew were evacuated and the ships thoroughly cleaned.[110]

Since cholera was associated with fluctuation in temperature and cold wind, the calamitous cyclone in Calcutta in 1864 was suggested to have aggravated the disease in the city.[111] Certain localities such as Flag Street were believed to have turned into a nursery of cholera. The Medical College Hospital, situated near Flag Street in the centre of the city, admitted more than twice as many sailors as the General Hospital. Dr Chevers estimated that every year as many as ten per cent of the sailors entering the Calcutta port died in the city.[112] Filth was considered the 'visible representation' of cholera.[113] As Ernest Hart, Chairman of the National Health Society, remarked, 'Cholera [was] a filth disease, carried by dirty people to dirty places, and there spread by dirt and the use of the dirty water. With pure water, pure air, pure soil, and pure habits, cholera need not be feared.'[114] The use of unfiltered water by the local people for cooking and drinking posed a great challenge to public health.

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109 Ibid.
110 "India," *The Times*, October 3, 1849, 6.
111 James Gastrell and Henry Blanford, *Report on the Calcutta Cyclone of the 5th October 1864* (Calcutta: O.T. Cutter Military Orphan Press, 1966), 126.
112 Norman Chevers, *On the Preservation of the Health of Seamen* (Calcutta: Military Orphan Press, 1864).
113 Pratik Chakrabarti, "Purifying the River: Pollution and Purity of Water in Colonial Calcutta," *Studies in History* 31, no. 2 (2015): 186.
114 Ernest Hart, "Cholera: Where it Comes from and How it is Propagated," *British Medical Journal* 16, no. 96 (July 1, 1893): 1.

John Strachey, president of the Sanitary Commission of Bengal, commented that the 'filthiness of Calcutta' was incomparable to even the 'filthiest quarters of the filthiest towns' in India or other countries.[115] He called Calcutta a 'scandal' and a 'disgrace' to a civilised government, where human corpses lay on the ground and floated in the river. He stated that as many as 5,000 human corpses, including 1,500 from government hospitals, were thrown into river.[116] Strachey was not alone in expressing such views about the horrifying health and sanitary conditions of Calcutta. Similar observations had already been made in previous reports by health officers. The Sanitary Commission acknowledged neglect of the living conditions and health of European seamen in Calcutta. It noted in a tone of regret that the municipal corporation and the Government of Bengal had done little to alleviate the high percentage of mortality among seamen in city. Since they had not maintained proper registers, the statistics on mortality are not available.[117] The Commission recommended providing seamen with comfortable accommodation and honourable amusement in the way Sailor's Homes had done.[118]

An anonymous author figuratively wrote that 'drunkenness, disease, and death broods over the portals of Lall Bazaar.'[119] Despite located close to the city's European quarter, this place was known for odour, filth, 'dust, dirt and diseases.'[120] The majority of the watering holes and dens were located on Lal Bazar, where the drains were mostly open and full of black putrid slime possibly accumulated for years. The marketplaces were generally disdained for their 'disgusting' appearance. Newspaper reports criticised the irregularity of sanitary supervision

115 John Strachey, "Minute by the President of the Sanitary Commission of Bengal of 1864," quoted in David Boyes Smith, *Report on the Drainage and Conservancy of Calcutta* (Calcutta: Bengal Secretariat Press, 1869). For an understanding of the social and moral symbolism of 'filth' in Victorian England, see Lee Jackson, *Dirty Old London: The Victorian Fight against Filth* (New Haven: Yale University Press, 2015).
116 *First Report of the Sanitary Commission of Bengal 1864-65*, 61.
117 Ibid, 66.
118 "Sailor Life in Calcutta," *Calcutta Review* 40 (1865): 466.
119 Ibid, 465.
120 "Calcutta," *Saturday Review of Politics, Literature, Science and Art* 19, no. 496 (April 29, 1865): 507.

and the failure to enforce sale of hygienic food. Although dining at dingy eateries in this locality was considered below the dignity of Europeans, such interactions between foreigners and locals continued unrestricted for a long time. Fatal disease rarely deterred seamen to spend time, 'sit and boose and eat the air' in the dens of gambling and drinking. The conditions were suitable for rapid circulation of epidemics. In 1865, eleven cholera victims were hospitalised from the same house in Bow Bazar within a few weeks. The Calcutta Municipality was harshly criticised for being a body of 'wrong-headed men who muddle each other and do no earthly good for the public.'[121] Major G.B. Malleson wrote that such situations demanded constant care and vigilance by both the police authorities and the municipality.[122] Chevers recommended better drainage along Flag Street to prevent accumulation of putrid water.[123] The association of exposure to extreme weather and drinking habits to cholera had been disowned by surgeons by 1875. They were now more concerned with the purity of drinking water, accepting Snow's theory of waterborne cholera.

The deplorable condition of seamen mobilised great anxiety among the politically and socially conscious British at home and away, who became concerned about the young British men who travelled across continents to make their country prosperous. Especially the newspaper reports and the missionaries brought to notice the unacceptable living conditions of sailors in the hot tropical countries, in this case India. A correspondent to the *Friend of India* wrote that sailors were neglected in comparison with soldiers, whose achievements were celebrated vigorously, especially after 1857, in government blue books, newspapers and pamphlets. Death and disease among the army were given more importance. Questioning the public health measures of the colonial government, he asked,

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121 Ibid, 507.
122 G.B. Malleson, "The State of the Sailors in Calcutta," British Library IOR: P/437/29, Government of India, Home Department Proceedings, Marine 1866, No. 18.
123 Chevers, *On the Preservation of the Health of Seamen*, 51.

> What does India do for the sailors who carry to and fro the wealth which enriches her? Nothing that can be appreciated. Calcutta, Bombay and Madras are all bad alike and all complain equally...choleraic drains, a life-destroying sun, drugged brandy, brothels exceeding in beastliness the pictures of juvenal, robbery under the name of discount and charge on bills and notes.[124]

Such campaigning entrenched the image of seamen as helpless victims and propagators of disease in as ship after ship suffered from contagious or infectious diseases. Surgeons contended that seamen were not adequately supported by health authorities, which endangered not only seamen but also passengers and other people they came into contact with.[125] Harry Leach, the resident medical officer of the hospital ship *Dreadnought* mentioned that the 'unsatisfactory' condition of seamen of Britain had attracted lot of attention and was often discussed in periodicals. He pointed out that the scarcity of 'competent' sailors, coupled with the rise in wages, threatened the commercial interests of the merchant classes. Calling the Merchant Shipping Act 1854 a 'maze' of confusing clauses and amendments, he explored how it was abused by the shipowner, master, mate, as well as seamen. The Act failed to deliver the provisions of accommodation and health. The 'sea as a service' was so 'unpopular' that only one percent of the entire Britain's population were sailors. But due to the requirement for greater number of sailors and a lack of Britain's own men agreeing to go to the sea, there was an influx of inferior quality of sailors and also the ships being filled with foreign seamen, which not only out the cargos and the safety of the ships in danger but also affected the political security of the British empire. The ship owners too wanted to improve the prevailing conditions of the seamen, in the wake of having to pay higher wages.[126] He considered endemic dysentery in India and China to be preventable, and expressed regret that proper care or seamen in Calcutta, Hong Kong and other Asiatic ports could have saved many lives. He also suggested

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124 "The English Sailors in India," *The Friend of India,* April 6, 1865, 392-93.
125 Smith, "Sailors as Propagators of Disease," 447-53.
126 Harry Leach, *A Report on the Hygienic Condition of the Mercantile Marine, and on the Preventable Diseases of Merchant Seamen* (London: Arthur M. Walker, 1867), 5-6.

that seamen should avoid drinking 'filthy mixtures of rum, arrack, sangaree' to protect themselves from fatal consequences.[127]

As the number of deaths of cholera mounted, the quality of drinking water came under scrutiny as cholera was by now linked with consumption of unfiltered water.[128] A report in the *Indian Medical Gazette* pointed out that each of the 22 sewers in Calcutta carried its refuse liquid and waste matter into the river Hooghly. The water seamen consumed from the river was laden with these waste materials, a fact Macpherson ignored.[129] Despite being an expert on cholera and venting on the close relationship between the sewers and the disease, Macpherson averred that ships stationed closer to the shore and near the mouths of the sewers were more susceptible to cholera, without properly drawing any causal relationship.[130] He stated that the only way of protecting seamen from cholera was to stop them from going to the shore (Calcutta port) and to send them off to sea, as had been done several times following the success of this method during an epidemic in Malta and at the Black Sea during the Crimean War. He concluded, 'on the whole it may be said that sailors get Cholera by visiting Calcutta and lose it by going to the sea.' He said that despite having known the river water to be unfit for drinking, ship captains were quite contented with it and 'never' on their outward journey complained about it or assign any health problems to it. Strangely, none of the invalids suffering from chronic diarrhoea ever accused the river water for it.[131] Thus we find that the *Indian Medical Gazette* wrongly pointed out that Macpherson attached little importance to using the water from the Hoogly as a cause of cholera.[132] Rather, we find that Macpherson criticised seamen and ship captains for not realising the threat from the impurities contained in drinking water in

127 Ibid, 19-20.
128 Chevers, *On the Preservation of the Health of Seamen*, 41.
129 "Cholera in the Port," *Indian Medical Gazette* 1, no. 8 (August 1866): 225.
130 Ibid.
131 John Macpherson, *Cholera in its Home* (London: John Churchill and Sons, 1866), 26-27.
132 "Cholera in the Port," 226.

Bengal that manifested during the journey back.[133] The condition of drinking water seemed to have improved manifold as ship surgeons who were critical of almost every aspect of Calcutta praised the quality of its drinking water. The surgeon of the ship HMS *Glasgow* wrote in 1875:

> Whether the cholera poison be the product of animal or vegetable decomposition, or whether it be conveyed into the system through the alimentary or respiratory surfaces, Calcutta contains all the factors essential to its development and propagation, in abundance… 1st. Alluvial soil… always prolific in malarial emanations. 2nd. Insanitary condition of the native quarter… where the gutters are constantly overflowing with sewage matters… 3rd. Direct contamination of the river atmosphere, and indirectly that of the city, by gases of animal decomposition, emanating from the bodies of Hindoos thrown into it, or the parent river Ganges, for burial… 4th. The water supply, which we found very good, and free from organic impurities… The more ignorant of the natives cannot be made to comprehend the benefit conferred by pure water, and very frequently prefer drawing their supply from the nearest tank, the receptacle, in all probability, of all sorts of filth, sewage, and even cholera dejecta. Water thus procured is often used in the manufacture of soda water and other beverages sold in the bazaar, to men on leave, and there can be no doubt that most of the cases of cholera contracted by men-of-war's men on shore, originate in this manner…the bazaar people are forbidden under heavy penalties to sell spirits or any other drink to soldiers. It would be a great boon if the same prohibition were applied to seamen.[134]

The report suggested all Indian and Europeans emulate the example of Bombay in the matter of drainage and pure water supply, which he considered 'the most potent antidotes of cholera.'[135] In 1876, official reports downplayed the role of polluted water in precipitating cholera, arguing that the water consumed by the people of London was far more impure than the water of Calcutta. A chart published in the Accounts and Papers of the House of Commons

[133] Macpherson, *Cholera in its Home,* 28.
[134] *Statistical Report of the Health of the Navy for the Year 1875*, 227-28.
[135] Ibid, 229.

showed that the water in Calcutta contained 15.79 parts impurity in 100,000, whereas the figures for the water supplied by the Southwark Company and the New River Company in London in 1870 were 26.19 and 26.43 respectively. The report placed great emphasis on the problem of drainage in slum areas, where 'all the refuse, both of the house and cook room, is thrown into open ditches filled with putrefying matter and a black greasy slime often several feet in depth.'[136] The water sources in these areas were usually located in close proximity to latrines, and thus easily contaminated. It was the wrong use rather than quality of water that caused health problems.

In a Memorandum in Vol. IX of the *India Office Sanitary Reports, 1876*, the Commission reported the total number of European, American and Eurasian seamen in the port of Calcutta as 25,448 and the number of Asiatic seamen as 22,179. The report included a table of the main diseases and number of hospital admissions of the undistinguished category of European seamen. They were cholera (110), enteric fever (9), malarious fever (244), simple fever (32), variola (none), sunstroke (3), scurvy (29), dysentery (137), diarrhoea (148), liver disease (27), venereal disease (133) and all other diseases (966), totalling 1,838 patients. The report specifically noted that 53 of the cholera patients died. It further mentioned that 46 of the patients were from vessels anchored to the north of Fort Point, whereas 55 were from those anchored down south. The vessels on the lower part of the river were situated closer to where the sewage from Tolly's Nullah and the Fort poured into the river, contaminating the water that was used for washing. The report put the blame on the suburban municipality for not adequately responding to the problem despite the Lieutenant Governor's insistence. In 1876, the municipal water was used by 18,980 men on board 949 ships, nearly four times the figure in the preceding

136 *Reports on Sanitary Measures in India in 1876-77: Together with Miscellaneous Information up to June 1878, Vol. X* (London: Eyre and Spottiswoode, 1878), 184.

year.[137] There were instances of river sewage seeping into the ship's bilge and causing the outbreak of disease after the ship started its journey.

In 1880s, when cholera was rife in Calcutta, it was often said in jest that drinking of the 'local firewater' immunised seamen from the disease.[138] The continuance of the menace was evident from a report in *Lancet* from 1887 that blamed the high death rate from cholera, around 11.1 per 1,000, among European sailors on 'breathing its foul air, and partaking of drinks diluted not always with hydrant water.'[139] It noted that such atrocious environment was hard to find elsewhere. Yet, despite being cautioned seamen continued using water from the river and other suspicious sources, and falling victims to attacks of cholera. For instance, the second officer of the *Crofton Hall*, anchored at Budge Budge, prepared some fresh brine with water acquired from the river to preserve beef on 20 January 1892. The crew began eating this beef as the ship began its journey in the first week of June, and 23 out of the 29 seamen immediately showed symptoms of cholera, six of them dying within a week. The ship turned back to Calcutta for want of enough seamen to complete the journey. Ten of the remaining affected seamen were sent to the General Hospital for treatment. The ailment was declared to be different from 'true cholera' but an examination of the brine in which the meat was preserved showed the presence of 'atypical varieties' of the cholera-inducing organism.[140] Thus, cholera and its various manifestations imposed an overwhelming challenge of death and distress that could not be overcome before the beginning of the twentieth century.

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137 Ibid, 185.
138 Stan Hugill, *Sailortown* (London: Routledge and Kevin Paul, 1967), 315.
139 "Health of Calcutta," *The Lancet* 130, no. 3349 (November 5, 1887): 931-32.
140 "The Bacteriology of the 'Crofton Hall' Tragedy," *Indian Medical Gazette* 27, no. 12 (December 1892): 374-75.

Conclusion

This chapter has shown how the attitude towards European seamen's health changed in the nineteenth century, through the course of which they transformed from sanitary subjects into disease carriers. The threat of the diseases of the East that could emerge in pandemic form was perhaps the most important factor in bringing about the change in the government's outlook. The British government resisted the idea of quarantine for a long time in the interest of the shipping industry and commercial enterprises. Their policy was not accepted wholeheartedly by the Government of India, which supported quarantine and strict medical inspection of vessels in the late 1870s, indulging the concern of an international community. This caused friction between the governments of Britain and India, both of whom decided to favour their national interests in their official quarantine policy.

The examination of the experiments with various forms of remedies and sanitary regulations has shown how ship's surgeons and doctors on shore engaged with a variety of cholera pathologies in the nineteenth century, stressing miasma, putrefaction, contagion and transmissibility of pathogen through air or water. The use of unconventional treatments in the absence of approved materials or when the surgeons could not match symptoms with textbook knowledge, indicates that situational demands countermanded medical dogma. Ship's surgeons showed great flexibility in subscribing to both nervous and germ theories of disease than many of their land-based colleagues.

The chapter also discussed sanitary reforms aimed at reducing cholera by prohibiting the sale of adulterated liquor. In the 1850s, the Government of India adopted a sanitarian position in public health reform, giving importance to tackling problems of dirt, disease, filth and sewage, raising the standards of cleanliness and hygiene, and instituting sanitary engineering in port cities and sailortowns. The reforms included attempts to prevent the

infection of seamen and the possibility of them infecting others, and embedding Victorian standards of civilised living and public health.

Finally, this chapter examined links between Btritish India and the Empire more generally, connecting the beginning of water filtration in India to the identification of the contaminated water as a source of cholera in Britain. Since the quality of water in Calcutta was not necessarily worse than that of London, sanitary reformers in Indian port cities found a more convenient scapegoat in the squalid condition of the sailortown, poor drainage that led to decaying organic material mixing with water, and the use of impure water in inducing seamen to consume alcoholic beverages. These drinks were known to cause cholera, diarrhoea and dysentery, and their popularity prompted the colonial state to crack down on unlicensed liquor producers and vendors. Cholera epidemics were thus identified as the culmination of several racial, political and environmental factors.

Conclusion

This study has shown that despite seamen's importance as an imperialising force, attention to their health and wellbeing was scant compared to the largescale sanitary supervision of the armed forces and the working poor in Britain. The British government had 'comparatively little concern with ship-borne infection from India' in the 1830s-1850s despite being aware that coastal communities were the first to contract cholera in the 1830s epidemic.[1] Merchant shipowners and shipping corporations often ignored naval reforms and seamen's health. In a pamphlet entitled *The Grievances of Our Mercantile Seamen* (1845), the outspoken critic of the slave trade Thomas Clarkson wrote that escaping brutal captains was a reason for seamen deserting ships. Captains often discharged seamen in ports to avoid paying them wages. Speaking of seamen with British nationality in particular, Clarkson criticised the government for failing to protect their civil privileges as citizens. His admiration for missionary work also highlighted the British government's inefficacy in ameliorating seamen's living standards and protecting the latter from a life in crime and 'vices.'[2] In the 1840s, medical practitioners began to advocate sanitary inspection of ships and and balanced diet for seamen. The British government began passing sanitary regulations for ships in transit, aiming to reduce the impact of atmospheric conditions such as filth and effluvia that were considered responsible for cholera, among other diseases.

The threat of cholera was a major topic of discussion in all the eight International Sanitary Conferences between 1851 and 1894. These conferences marked the first attempt to address and contain the 'propagation of disease' through international co-operation. Influenced in part by these conferences, and partly by commercial needs, the British government

1 Mark Harrison, *Contagion: How Commerce Has Spread Disease* (New Haven and London: Yale University Press, 2012), 140.
2 Thomas Clarkson, *The Grievances of Our Mercantile Seamen: A National and Crying Evil* (London: Longman, Rees, Orme, Brown, 1845).

implemented a number of sanitary measures in colonial port cities – Calcutta, Bombay and Madras – and passed the Native Passenger Act for British ships carrying pilgrims.[3] European seamen's agency as propagators of disease came up a number of times in the discussions, and instruments of regulating diseased bodies such as Bills of Health were discussed in detail. The reduction of journey times and larger vessels resulting from the transition from sail to steam had profound implications not only for trade and commerce but also for rapid spread of disease. The British government's attention to seamen's health increased with the risk of cholera transmission through maritime routes.

In response to mounting complaints about the poor state of merchant shipping, as well as the cholera epidemic in 1865 and the International Sanitary Conference of 1866, the British government undertook two major shipping and health reforms. An anonymous article in the *British Medical Journal* (January 12, 1867) titled 'Report on the Hygienic Condition of the Mercantile Marine and on the Preventable Diseases of Merchant Seamen', and the first meeting of the Society for Improving the Conditions of Merchant Seamen (February 27, 1867) set the tone for greater attention to the living and working conditions of merchant seamen. The Merchant Shipping Act 1867 promoted several reforms for improving merchant seamen's health. More surgeons were appointed, medical treatises published, medical guides and medicine chests made mandatory for ship captains to carry on a voyage, better diet for the crew suggested, and more individual space for seamen and general cleanliness of the ship advocated. The impact of these campaigns was two-fold: first, they sought to strengthen the British Empire by invigorating its workforce; and second, they endorsed greater regulation and control over seamen's body.

[3] Ibid, 30-31.

In the third quarter of the nineteenth century, from sanitary subjects, seamen came to be seen as propagators of disease and racial degeneration. The anxiety of preserving colonial trade and territories as well as racial physiologies and prestige played a significant role in the increased surveillance of seamen's health. The fear of the tropics, replete with imaginaries of poisonous food and drink, not to mention detrimental climate, further consolidated the health imperative.[4] The complaints about the neglect of seamen continued even after the passing of Merchant Shipping Acts and their amendments from the mid-nineteenth century onward. Regardless of the naval reforms, merchant ship-owners infringed the rules of providing adequate lime juice, fresh vegetables and good quality food, clean water, well-ventilated and hygienic quarters, and regular wages to seamen.[5]

The decline in the number of 'seaworthy', i.e., healthy and disciplined, crew in the last quarter of the nineteenth century validates the insufficiency of naval reforms and maritime medicine. A number of naval officers and government ministers acknowledged a considerable deterioration of the British seamen in skill and conduct. In 1876, a report published by the Committee of Shipowners, Liverpool, based on the information provided by committee

[4] European seamen were also protected from venereal diseases, which could be not discussed in this thesis due to a surprising absence of relevant archival documents. Lock hospitals were built in Britain and its colonies since the eighteenth century to treat venereal diseases, either inside army cantonments or in marketplaces where a surgeon and a number of assistants would treat patients, usually ailing prostitutes. Erica Wald says that this category of local women was delineated in the context of the decline of longstanding monogamous relationship between European men and Indian women and the corresponding increase in short-term sexual gratification favoured by soldiers. The failure of surgeons to restrict the sexually transmitted diseases arising out of such contacts forced the imperial authorities to enact laws to regulate the health of the women in such relationships, who were now officially defined as prostitutes. In the wider colonial context, British officials in various parts of the world, especially in West Africa, showed a tendency to brand as prostitutes any woman who had sex with soldiers and sailors in exchange for gifts or money. They failed to understand the local cultural norms related to sexuality, especially the longstanding local tradition of men rewarding women for physical relationship. The anxiety regarding the proliferation of venereal diseases led to the Contagious Diseases Act in 1864 and its subsequent amendments. By this Act, the police across the British Empire could have any woman strolling near military and naval barracks detained and examined for venereal diseases. Erica Wald, "From Begums and Bibis to Abandoned Females and Idle Women: Sexual Relationships, Venereal Disease and the Redefinition of Prostitution in Early Nineteenth-Century India," *The Indian Economic and Social History Review* 46, no. 1 (2009): 5-25; Charles Ambler, "The Specter of Degeneration: Alcohol and Race in West Africa in the Early Twentieth Century," in *Global Anti-Vice Activism, 1890-1950: Fighting Drinks, Drugs, and 'Immorality'*, eds. Jessica Pliley, Robert Kramm and Harald Fischer-Tiné (Cambridge: Cambridge University Press, 2016), 116.

[5] Michael Quinlan, "Precarious and Hazardous Work: The Health and Safety of Merchant Seamen 1815-1935," *Social History* 38, no. 3 (2013): 295.

members said that 89% believed that the quality of seamanship had regressed, 65% thought seamen's physical condition had worsened, and 71% said seamen were now more insubordinate.[6] In 1890, leading the discussion on seamen's health at the annual Seamen's Congress in Glasgow, Samuel Plimsoll, the president of the Seamen's Union, said that one of the reasons of the increasing number of scurvy cases among merchant seamen was the supply of food declared unfit for the Royal Navy. He advocated mandatory inspection of provisions for all merchant ships. His speech also mentioned that merchant seamen, especially firemen, fell ill more frequently onboard understaffed ships, since the burden of work was greater than usual.[7] Profit-oriented shipowners were no less a challenge than disease for sanitary reformers, doctors, and missionaries. The discussion at the Glasgow meeting reflected the sentiment expressed in a report published in *The Hospital* journal in 1889:

> Does Britannia really care for the men by whose aid she rules the waves? Theoretically, in song and sentiment, yes; practically, it was long doubtful. We have been a maritime nation for at least three centuries; yet it is only since this century began that there has been any real attempt to provide for the comfort and welfare, physical and spiritual, of Jack ashore. As if it were not enough that he should face all manner of dangers on the sea, he was allowed, when he came to port and went ashore "with his pockets full of dollars on the spree," to drift into low lodging-houses, where harpies of every sort took advantage of his ready good nature till nearly every penny of his gains had gone to them.[8]

The report, giving credit to Sailors' Homes for improving seamen's health, dismissed any contribution made by Merchant Shipping Acts and maritime medicine. Were the latter as inconsequential as supposed? Did the report reflect the author's doubt of reforms and medicine, or simply his disgruntlement with the stark contrast between necessity and accomplishment?

6 "Has the British Seamen Deteriorated?" *The Contemporary Review 28* (August 1876): 393-4.
7 "Sanitation and the Seamen's Congress," *The Lancet* (October 18, 1890): 826.
8 "A Word for Our Seamen," *The Hospital* (February 23, 1889): 327.

The irregularity of employment, and mobility, made regulating seamen's health a challenge. The lack of class consciousness and a union to voice their demands, except in a few instances of organised protest on board ships and on the streets, meant seamen remained an expendable workforce in the nineteenth century. Historians have argued that British maritime labour policies helped the transition from a mercantilist regime to a free trade empire, and in the process regulated seamen through a paternalist work contract.[9] Seamen were dependant on the goodwill of individuals like Capt. Henry Toynbee and institutions such as the Seamen's Hospital Society. The narratives of the neglect of seamen's health indicate that sanitary reforms were not adequate. Seamen's living quarters on many vessels were compared to cave-dwellings in prehistoric times or prisons, where one could drown too. In the first quarter of the twentieth century, the Medical Officer of the London wrote:

> It was now accepted for a fact that unhealthy living conditions degenerated seamen both physically and morally. This country is dependent for its food supply largely upon our mercantile marine, and for a large proportion of its wealth to the exportation of manufactured goods too other countries. It would therefore only be expected that men engaged in such important work in connection with the welfare of this country should receive more attention at the hands of the legislature if not at the hands of their employers.[10]

In the opinion of a number of early twentieth century surgeons, the Royal Navy was not as efficient in preventing diseases as it claimed. In his presidential address at a meeting of the Society of Tropical Medicine and Hygiene in 1919, Dr W.J.R. Simpson recounted that want of simple conventional provisions such as fresh vegetables and cinchona bark had led to scurvy in Mesopotamia (though it happened to the Indian Army rather than the Navy) and malarial

9 Leon Fink, *Sweatshops at Sea: Merchant Seamen in the World's First Globalized Industry, from 1812 to the Present* (Chapel Hill: University of North Carolina Press, 2011), 55-58.
10 Herbert Williams, "Insanitary Conditions on Ship Board," *Journal of the Royal Sanitary Institute* 36, no. 3 (1915): 123.

fever in Greece during the Great War.[11] Though the Navy did better than the merchant services in protecting their seamen, they were not flawless. Later, in an article in the *Edinburgh Medical Journal* in 1946, Dr J.A. Nixon argued that seamen's health was undervalued in proportion to their hard work and the amount of risk in seamanship. The death rate among seamen between the ages 20 and 64 was still twice the standard mortality rate. Seamen fell to tuberculosis nearly four times the general rate for sedentary people in the same age group. The previous year, at the Annual Conference of the National Union of Seamen, Scottish Labour Party MP Hector Hughes had apparently described merchant seamen as the 'Cinderellas of the Services, serving everybody but themselves and neglecting their own interests.'[12] These statements suggest that the lives of European seamen had not fundamentally changed over the centuries despite health and sanitary reforms. The failure of reforms also highlights the British Empire's incompetence in reconciling different medical theories of disease, the wants of doctors and shipowners, and the needs of seamen in different regions.

As this thesis has shown, maritime health intervention in the tropics was a tool of imperial politics as well as a means of understanding the physiological impact of tropical climates and experimenting with tropical hygiene. Through an analysis of the transnational nature of the regulation of seamen's wellbeing, it has developed a conceptual framework for understanding the connected emergence of tropical and maritime hygiene, and the importance of sanitary reform to empire-building. Ships were a productive site for medical practitioners to closely examine the impact of climate upon a large number of people in transit between temperate and tropical regions. The effect of environment was felt most acutely during oceanic journeys as the ship's path crisscrossed various climatic zones. This made ships both hazardous

[11] W.J.R. Simpson, "Some Considerations Regarding Preventable Diseases and their Prevention," *Transactions of the Society of Tropical Medicine and Hygiene* 13, no. 3 (October 1919): 36.
[12] J.A. Nixon, "The Health and Welfare of the Merchant Seaman," *Edinburgh Medical Journal* 43, no. 4 (April 1946): 145.

and a favourable place to study and test medicine. The knowledge of symptoms, nutrition, morbidity and climate expanded the understanding of the aetiology of disease. The spaces of the sailortown were reorganised by health reform as the colonial state and missionaries provided proper food and accommodation for seamen, closed illegal drinking dens, revoked licences of unscrupulous owners who sold adulterated or low-quality drink, and general cleanliness. These measures did not reduce seamen's illness and mortality to the extent expected. Preservation of the sanctity of racialised bodies was arguably a strong motivation behind these measures. Indian port cities in particular were known as places of pestilence and nodes of disease dispersion in the nineteenth century.

This study has expanded the knowledge of seamen's health in a global maritime history context by focusing on imperial non-state actors alongside the government. The regulation of seamen's bodies by the British colonial state, Christian missionaries and indigenous people in India has allowed us to comprehend the complexity of imperial patronage, paternalism and benevolence as evidenced through various welfare measures such as the Sailors' Home, temperance societies and libraries for seamen, floating chapel for spreading the message of the gospel, and establishment of hospitals. The study of missionaries, the most puissant advocates for better treatment of the men who enabled Britain to 'rule the waves', has highlighted the significance of Asian maritime spaces to their global proselytising agenda. Thus, it has added a new dimension to existing studies of the construction of identity, cultural imperialism and networks of mobility in the eighteenth and nineteenth-century that had so far focused solely on the Atlantic and Pacific regions. The study of Indian sailortowns has outlined a new approach to the history of global sailortown culture. Its treatment of the transnational life of itinerant European seamen in the context of tropical regions and Indian port cities has developed our understanding of how the diseases of 'warm climates' shaped seamen's behaviour in Indian sailortowns.

In this thesis, seamen embodied the imperial bond that connected India and Britain. As an operative concept in maritime history, sailorhood has reflected and set the context for the study of maritime and tropical hygiene. More importantly, the British Empire's engagement with European seamen revises the conventional approach to them as a group of subordinates whom the government segregated from colonial society and often bracketed with the problematic class of Asian and white subalterns. On the contrary, seamen were looked upon as imperial agents who were unable to take responsibility for their bodies and needed full public health support. Such patronage was not uniform across the British Empire for want of the means of effective regulation. The complexity of this medical intervention explored in this work, however, has illustrated the importance of seamen to the consolidation of imperialism and tropical maritime hygiene.

More than the vicissitudes and impact, the dynamics of collaborative sanitary and moral regulation across the metropole and periphery have been the subject of this study. The actions of medical practitioners, naval authorities, sanitary commissioners, and missionaries in preserving the health of a mobile group of people, for whom the centre-periphery or empire-colony divides had little significance, demonstrate the importance of maritime health and hygiene in the making of the imperial tropics. Maritime hygiene affected not only the spaces of ships, but also the sanitation and regulation of urban areas frequented by seamen. The thesis has recovered some narratives of seamen's agency in their interactions with the administrative authorities. Although seamen's personal memoirs are hard to find, numerous sketches of their character and activities in the press helped create a sense of their lifeworld, with special emphasis on their health and moral wellbeing. The regulation of their behaviour by municipal and state authorities, alongside local police and charitable organisations, to maintain social stability was woven into the power dynamics of the British Empire.

Through its analysis of Calcutta as colonial port city, this thesis has shown how urban spaces were constructed, reconstructed, perceived and regulated in the colonial context. Seamen's presence effected major changes in the character of the Calcutta sailortown and the focus of urbanisation. Calcutta was by far the most important port city from the beginning of eighteenth century until the third quarter of the nineteenth century when Bombay emerged as the major commercial hub of British India. The shift in maritime and commercial traffic to Bombay did not reduce Calcutta's political importance as a context for the reproduction of British society and culture in the colony. The spaces of the sailortown were shaped by a negotiation of power between seamen and colonial and naval authorities. The imagination of sailortown was spatially connected with Lal Bazar and Garden Reach – two areas located the closest to anchorages, and full of taverns and boarding houses. The sailortown was not specifically segregated from the rest of the city; its expanse was delimited by a non-negotiable moral boundary imposed by the colonial state's ideologue. The characterisation of seamen's behaviour as bellicose and contemptible, and assigning an unsympathetic image to the places they frequented, established social limits on the acceptability of seamen as members of imperial ruling class. Seamen subverted official policies against disorder and illegal activities such as trade in illicit articles of consumption, and this discourse of the problematic seamen has remained entrenched in most representations, other than those produced by missionaries that claimed seamen's missions were successful.

The thesis has shown that hygiene did not necessarily improve seamen's capacity for labour, and the imperial biopolitical agenda of manning the maritime services with healthy seamen was not fulfilled. Within these limitations, however, the development of maritime hygiene throughout the nineteenth century was entangled with certain ideas of the tropics, tropical hygiene, sanitary environment of lived spaces, race, and imperialism. The resulting hygienic and sanitary innovations were products not only of imperial medicine, but also of

transnational connection of people, places and ideas. In this way, seamen were central to the history of imperial and colonial public health.

Bibliography

Manuscript and archival sources

British Library

Home Department Proceedings, Marine Branch.

Wellcome Library

Forbes, Charles. *Journal of Further Voyages for the P. & O. Company between Bombay, Singapore and Hong Kong, and on a Return Voyage to England, August 1854-June 1855*. MS5959.

West Bengal State Archives

Medical Department, Medical Branch.

Municipal Department, Medical Branch.

Marine Department.

Newspapers

Bengal Hurkaru (1831-1857).

Dundee People's Journal (1880).

Dundee, Perth, and Cupar Advertiser (1851).

Homeward Mail from India, China and the East (1868).

John Bull (1832).

Liverpool Echo (1880).

Madras Courier (1808-1809).

Morning Post (1867-1869).

Morpeth Herald (1880).

Sunderland Daily Echo and Shipping Gazette (1874).

The Friend of India (1824-1866).

The Globe (1871-1894).

The Shipping and Mercantile Gazette (1864).

The Times (1859-1876).

The Times of India (1838-1883).

Yorkshire Gazette (1850).

Periodicals

Alexander's East India and Colonial Magazine (1836).

Allen's Indian Mail (1847).

Association Medical Journal (1855).

Bengal Past and Present (1924).

British Medical Journal (1858-1893).

Calcutta Journal of Natural History (1845).

Calcutta Monthly Journal (1837-1838).

Calcutta Review (1845-1865).

Edinburgh Medical and Surgical Journal (1829-1839).

Edinburgh Medical Journal (1946).

Indian Medical Gazette (1866-1903).

Journal of the Royal Sanitary Institute (1915).

Journal of the Sanitary Institute (1896).

Journal of the Society of Arts (1875).

London Medical Gazette (1836).

Madras Journal of Medical Science (1851).

Madras Missionary Register (1838).

Medico-Chirurgical Transactions (1815).

Parbury's Oriental Herald (1838).

Provincial Medical Journal and Retrospect of the Medical Sciences (1842).

Provincial Medical Surgical Journal (1850).

Public Health (1891).

Royal United Services Institution Journal (1898).

Saturday Review of Politics, Literature, Science and Art (1865).

The Asiatic Journal (1828-1842).

The British and Foreign Medico- Chirurgical Review (1870).

The Calcutta Christian Observer (1824-1841).

The Chinese Repository (1839).

The Christian's Penny Magazine (1834).

The Contemporary Review (1876).

The Hospital (1889).

The Lancet (1832-1890).

The Leisure Hour (1854).

The Mariners' Church Gospel Temperance Soldiers' and Sailors' Magazine (1845).

The Medical Times (1840).

The Nautical Magazine (1871).

The Nautical Magazine and Naval Chronicle (1809-1867).

The Sailors' Magazine (1834-1879).

The Sailors' Magazine and Naval Journal (1834).

The Scots Magazine (1809-1813).

Transactions of the Epidemiological Society of London (1856-1895).

Transactions of the Medical and Physical Society of Bombay (1843).

Transactions of the Society of Tropical Medicine and Hygiene (1919).

Printed primary sources

Reports

"Statistical reports on the Health of the Navy for the Years 1830, 1831, 1832, 1833, 1834, 1835, and 1836, Part II." In *Parliament Accounts and Papers*. Vol. 5. 1841.

3rd Report of the Committee for the Establishment of a Fever Hospital. Calcutta: Bishop's College Press, 1847.

16th Annual Report of the Calcutta Sailors' Home. Calcutta: Military Orphan Press, 1854.

29th Annual Report of the Registrar-General of Births, Deaths, and Marriages in England (Abstract for 1866). London: George E. Eyre and William Spottiswoode, 1868.

38th Annual Report of the Registrar-General of Births, Deaths, and Marriages in England (Abstract for 1875). London: George E. Eyre and William Spottiswoode, 1877.

73rd Annual report of the Missionary Society of the Methodist Episcopal Church for the Year 1891. New York, 1892.

74th Annual report of the Missionary Society of the Methodist Episcopal Church for the Year 1892. New York, 1893.

90th Annual report of the Missionary Society of the Methodist Episcopal Church for the Year 1898. New York, 1899.

Abstract of the Proceedings of the Council of the Governor General of India, 1874, Vol. 13. Calcutta: Office of the Superintendent of Government Printing, 1875.

Abstract of the Proceedings of the Council of the Governor General of India, 1875, Vol. 14. Calcutta: Office of the Superintendent of Government Printing, 1876.

Annual Report of the Sanitary Commissioner for Bengal for 1868. Calcutta: Alipore Jail Press, 1869.

Annual Report on the Administration of the Bengal Presidency for 1863-64. Calcutta: Military Orphan Press, 1865.

Birdwood H.M. and H.J. Parsons eds. *The Acts of the Legislature in in Force in the Presidency of Bombay*. Vol. 6 *1873-1875*. Bombay: Education Society's Press, 1876.

Campbell Brown, J. *Report on the Calcutta Medical Institutions for the Year 1871*. Calcutta: Bengal Secretariat Press, 1872.

Evidence on Drunkenness, Presented to the House of Commons. London: Benjamin Bagster, 1834.

General Report on the Administration of the Bombay Presidency for the Year 1872-73. Bombay: Government Central Press, 1874.

Hewlett, T.G. *Report on Enteric Fever*. Bombay: Government Central Press, 1883.

House of Commons Debate 1850.

Moor, Edward. *Discipline and Expenditure of the Bombay Army*. Bombay: Courier and Gazette Presses, 1801.

Payne, A.J. *Report on the Calcutta Medical Institutions for the Year 1879*. Calcutta: Bengal Secretariat Press, 1880.

Pilcher, J.G. *Report on the Calcutta Medical Institutions for the Year 1892*. Calcutta: Bengal Secretariat Press, 1893.

Public Health Papers and Reports 1873.

Public Health Papers and Reports 1884.

Report of the Bombay Chamber of Commerce for the Year 1868-69 (Bombay: Education Society's Press, 1870).

Report of the Sanitary Commissioner for Madras 1869. Madras: Fort St. George Gazette Press, 1870.

Report on Measures Adopted for Sanitary Improvements in India during the Year 1868, and upto the Month of June 1869. London: Eyre and Spottiswoode, 1869.

Reports on Sanitary Measures in India in 1876-77: Together with Miscellaneous Information up to June 1878. Vol. 10. London: Eyre and Spottiswoode, 1878.

Sailors' Institute: Proceedings of a Public Meeting Held in Calcutta. Calcutta: Sanders, Cones & Co, 1863.

Smith, David Boyes. *Report on the Drainage and Conservancy of Calcutta*. Calcutta: Bengal Secretariat Press, 1869.

Statement Exhibiting the Moral and Material Progress and Condition of India, During the Year 1859-60. n.l.: House of Commons, 1861.

Statistical Report of the Health of the Navy for the Year 1875.

Statistical Report of the Health of the Navy for the Year 1877.

Statistical Reports on the Health of the Navy for the Years 1830, 1831, 1832, 1833, 1834, 1835 and 1836. London: William Clowes and Sons, 1841.

The Bengal and Agra Annual Guide and Gazetteer for 1841. Vol. 1. Calcutta: William Rushton & Co, 1842.

The Bengal and Agra Annual Guide and Gazetteer for 1842. Vol. 1. Calcutta: William Rushton & Co, 1843.

The Bombay Calendar and Almanac for 1842, Part 3. Bombay: Courier Press, 1842.

The Bombay Code. Calcutta: Office of the Superintendent of Government Printing, 1880.

Books and articles

'A Naval Medical Officer.' *An Exposition of the Case of the Assistant-Surgeons of the Royal Navy*. London: John Churchill, 1849.

Accum, Fredrick. *A Treatise on Adulteration of Food and Culinary Poisons, Exhibiting The Fraudulent Sophistications of Bread, Beer, Wine, spirituous Liquor, Tea, Coffee… And Methods of Detecting Them*. London: Longman, 1820.

Anderson, James. *Journal of the Establishment of Nopal, and Tuna, for the Prevention or Care of Scurvy, Dysentery, and Ulcers, on Shipboard, and Mitigation of Famine on Shore*. Madras: Madras Gazette Press, 1808.

Anonymous. *A Catalogue of Medical Books, Chiefly Those upon Diseases of Seamen, As Well As Those Incident to Hot Climates and in Long Voyages*. London, 1793.

Anonymous. *A Chinese Commercial Guide Consisting of a Collection of Details and Regulations Respecting Foreign Trade with China* 4th ed. Canton: Office of the Chinese Repository, 1856.

Anonymous. *Statement Respecting the Prevalence of Certain Immoral Practices in His Majesty's Navy*. London: Ellerton and Henderson, 1821.

Anonymous. *The Seamen's New Medical Guide*. Liverpool: Mitchell, Heaton and Mitchell, 1842.

Atkins, Thomas. *Reminiscences of Twelve Years in Tasmania and New South Wales, Norfolk Island and Moreton Bay; Calcutta, Madras and Cape Town; The United States if America and the Canadas*. Malvern: Advertiser Office, 1869.

Barrett, T.R. *Calcutta: Strange Memoirs – Foreign Perceptions*. Calcutta: Deep Prakashan, 2004.

Bateson, Alexander. *Tracts Relative to the Island of St. Helena.* London: W. Bulmer, 1816.

Balfour, Andrew and H.H. Scott. *Health Problems of the Empire: Past, Present and Future*. London: W. Collins, 1924.

Bellew, H.W. *Cholera in India, 1862-1881*. Calcutta: Bengal Secretariat Press, 1884.

Blaiklock, G. *The Alcohol Factor in Social Conditions: The Report of an Inquiry Presented to the National Temperance League*. P.S. King & Son, Westminster, 1914.

Blane, Gilbert. *Observation on the Diseases Incident to Seamen.* London: Joseph Cooper, 1785.

Brassey, Thomas. *Mercantile Marine and Navigation from 1871 to 1894*. London: Longmans, Green & Co., 1894.

Brenton, Edward Pelham. *The Naval History of Great Britain, from the Year 1783 to 1786*. Vol. 1. London: Henry Colburn, 1837.

Chakrabarty, Satyesh C. *Port of Calcutta: 125 Years 1870-1995*. Calcutta: Calcutta Port Trust, 1995.

Chevers, Norman. *On the Preservation of the Health of Seamen*. Calcutta: Military Orphan Press, 1864.

Chevers, Norman. *The Sanitary Position and Obligations of the Inhabitants of Calcutta*. Calcutta: R.C. Lepage, 1863.

Chisholm, Colin. *A Manual of the Climate and Diseases of the Tropical Countries*. London: Burgess and Hill, 1822.

Chittar, Shantaram D. *The Port of Bombay: A Brief History*. Bombay: Bombay Port Trust, 1973.

Clarke, Robert. *Sierra Leone: A Description of the Manners and Customs of the Liberated Africans*. London: James Ridgway, 1843.

Clarkson, Thomas. *The Grievances of Our Mercantile Seamen: A National and Crying Evil*. London: Longman, Rees, Orme, Brown, 1845.

Curtis, Charles. *An Account of the Diseases of India, As They Appeared in the English Fleet, and in the Naval Hospital at Madras, in 1782 and 1783.* Edinburgh: W. Laing, 1807.

Cutbush, Edward. *Observations on the Means of Preserving the Health of Soldiers and Sailors.* Philadelphia: Thomas Dobson, 1808.

Davis, R. *Cox's Companion to the Sea Medicine Chest, and Compendium of Domestic Medicine*, 33rd ed. London, 1845.

Edgar, John. *Digest of Evidence before the Committee of Parliament*, on the Extent, Causes, and Consequences of Drunkenness. Belfast: Thomas Mairs, 1835.

Fletcher, Frederick D. *The Seaman's Medical Friend*, 2nd ed. Liverpool: W. Fearnall, 1857.

Gastrell, James and Henry Blanford. *Report on the Calcutta Cyclone of the 5th October 1864.* Calcutta: O.T. Cutter and Military Orphan Press, 1966.

Girdlestone, Thomas. *Essays on the Hepatitis and Spasmodic Affections in India: Founded on Observations Made whilst on Service with His Majesty's Troops in Different Parts of that Country*. London: J. Murray, 1787.

Gregory, Henry H. *A Companion to the Sea-Medicine-Chest; Consisting of Plain and Explicit Directions for the Treatment of the Various Diseases Incident to the Nautical Life, in all Climates*. London, 1841.

Griffin, Edward. *The Claims of Seamen*. New York: J. Seymour, 1819.

Gustafson, Axel. *The Foundation of Death: A Study of the Drink-Question*. London: Kegan Paul, 1884.

Hadlow, Henry. *Directions for the Use of the Sundry Medicines and Utensils Contained in the Sea Medicine Chest.* 8th ed. London, 1860.

Hardwicke, William. *Notes and Commentaries on Public Health*. London: Nicholls Bros, 1867.

Hassall, Arthur Hill. *Adulterations Detected or Plain Instructions for the Discovery of Frauds in Food and Medicine* 2nd ed. London: Longman, Green, Longman, and Roberts, 1861.

Haughton, James. *A Plea for Teetotalism*. London: William Tweedie, 1855.

Hobbs, H. *John Barleycorn Bahadur: Old Time Taverns in India*. Calcutta: Thacker, Spinck & Co, 1943.

Horner, Gustavus R.B. *Diseases and Injuries of Seamen*. Philadelphia: Lippincott, Grambo & Co, 1854.

Huxham, John. *An Essay on Fevers.* London: S. Austen, 1750.

Johnson, James. *The Influence of Tropical Climates on European Constitutions*, 3rd ed. New York: Evert Duyckinck, 1826.

Johnson, James. *The Oriental Voyager* (London: James Asperne 1807).

Joyce, Michael Kirwan. *An Exposure of the Haunts of Infamy and Dens of Vice in Bombay*. Bombay: Bombay Gazette Press, 1854.

Judson, A.B. "Report upon Sanitary Condition of the Waterside and Seamen." *Report of Metropolitan Board of Health of the State of New York*. New York: D. Appleton, 1869.

Kamath, M.V. *Tides of Time: History of Mumbai Port*. Mumbai: Mumbai Port Trust, 2000.

Kennedy, James. *The History of Contagious Cholera* (London: James Cochrane, 1831.

Kerr, Robert. *The Social Evil in Calcutta*, 3rd ed. Calcutta: T.S. Smith, 1886.

Kipling, Rudyard. *City of Dreadful Night*. New York: Alex Grosset, 1899.

Leach, Harry. *A Report on the Hygienic Condition of the Mercantile Marine, and on the Preventable Diseases of Merchant Seamen*. London: Arthur M. Walker, 1867.

_____. *The Ship Captain's Medical Guide*. London: Simpkin, Marshall, 1868.

Lind, James. *An Essay on the Most Effectual Means of Preserving the Health of Seamen in the Royal Navy*. London: D. Wilson, 1762.

_____. *Two Papers on Fevers and Infection*. London: D. Wilson, 1763.

Low, Charles Rathbone. *History of the Indian Navy: (1613-1863)*. London: Richard Bentley and Son, 1877.

Macmichael, William. *Is the Cholera Spasmodica of India a Contagious Disease?* London: John Murray, 1831.

Macnish, Robert. *The Anatomy of Drunkenness*, 2nd ed. Glasgow: W.R.M'Phun, 1828.

Macpherson, Hugh M. *On the Mortality of Calcutta during the Twenty Years Ending with 1860*. Calcutta: s.n., 1861.

Macpherson, John. *Cholera in its Home*. London: John Churchill and Sons, 1866.

Martin, James Ranald. *The Influence of Tropical Climate on European Constitutions*. London: John Churchill, 1861.

Massey, Montague. *Recollections of Calcutta for over Half a Century*. Calcutta: Thacker, Spinck, 1918.

Milroy, Gavin. *The Health of the Royal Navy Reconsidered*. London: Robert Hardwicke, 1862.

Mitchell, C. Dundas. *On Intemperance and European Habits in India*. Calcutta: n.p., 1845.

Moore, W.J. *Health in the Tropics, or Sanitary Art Applied to Europeans in India.* London: John Churchill, 1862.

Moseley, Benjamin. *A Treatise on Tropical Diseases*. London: T. Cadell, 1792.

Mudaliar, A. Lakshmanaswami. "A History of Medical Relief in Madras," *The Madras Tercentenary Commemoration Volume* (London: Oxford University Press, 1939), 51-60.

Murdock, John, ed., *India Year-Book for 1862.* Madras: Graves, Cookson & Co, 1863.

Palmer, Edward. *A Guide-Book to the Government Medicine Chest for Merchant Seamen*. London: H. Silverlock, 1845.

Raynal, Abbe. *A Philosophical and Political History of the Settlements and Trade of the Europeans in the East and West Indies*. Vol. 6. Edinburgh: Mundell and Son, 1804.

Sandeman, Hugh David ed. *Selections from Calcutta Gazettes*. Vol. 4. Calcutta: Office of Superintendent Government Press, 1868.

Seton-Karr, W.S. ed. *Selections from Calcutta Gazettes*. Vol. 1 Calcutta: O.T. Cutter and Military Orphan Press, 1864.

Seton-Karr, W.S. ed. *Selections from Calcutta Gazettes*. Vol. 2 Calcutta: O.T. Cutter and Military Orphan Press, 1865.

Smith, Heber. "Sailors as Propagators of Disease," *Public Health Reports and Papers 1873* (New York: Hurd and Houghton, 1875), 447-53.

Smith, Joseph. *The Claims of the British Seaman to the Protection of Parliament*. London: C.A. Bocking, 1850.

Statham, John. *Indian Recollections.* London: Samuel Bagster, 1832.

Stuart, Thomas. *Extract from a Nautical Essay on Sailors' Home, and the Crimpage System*. London: Cawthorn and Hutt, 1866.

Sykes, Laura, ed. *Calcutta through British Eyes 1690-1900*. Madras: Oxford University Press, 1992.

The Bengal Obituary; *or, a Record to Perpetuate the Memory of Departed Worth*. London and Calcutta: W. Thacker & Co, 1851.

Todd, John E. *Drunkenness a Vice, Not a Disease: A Paper*. Hartford, Conn: Case, Lockwood and Brain, 1882.

Trotter, Thomas. *A Practicable Plan for Manning the Royal Navy and Preserving Our Maritime Ascendancy without Impressment*. London: Longman, 1819.

_____. *An Essay, Medical, Philosophical, and Chemical, on Drunkenness*. Philadelphia: Anthony Finley, 1813.

_____. *Medicina Nautica: An Essay on the Diseases of Seamen III.* London: T.N. Longman and O. Rees, 1803.

Vallée, Gérard, ed. *Florence Nightingale on Health in India*. Waterloo, Ontario: Wilfrid Laurier University Press, 2006.

Walker, William. *Tom Cringle's Letters on Practical Subjects, Suggested by Experiences in Bombay*. Bombay: Education Society's Press, 1863.

Wallace, R.G. *Fifteen Years in India: Or Sketches of a Soldier's Life*. London: Longman, 1823.

Wenger, Edward Steane. *The Story of the Lall Bazar Baptist Church, Calcutta*. Calcutta: Edinburgh Press, 1908.

Wills, T. Spencer. *The Scale of Medicines with which Merchant Vessels Are to be Furnished.* London, 1851.

Printed secondary works

Ackerknecht, Erwin H. "Anticontagionism between 1821 and 1867." *International Journal of Epidemiology* 38 (2009): 7-21.

Allison, R.S. *Sea Diseases: The Story of a Great Natural Experiment in Preventive Medicine in the Royal Navy.* London: John Bale Medical Publications, 1943.

Alsop, J.D. "Warfare and the Creation of British Imperial Medicine, 1600-1800." In *British Military and Naval Medicine, 1600-1830*, edited by Geoffrey L. Hudson, 23-50. Amsterdam: Rodopi, 2007.

Ambler, Charles. "The Specter of Degeneration: Alcohol and Race in West Africa in the Early Twentieth Century." In *Global Anti-Vice Activism, 1890-1950: Fighting Drinks, Drugs, and 'Immorality'*, edited by Jessica Pliley, Robert Kramm and Harald Fischer-Tiné, 103-23. Cambridge: Cambridge University Press, 2016.

Anderson, Benedict. *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. London: Verso, 1983.

Anderson, Warwick. *Colonial Pathologies: American Tropical Medicine, Race, and Hygiene in the Philippines*. Durham, NC: Duke University Press, 2006.

_____. “Disease, Race, and Empire.” *Bulletin of the History of Medicine* 70, no. 1 (1996): 62-67.

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

_____. *The Tropics and the Traveling Gaze: India, Landscape, and Science, 1800-1856*. Seattle and London: University of Washington Press, 2015.

_____. *Toxic Histories: Poison and Pollution in Modern India*. Cambridge: Cambridge University Press, 2016.

_____ ed. *Warm Climates and Western Medicine: The Emergence of Tropical Medicine, 1500-1900.* Amsterdam and Atlanta, GA: Rodopi, 1996.

_____. “European Orphans and Vagrants in India in the Nineteenth Century.” *The Journal of Imperial and Commonwealth History* 7, no. 2 (1979): 104-27.

_____. “White Colonization and Labour in Nineteenth-Century India.” *The Journal of Imperial and Commonwealth History* 11, no. 2 (1983): 133-58.

_____. “Cholera and Colonialism in British India.” *Past & Present* 113 (1986): 118-51.

_____. “Touching the Body: Perspectives on the Indian Plague, 1896-1900.” In *Subaltern Studies V: Writings on South Asian History and Society*, edited by Ranajit Guha, 55-90. Delhi: Oxford University Press, 1987.

_____. “The Indian Ocean as a Disease Zone, 1500-1950.” *South Asia: Journal of South Asian Studies* 14, no. 2 (1991): 1-21.

_____. “India's Place in the Tropical World, 1770-1930.” *The Journal of Imperial and Commonwealth History* 26, no. 1 (1998): 1-21.

Bailkin. Jordanna. “The Boot and the Spleen: When Was Murder Possible in British India?” *Comparative Studies in Society and History* 48, no. 2 (2006): 462-93.

Balachandran, Gopalan. *Globalizing Labour? Indian Seafarers and World Shipping, c. 1879-1945*. New Delhi: Oxford University Press, 2012.

_____. "Circulation through Seafaring: Indian Seamen, 1890-1945." In *Society and Circulation: Mobile People and Itinerant Cultures in South Asia, 1750-1950*, edited by Claude Markovits, Jacques Pouchepadass, and Sanjay Subrahmanyam, 89-130. Ranikhet: Permanent Black, 2003.

Baldwin, Peter. *Contagion and the State in Europe, 1830-1930*. New York: Cambridge University Press, 1999.

Ballantyne, Tony, and Antoinette Burton, *Empires and the Reach of the Global 1870-1945*. Cambridge, MA: Harvard University Press, 2014.

_____ eds. *Bodies in Contact: Rethinking Colonial Encounters in World History*. Durham, NC: Duke University Press, 2005.

Banerjee, Sumanta. "City of Dreadful Night': Crime and Punishment in Colonial Calcutta." *Economic and Political Weekly* 38, no. 21 (2003): 2045-55.

Baron, Jeremy Hugh. "Sailors' Scurvy before and after James Lind – A Reassessment." *Nutrition Review* 67, no. 6 (2009): 315-32.

Basu, Ranu. "Colonial Municipal Policy and Indian Response: Municipal Government, and Police in Calcutta 1850-1872." *Bengal Past and Present* 190 (1981): 1-47.

Bauman, Zygmunt. "Dream of Purity." *Theoria: A Journal of Social and Political Theory* 86 (1995): 49-60.

Bayly, C.A., Sven Beckert, Matthew Connelly, Isabel Hofmeyr, Wendy Kozol, and Patricia Seed. "AHR Conversation: On Transnational History." *American Historical Review* 111, no. 5 (2006): 1440-64.

Bear, Laura Gbah. “Miscegenations of Modernity: Constructing European Respectability and Race in the Indian Railway Colony, 1857-1931.” *Women's History Review* 3, no. 4 (1994): 531-548.

Beaven, Brad. *Leisure, Citizenship and Working-Class Men in Britain, 1850-1945*. Manchester: Manchester University Press, 2005.

_____. “The Resilience of Sailortown Culture in English Naval Ports, c. 1820-1900.” *Urban History* 43, no. 1 (2015): 72-95.

_____, and Mathias Seiter. “Regulating Sin in the City: The Moral Geographies of Naval Port Towns in Britain and Germany, c. 1860-1914.” *Britain and the World* 13, no. 1 (2020): 27-46.

Beckingham, David. *The Licensed City: Regulating Drink in Liverpool, 1830-1920*. Liverpool: Liverpool University Press, 2017.

Benjamin, Walter. *One-Way Street and Other Writings*. Translated by Edmund Jephcott and Kingsley Shorter. London: New Left Books, 1978.

Bewell, Alan. *Romanticism and Colonial Disease*. Baltimore and London: The Johns Hopkins University Press, 1999.

Bhattacharya, Nandini. “The Logic of Location: Malaria Research in Colonial India, Darjeeling and Duars, 1900-30.” In *Medical History* 55, no. 2 (2011): 183-202.

Blake, Richard. *Evangelicals in the Royal Navy 1775-1815: Blue Lights & Psalm-Singer*. Woodbridge: Boydell Press, 2008.

_____. *Religion in the British Navy, 1815-1879: Piety and Professionalism*. Woodbridge: Boydell Press, 2014.

Blanco, Richard L. “Henry Marshall (1775-1851) and the Health of the British Army.” *Medical History* 14, no. 3 (1970): 260-76.

Bose, Aniruddha. *Class Conflict and Modernization in India: The Raj and the Calcutta Waterfront (1860-1910)*. London and New York: Routledge, 2018.

Brockliss, Laurence, John Cardwell and Michael Moss. *Nelson's Surgeon: William Beatty, Naval Medicine, and the Battle of Trafalgar*. Oxford: Oxford University Press, 2005.

Broeze, Frank. "Underdevelopment and Dependency: Maritime India during the Raj." *Modern Asian Studies* 18, no. 3 (1984): 429-57.

Broich, John. "Engineering the Empire: British Water Supply Systems and Colonial Societies, 1850-1900." *Journal of British Studies* 46, no. 2 (2007): 346-65.

Brown, Kevin. *Poxed and Scurvied: The Story of Sickness and Health at Sea*. Barnsley: Seaforth Publishing, 2011.

Bruijn, Iris. *Ship's Surgeons of the Dutch East India Company: Commerce and the Progress of Medicine in the Eighteenth Century*. Leiden: Leiden University Press, 2009.

Burton, Valerie. "The Myth of Bachelor Jack: Masculinity, Patriarchy and Seafaring Labour." In *Jack Tar in History: Essays in the History of Maritime Life and Labour*, eds. Colin Howell and Richard Twomey, 179-98. Fredericton, NB: Acadiensis Press, 1991.

_____. "Boundaries and Identities in the Nineteenth-Century English Port: Sailortown Narratives and Urban Space." In *Identities in Space: Contested Terrains in the Western City since 1850*, edited by Simon Gunn and Robert J. Morris, 137-51. Aldershot: Ashgate, 2001.

Bynum, William. *Science and the Practice of Medicine in the Nineteenth Century*. Cambridge: Cambridge University Press, 1994.

_____. "Chronic Alcoholism in the First Half of the 19th Century." *Bulletin of the History of Medicine* 42, no. 2 (1968): 160-85.

Caputo, Sara. "Alien Seamen in the British Navy, British Law, and the British State, c. 1793-c.1815." *The Historical Journal* 62, no. 3 (2019): 685-707.

Carpenter, Kenneth J. ed. *The History of Scurvy and Vitamin C*. Cambridge: Cambridge University Press, 1986.

Carter, Tim. *Merchant Seamen's Health, 1860-1960: Medicine, Technology, Shipowners and the State in Britain*. Woodbridge: Boydell Press, 2014.

Catanach, Ian J. "Plague and the Tensions of Empire: India, 1896-1918." In *Imperial Medicine and Indigenous Societies*, edited by David Arnold, 149-71. Manchester: Manchester University Press, 1988.

Chakrabarti, Pratik. *Bacteriology in British India: Laboratory Medicine and the Tropics* Rochester: Rochester University Press, 2012.

_____. *Medicine and Empire: 1600-1960*. Basingstoke: Palgrave Macmillan, 2014.

_____. "Purifying the River: Pollution and Purity of Water in Colonial Calcutta." *Studies in History* 31, no. 2 (2015): 178-205.

Chappell, David A. *Double Ghosts: Oceanic Voyagers on Euroamerican Ships*. New York: Routledge, 1997.

Charters, Erica. *Disease, War, and the Imperial State: The Welfare of the British Armed Forces During the Seven Years' War*. Chicago: University of Chicago Press, 2014.

Chattopadhyay, Swati. *Representing Calcutta: Modernity, Nationalism, and the Colonial Uncanny.* London and New York: Routledge, 2006.

Churchill, David. *Crime Control and Everyday Life in the Victorian City: The Police and the Public*. Oxford: Oxford University Press, 2018.

Clavin, Patricia. "Defining Transnationalism." *Contemporary European History* 4, no. 4 (2005): 421-39.

Cleall, Esme. *Missionary Discourses of Difference: Negotiating Otherness in the British Empire, 1840-1900*. Basingstoke: Palgrave Macmillan, 2012.

Clemis, David. “Medical Expertise and the Understandings of Intoxication in Britain, 1660 to 1830.” In *Intoxication and Society: Problematic Pleasures of Drugs and Alcohol*, edited by Jonathan Herring, Ciaran Regan, Darin Weinberg, and Phil Withington, 33-51. Basingstoke: Palgrave Macmillan, 2013.

Cobley, Alan. “Black West Indian Seamen in the British Merchant Marine in the Mid nineteenth Century.” *History Workshop Journal* 58, no. 1 (2004): 259-74.

Conley, Mary A. *From Jack Tar to Union Jack: Representing Naval Manhood in the British Empire, 1870-1918*. Manchester: Manchester University Press, 2009.

Cook, Gordon C. *Disease in the Merchant Navy: A History of the Seamen's Hospital Society*. London: CRC Press, 2007.

_____. “Scurvy in the British Mercantile Marine in the 19th century, and the Contribution of the Seamen’s Hospital Society.” *Postgraduate Medical Journal* 80 (2004): 224-29.

Cooter, Roger. *Surgery and Society in Peace and War: Orthopaedics and the Organisation of Modern Medicine, 1880-1948*. Basingstoke: Macmillan, 1993.

_____, Mark Harrison, and Steve Sturdy eds., *Medicine and Modern Warfare*. Amsterdam: Rodopi, 1999.

Costello, Ray. *Black Salt: Seafarers of African Descent on British Ships*. Liverpool: Liverpool University Press, 2014.

Crimmin, P.K. “British Naval Health, 1700-1800: Improvement over Time?” In *British Military and Naval Medicine, 1600-1830*, edited by Geoffrey L. Hudson, 183-200. Amsterdam and New York: Rodopi, 2007.

Crosby, Alfred W. *The Columbian Exchange: The Biological Consequences of 1492.* Westport: Greenwood, 1972.

Curtin, Philip D. *The Image of Africa: British Ideas and Action, 1780-1850*. Vol. 1. Madison, WI: University of Wisconsin Press, 1964.

Datta, Partho. *Planning the City: Urbanization and Reform in Calcutta, c. 1800-c. 1940.* New Delhi: Tulika Books, 2012.

De, Sarmistha. *Marginal Europeans in Colonial India, 1860-1920*. Kolkata: Thema, 2008.

Dixon, Conrad. "Lascars: The Forgotten Seamen." In *Working Men Who Got Wet*, edited by Rosemary Ommer and Gerald Panting, 265-77. St. John's: Maritime History Group, Memorial University of Newfoundland, 1980.

_____. "The Rise and Fall of the Crimp, 1840-1914." In *British Shipping and Seamen, 1630-1960: Some Studies*, edited by Stephen Fisher, 49-67. Exeter: University of Exeter Press, 1984.

Dossal Panjwani, Marriam. "Godis, Tolis and Mathadis: Dock Workers of Bombay." In *Dock Workers: International Explorations in Comparative Labour History, 1790-1970*, Vol. 1, edited by Sam Davies et al., 425-42. Aldershot: Ashgate, 2000.

Drayton, Richard. *Nature's Government: Science, Imperial Britain, and the "Improvement of the World*. New Haven: Yale University Press, 2000.

Druett, Joan. *Rough Medicine: Surgeons at Sea in the Age of Sail*. New York: Routledge, 2001.

Dutt, Bishnupriya, and Urmimala Sarkar Munsi *Engendering Performance: Indian Women Performers in Search of an Identity*. New Delhi: Sage, 2010.

Dutta, Sanchari. "Plague, Quarantine and Empire: British-Indian Sanitary Strategies in Central Asia, 1897-1907." In *The Social History of Health and Medicine in Colonial India*, edited by Biswamoy Pati and Mark Harrison, 74-92. London and New York: Routledge, 2009.

Earle, Peter. *Sailors: English Merchant Seamen 1650-1775*. London: Methuen, 1998.

Echenberg, Myron. *Africa in the Time of Cholera: A History of Pandemics from 1817 to the Present*. Cambridge: Cambridge University Press, 2011.

Ellis, F.P. "The Health of the Navy: The Changing Pattern." *British Journal of Industrial Medicine* 26, no. 3 (1969): 190-201.

Ernst, Waltraud. *Mad Tales from the Raj: The European Insane in British India, 1800-1858* (London and New York: Routledge, 1991).

Fingard, Judith. "Masters and Friends, Crimps and Abstainers: Agents of Control in 19th Century Sailortown." *Acadiensis* 8, no. 1 (1978): 22-46.

Fink, Leon. *Sweatshops at Sea: Merchant Seamen in the World's First Globalized Industry, from 1812 to the Present*. Durham, NC: University of North Carolina Press, 2011.

Fischer-Tiné, Harald. *Low and Licentious Europeans: Race, Class, and 'White Subalternity' in Colonial India* (New Delhi: Orient BlackSwan, 2009).

_____. "Britain's Other Civilising Mission: Class Prejudice, European 'Loaferism' and the Workhouse-system in Colonial India." *The Indian Economic & Social History Review* 42, no. 3 (2005): 295-338.

_____. "Flotsam and Jetsam of the Empire?: European Seamen and Spaces of Disease and Disorder in Mid-nineteenth Century Calcutta." In *The Limits of British Colonial Control in South Asia: Spaces of Disorder in the Indian Ocean Region*, edited by Ashwini Tambe and Harald Fisher-Tiné, 121-54. London and New York: Routledge, 2009).

_____. "The Drinking Habits of Our Countrymen: European Alcohol Consumption and Colonial Power in British India." *The Journal of Imperial and Commonwealth History* 40, no. 3 (2012): 383-408.

Fisher, Michael H. "Working across the Seas: Indian Maritime Labourers in India, Britain, and in Between, 1600-1857." *International Review of Social History* 51, no. S14 (2006): 21-45.

_____. "Making London's 'Oriental Quarter'." In *Subalternity and Difference: Investigations from the North and the South*, edited by Gyanendra Pandey, 79-96. London and New York: Routledge, 2011.

Fisher, Stephen, ed. *Studies in British Privateering, Trading Enterprise and Seamen's Welfare, 1775-1900*. Exeter: University of Exeter Press, 1987.

Foucault, Michel. *The History of Sexuality. Vol. 1 An Introduction*. Translated by Robert Hurley (New York: Pantheon Books, 1978).

_____. "The Birth of Social Medicine." In *Power*, edited by James D. Faubion, 134-56. Translated by Robert Hurley (New York: New Press, 2000).

_____. *"Society Must be Defended": Lectures at the Collège de France, 1975-76*, edited by Mauro Bertani and Alessandro Fontana. Translated by David Macey (New York: Picador, 2003).

Foxhall, Katherine. *Health, Medicine and the Sea: Australian Voyages c. 1815-1860*. Manchester: Manchester University Press, 2012.

Friedenberg, Zachary B. *Medicine under Sail*. Annapolis, MA: Naval Institute Press, 2002.

Friend, Stephen. *Fishing for Souls: The Development and Impact of British Fishermen's Missions*. Cambridge: Lutterworth Press, 2018.

Frost, Diane. "Racism, Work and Unemployment: West African Seamen in Liverpool 1880s-1960s." *Immigrants & Minorities* 13, nos. 2-3 (1994): 22-33.

Fury, Chery A. *Tides in the Affairs of Men: The Social History of Elizabethan Seamen, 1580-1603*. Westport, CT: Greenwood Press, 2002.

Ganachari, Aravind. '"White Man's Embarrassment' – European Vagrancy in Nineteenth-Century Bombay," *Economic and Political Weekly* 37, no. 2 (2002): 2477-85.

Ghosh, Durba. *Sex and Family in Colonial India: The Making of Empire* (New Delhi: Cambridge University Press, 2006).

Ghosh, Nabaparna. *A Hygienic City-Nation: Space, Community, and Everyday Life in Colonial Calcutta*. Cambridge: Cambridge University Press, 2020.

Gilbert, Pamela K. *Cholera and Nation: Doctoring the Social Body in Victorian England*. Albany: State University of New York Press, 2008.

Gough, Barry. "Profit and Power: Informal Empire, the Navy and Latin America." In *Gentlemanly Capitalism and British Imperialism: The New Debate on Empire*, edited by Raymond E. Dumett, 68-81. London and New York: Longman, 1999.

Gray, Stephen. *Steam Power and Sea Power: Coal, the Royal Navy, and the British Empire, c. 1870-1914*. Basingstoke: Palgrave Macmillan, 2018.

Gray, Taylor. "Whispers in a Bottle: The Language of Liquor and the Politics of Prohibition in Nineteenth-century New Zealand." *Law and Humanities* 10, no. 1 (2016): 90-114.

Greenaway, John. *Drink and British Politics since 1830: A Study in Policy-Making* Basingstoke: Palgrave Macmillan, 2003.

Greenhill, Basil and Denis Stonham, *Seafaring under Sail: The Life of the Merchant Seaman*. Cambridge: Stephens, 1981.

Grove, Eric J. *The Royal Navy since 1815: A New Short History*. Basingstoke: Palgrave Macmillan, 2005.

Guha, Ranajit. "Not at Home in Empire," *Critical Inquiry* 23, no. 3 (1997): 482-493.

Haines, Robin. *Doctors at Sea: Emigrant Voyages to Colonial Australia*. Basingstoke: Palgrave Macmillan, 2005.

Hamlin, Christopher. *Cholera: The Biography*. Oxford: Oxford University Press, 2009.

_____. *More than Hot: A Short History of Fever*. Baltimore: Johns Hopkins University Press, 2014.

_____. "The Cholera Stigma and the Challenge of Interdisciplinary Epistemology: From Bengal to Haiti." *Science as Culture* 21, no. 4 (2012): 445-74.

Hands, Thora. *Drinking in Victorian and Edwardian Britain: Beyond the Spectre of the Drunkard*. Basingstoke: Palgrave Macmillan, 2018.

Harcourt, Freda. *Flagships of Imperialism: The P & O Company and the Politics of Empire from its Origins to 1867*. Manchester: Manchester University Press, 2006.

Hardiman, David, and Projit Bihari Mukharji, eds. *Medical Marginality in South Asia: Situating Subaltern Therapeutics*. London and New York: Routledge, 2013.

Harrison, Brian. *Drink and the Victorians: The Temperance Question in England. 1815-1872.* London: Faber and Faber, 1971.

Harrison, Mark. *Public Health in British India: Anglo-Indian Preventive Medicine 1859-1914*. Cambridge: Cambridge University Press, 1994.

_____. *Climates and Constitutions: Health, Race, Environment and British Imperialism in India, 1600-1850*. New Delhi: Oxford University Press, 1999.

_____. *Medicine and Victory: British Military Medicine in the Second World War*. Oxford: Oxford University Press, 2004.

_____. *Contagion: How Commerce Has Spread Disease*. New Haven: Yale University Press, 2009.

_____. *Medicine in an Age of Commerce and Empire: Britain and its Tropical Colonies 1660-1830*. Oxford: Oxford University Press, 2010.

_____. *The Medical War: British Military Medicine in the First World War*. Oxford: Oxford University Press, 2010.

_____. "Quarantine, Pilgrimage, and Colonial Trade: India 1866-1900." *The Indian Economic & Social History Review* 29, no. 2 (1992): 117-44.

_____. "Tropical Medicine in Nineteenth-century India." *The British Journal for the History of Science* 25, no. 3 (1992): 299-318.

_____. "The Tender Frame of Man: Disease, Climate, and Racial Difference in India and the West Indies, 1760-1860." *Bulletin of the History of Medicine* 70, no. 1 (1996): 68-93.

_____. “Difference of Degree: Representations of India in British Medical Topography, 1820-c.1870,” in *Medical Geography in Historical Perspective*, edited by Nicolaas A. Rupke, 51-69. London: Wellcome Trust Centre for the History of Medicine, 2000.

_____. “An ‘Important and Truly National Subject’: The West Africa Service and the Health of the Royal Navy in the Mid Nineteenth Century.” In *Health and Medicine at Sea, 1700-1900*, edited by David Boyd Haycock and Sally Archer, 108-27. Woodbridge: Boydell & Brewer, 2009.

_____. “Medical Experimentation in British India: The Case of Dr Helenus Scott.” In *The Development of Modern Medicine in Non-Western Countries: Historical Perspectives*, edited by Hormoz Ebrahimnejad, 24-40. London and New York, Routledge, 2009.

_____. “Scurvy on Sea and Land: Political Economy and Natural History, c. 1780-c. 1850.” *Journal for Maritime Research* 15, no. 1 (2013): 7-25.

_____. “A Global Perspective: Reframing the History of Health, Medicine, and Disease.” *Bulletin of the History of Medicine* 89, no. 4 (2015): 639-89.

_____. “Health, Sovereignty and Imperialism: The Royal Navy and Infectious Disease in Japan’s Treaty Ports.” *Social Science Dilman* 14, no. 2 (2018): 49-75.

Hardy, Anne. “Cholera, Quarantine and the English Preventive System, 1850-1895.” *Medical History* 37 (1993): 250-69.

Hasan, Farhat. “Indigenous Cooperation and the Birth of a Colonial City: Calcutta, c. 1698-1750.” *Modern Asian Studies* 26, no. 1 (1992): 65-82.

Hastings, D.J. *The Royal Indian Navy, 1612-1950*. Jefferson, NC: McFarland, 1988.

Hendriksen, Marieke M.A. “Consumer Culture, Self-Prescription, and Status: Nineteenth-Century Medicine Chests in the Royal Navy.” *Journal of Victorian Culture* 20, no. 2 (2015): 147-67.

Home, Robert. *Of Planting and Planning: The Making of British Colonial Cities*. London: E & FN Spon, 1997.

Hope, Ronald. *Poor Jack: The Perilous History of the Merchant Seaman*. London: Chatham Publishing, 2001.

Howard-Jones, Norman. "Cholera Therapy in the Nineteenth Century." *Journal of the History of Medicine and Allied Sciences* 27, no. 4 (1972): 373-95.

Howard-Jones, Norman. *The Scientific Background of the International Sanitary Conferences, 1851-1938*. Geneva: World Health Organization, 1975.

Hugill, Stan. *Sailortown*. London: Routledge and Kegan Paul, 1967.

Ichikawa, Chieko. "Writing as Female National and Imperial Responsibility: Florence Nightingale's Scheme for Social and Cultural Reforms in England and India." *Victorian Literature and Culture* 39 (2011): 87-105.

Ingram, Darcy. "Saving the Union's Jack: The Montreal Sailors' Institute and the Homeless Sailor, 1862-98." In *Negotiating Identities in 19th- and 20th-Century Montreal,* edited by Bettina Bradbury and Tamara Myers, 49-76. Vancouver and Toronto: UBC Press, 2005.

Isbell, Mary. "When Ditchers and Jack Tars Collide: Benefit Theatricals at the Calcutta Lyric Theatre in the Wake of the Indian Mutiny." *Victorian Literature and Culture* 42 (2014): 407-23.

Jackson, Lee. *Dirty Old London: The Victorian Fight against Filth*. New Haven: Yale University Press, 2015.

Jaffer, Aaron. *Lascars and Indian Ocean Seafaring, 1700-1860: Shipboard Life, Unrest and Mutiny*. Rochester: Boydell Press, 2015.

Janković, Vladimir. *Confronting the Climate: British Airs and the Making of Environmental Medicine*. New York: Palgrave Macmillan, 2010.

Jepson, Wendy. “Of Soil, Situation and Salubrity: Medical Topography and Medical Officers in Nineteenth Century British India.” *Historical Geography* 32 (2004): 137-55.

Jones, David. *Crime, Protest, Community, and Police in Nineteenth-Century Britain* (London: Routledge & Kegan Paul, 1982.

Keevil, J.J., Christopher Lloyd, and J.L.S. Coulter, eds., *Medicine and the Navy 1200-1900* Vol. 4. Edinburgh: E & S Livingstone, 1963.

Keevil, John, Christopher Lloyd, Jack Leonard, Sagar Coulter, eds. *Medicine and the Navy 1200-1900: Vol. 3 – 1714-1815*. London: E & S Livingstone, 1961.

Kelly, Catherine. *War and the Militarization of British Army Medicine, 1793-1830*. London: Pickering & Chatto, 2011.

Kennedy, Dane. “The Perils of the Midday Sun: Climatic Anxieties in the Colonial Tropics.” In *Imperialism and the Natural World*, edited by John M. MacKenzie, 118-40. Manchester: Manchester University Press, 1990.

Kennedy, Paul. *The Rise and Fall of British Naval Mastery*. New York: Charles Scribner’s Sons, 1976.

Kennerley, Alston. “British Seamen’s Missions in the Nineteenth Century.” In *The North Sea: Twelve Essays on Social History of Maritime Labour*, edited by Lewis R. Fischer et.al. 79-98. Stavanger: Stavanger Maritime Museum, 1992.

Kennerley, Alston. “Seafaring Missionary Societies and Maritime Education and Training, 1815-1914.” *Paedagogica Historica* 35, sup 1 (2015): 241-57.

Kidambi, Prashant. “’An Infection of Locality’: Plague, Pythogenesis and the Poor in Bombay, c. 1896-1905.” *Urban History* 31, no. 2 (2004): 249-67.

King, Anthony D. *Colonial Urban Development: Culture, Social Power and Environment*. London: Routledge and Kegan Paul, 1976.

Klein, Ira. “Imperialism, Ecology and Disease: Cholera in India, 1850-1950.” *Indian Economic & Social History Review* 31, no. 4 (1994): 491-518.

Knight, Roger, and Martin Wilcox. *Sustaining the Fleet, 1783-1815: War, the British Navy and the Contractor State*. Woodbridge: Boydell, 2010.

Koch, Tom. “1831: The Map That Launched the Idea of Global Health.” *International Journal of Epidemiology* 43, no. 4 (August 2014): 1014-20.

Koren, Elisabeth Solvang. “In a Peculiar Position: Merchant Seamen in Norwegian Health Policy, 1890-1940.” In *New Directions in Norwegian Maritime History*, edited by Lewis R. Fischer and Even Lange, 83-100. Liverpool: Liverpool University Press, 2011.

Kuhnke, LaVerne. *Lives at Risk: Public Health in Nineteenth-Century Egypt*. Berkeley: University of California Press, 1990.

Kumar, Anil. *Medicine and the Raj: British Medical Policy 1835-1911*. New Delhi: Sage, 1998.

Kupperman, Karen ordahl. “Fear of Hot Climates in the Anglo-American Colonial Experience.” *The William and Mary Quarterly* 41, no. 2 (1984): 213-40.

Kverndal, Roald. *Seamen’s Missions: Their Origin and Early Growth*. Pasadena, CA: William Carey Library, 1986.

_____. *George Charles Smith of Penzance: From Nelson Sailor to Mission Pioneer*. Pasadena, CA: William Carey Library, 2012.

_____. *The Way of the Sea: The Changing Shape of Mission in the Seafaring World*. Pasadena, CA: William Carey Library, 2008.

Ladurie, Emmanuel Le Roy. “A Concept: The Unification of the Globe by Disease (Fourteen to Seventeenth Centuries).” In *The Mind and Method of the Historian*, 28-83. Translated by Sián Reynolds and Ben Reynolds. Chicago: University of Chicago Press, 1981.

Lambert, Andrew. "The Shield of Empire 1815-1895." In *The Oxford Illustrated History of the Royal Navy*, edited by J.R. Hill, 161-99. Oxford: Oxford University Press, 1995.

Lampe, Evan. "The Problem of the Sailors: Power, Law and the Formation of the Merchant Community in Treaty Port China, 1842-60." In *Merchant Communities in Asia, 1600-1980*, eds. Lin Yu-Ju and Madeleine Zelin, 177-94. London: Pickering & Chatto, 2015.

Land, Isaac. *War, Nationalism, and the British Sailor, 1750-1850*. New York: Palgrave Macmillan, 2009.

Lavery, Brian. *Able Seamen: The Lower Deck of the Royal Navy, 1850 to 1939*. London: Conway, 2011.

Lee, Robert. "The Seafarers' Urban World: A Critical Review." *International Journal of Maritime History* 25, no. 1 (2013): 23-64.

Levine, Philippa, *Prostitution, Race, and Politics: Policing Venereal Disease in the British Empire* (New York and London: Routledge, 2003).

Lewis, Michael. *British Ships and British Seamen.* London: Longman, 1940.

_____. *A Social History of the Navy 1793-1815.* London: George Allen & Unwin, 1960.

Leyland, John. *The Royal Navy: Its Influence in English History and in the Growth of Empire*. Cambridge: Cambridge University Press, 1914.

Lincoln, Margarette. *Representing the Royal Navy: British Sea Power, 1750-1815*. Aldershot: Ashgate, 2002.

_____. "The Medical Profession and Representations of the Navy, 1750-1815." In *British Military and Naval Medicine, 1600-1830*, edited by Geoffrey L. Hudson, 201-26. Amsterdam and New York: Rodopi, 2007.

Lloyd, Christopher. *The British Seaman 1200-1860: A Social Survey*. London: Collins, 1968.

_____ and John Coulter, *Medicine in the Navy.* Vol. 3. London: E & S Livingstone, 1961.

Macilwee, Michael. *The Liverpool Underworld: Crime in the City, 1750-1900*. Liverpool: Liverpool University Press, 2011.

Mackay, David. *In the Wake of Cook: Exploration, Science & Empire, 1780-1801*. Wellington: Victoria University Press, 1985.

Maglen, Krista. "'The First Line of Defence': British Quarantine and the Port Sanitary Authorities in the Nineteenth Century." *Social History of Medicine* 15, no. 3 (2002): 413-28.

Manning, Patrick. "Global History and Maritime History." *International Journal of Maritime History* 25, no. 1 (2013): 1-22.

Marks, Shula. "What Is Colonial about Colonial Medicine? And What Has Happened to Imperialism and Health?" *Social History of Medicine* 10, no. 2 (1997): 205-19.

Marshall, P.J. *Bengal: The British Bridgehead*. Cambridge: Cambridge University Press, 1988.

Mathias, Peter. "Swords and Ploughshares: the Armed Forces, Medicine and Public Health in the Late Eighteenth Century." In *War and Economic Development: Essays in Memory of Joslin David*, edited by J.M. Winter, 91-102. Cambridge: Cambridge University Press, 1975.

McLean, David. *Surgeons of the Fleet: The Royal Navy and its Medics from Trafalgar to Jutland*. London and New York: I.B. Tauris, 2010.

Miller, Robert. *One Firm Anchor: The Church and the Merchant Seafarer*. Cambridge: Lutterworth Press, 2012.

Milne, Graeme J. *People, Place and Power on the Nineteenth-Century Waterfront: Sailortown*. Basingstoke: Palgrave Macmillan, 2016.

Milne, Iain. "Who Was James Lind, and What Exactly Did He Achieve." *Journal of the Royal Society of Medicine* 105, no. 12 (2012): 503-8.

Mishra, Saurabh. *Pilgrimage, Politics, and Pestilence: The Haj from the Indian Subcontinent, 1860-1920*. New Delhi: Oxford University Press, 2011.

_____. “Beyond the Bounds of Time? The Haj Pilgrimage from the Indian Subcontinent, 1865-1920.” In *The Social History of Health and Medicine in Colonial India*, edited by Biswamoy Pati and Mark Harrison, 31-44. London and New York: Routledge, 2009.

Mizutani, Satoshi. *The Meaning of White: Race, Class, and the ‘Domiciled Community’ in British India, 1858-1930*. New York: Oxford University Press, 2012.

_____. “‘Degenerate Whites’ and their Spaces of Disorder: Disciplining Racial and Class Ambiguities in Colonial Calcutta (c. 1880-1930).” In *The Limits of British Colonial Control in South Asia: Spaces of Disorder in the Indian Ocean Region*, edited by Ashwini Tambe and Harald Fisher-Tiné, 155-91. London and New York: Routledge, 2009.

Morton, Sandra. “A Little of What You Fancy Does You… Harm!! (with Apologies to Marie Lloyd).” In *Criminal Conversations: Victorian Crimes, Social Panic, and Moral Outrage*, edited by Judith Rowbotham and Kim Stevenson, 157-80. Ohio: The Ohio State University Press, 2005.

Mukharji, Projit Bihari. *Nationalizing the Body: The Medical Market, Print and Daktari Medicine* (New York and London: Anthem Press, 2009).

Mukherjee, Nilmani. *The Port of Calcutta: A Short History*. Calcutta: Commissioners for the Port of Calcutta, 1968.

_____. “Port Labour in Calcutta, 1870-1953: Some Trends of Change.” *Transactions of the India Institute of Advanced Study* 7 (1969): 464-73.

Munn, Christopher. *Anglo-China: Chinese People and British Rule in Hong Kong, 1841-1880*. Hong Kong: Hong Kong University Press, 2009.

Myers, Norma. “The Black Poor of London: Initiatives of Eastern Seamen in the Eighteenth and Nineteenth Centuries.” In *Ethnic Labour and British Imperial Trade: A History of Ethnic Seafarers in the UK*, edited by Diane Frost, 7-21. London: Franck Cass, 1995.

Nair, P. Thankappan. *British Social Life in Ancient Calcutta*. Calcutta: Sanskrit Pustak Bhandar, 1983.

Nicholls, James. *The Politics of Alcohol: A History of the Drink Question in England*. Manchester: Manchester University Press, 2009.

Nilson, Tomas. "Hey Sailor, Looking for Trouble? Violence, Drunkenness and Disorder in a Swedish Port Town: Gothenburg 1920." In *Port Towns and Urban Cultures: International Histories of the Waterfront, c. 1700-2000*, edited by Brad Beaven, Karl Bell, and Robert James, 69-90. London: Palgrave Macmillan, 2016.

Osborne, Michael A. *The Emergence of Tropical Medicine in France*. Chicago and London: University of Chicago Press, 2014.

Osborne, Thomas. "Security and Vitality: Drains, Liberalism and Power in the Nineteenth Century." In *Foucault and Political Reason: Liberalism, Neo-Liberalism and Rationalities of Government*, edited by Andrew Barry, Thomas Osborne, and Nikolas Rose, 99-122. Chicago: University of Chicago Press, 1996.

Otter, Chris. "The Vital City: Public Analysis, Dairies and Slaughterhouses in Nineteenth-century Britain." *Cultural Geographies* 13, no. 4 (2006): 517-37.

Palmer, Sarah. "Seamen Ashore in Late Nineteenth Century London: Protection from the Crimps." In *Seamen in Society*, edited by Paul Adam, 55-67. Bucharest: International Commission on Maritime History, 1980.

_____ and David R. Williams, "British Sailors, 1775-1870." In *"Those Emblems of Hell"? European Sailors and the Maritime Labour Market, 1570-1870*, edited by Paul C. van Royen, Jaap R. Bruijn and Jan Lucassen, 93-118. Liverpool: Liverpool University Press, 1997.

Pande, Ishita. *Medicine, Race and Liberalism in British Bengal: Symptoms of Empire*. London and New York: Routledge, 2010.

Peck, John. *Maritime Fiction: Sailors and the Sea in British and American Novels, 1719-1917.* Basingstoke: Palgrave Macmillan, 2001.

Peers, Douglas M. "Soldiers, Surgeons and the Campaigns to Combat Sexually Transmitted Diseases in Colonial India, 1805-1860." *Medical History* 42, no. 2 (1998): 137-60.

_____. "Imperial Vice: Sex, Drink and the Health of British Troops in North Indian Cantonments, 1800-1858." In *Guardians of Empire: The Armed Forces of the Colonial Powers c.1700-1964*, edited by David Killingray and David Omissi, 25-52. Manchester and New York: Manchester University Press, 1999.

Pelling, Margaret. *Cholera, Fever and English Medicine, 1825-1865*. Oxford: Oxford University Press, 1978.

Perry, Adele. *On the Edge of Empire: Gender, Race, and the Making of British Columbia, 1849-1871*. Toronto: University of Toronto Press, 2001.

Polónia, Amélia. "Maritime History: A Gateway to Global History?" in *Maritime History as Global History*, edited by Maria Fusaro and Amélia Polónia, 1-20. Newfoundland: St. John's, 2010.

Polu, Sandhya L. *Infectious Disease in India, 1892-1940: Policy-Making and the Perception of Risk*. Basingstoke: Palgrave Macmillan, 2012.

Porter, Roy. *Disease, Medicine and Society in England, 1550-1860* 2nd ed. Basingstoke: Macmillan, 1993.

_____. *Blood and Guts: A Short History of Medicine*. London: Penguin, 2002.

Potter, Simon J., and Jonathan Saha. "Global History, Imperial History and Connected Histories of Empire." *Journal of Colonialism and Colonial History* 16 (2015), http://muse.jhu.edu/journals/journal_of_colonialism_and_colonial_history/vo16/16.1.potter.html.

Press, Jonathan. *The Merchant Seamen of Bristol, 1747-1789*. Bristol: Bristol Branch of the Historical Association, 1976.

Quinlan, Michael. "Precarious and Hazardous Work: The Health and Safety of Merchant Seamen 1815-1935." *Social History* 38, no. 3 (2013): 281-307.

Rabin, Dana. "Drunkenness and Responsibility for Crime in the Eighteenth Century." *Journal of British Studies* 44 (2005): 457-77.

Raj, Kapil. *Relocating Modern Science: Circulation and the Construction of Knowledge in South Asia and Europe, 1650-1900*. Basingstoke: Palgrave Macmillan, 2007.

Ramanna, Mridula. *Western Medicine and Public Health in Colonial Bombay, 1845-1895*. New Delhi: Orient Longman, 2002.

Ramasubban, Radhika. "Imperial Health in British India, 1857-1900." In *Disease, Medicine, and Empire: Perspectives on Western India and the Experience of European Expansion*, edited by Roy MacLeod and Milton Lewis, 38-60. London and New York: Routledge, 1988.

Rappaport, Erika. *A Thirst for Empire: How Tea Shaped the Modern World*. Princeton, NJ: Princeton University Press, 2017.

Rediker, Marcus. *Between the Devil and the Deep Blue Sea: Merchant Seamen, Pirates and the Anglo-American Maritime World, 1700-1750*. Cambridge: Cambridge University Press, 1987.

Reinarz, Jonathan and Rebecca Wynter, "The Spirit of Medicine: The Use of Alcohol in Nineteenth-Century Medical Practice." In *Drink in the Eighteenth and Nineteenth Centuries*, edited by Susanne Schmid and Barbara Schmidt-Haberkamp, 127-40. London: Pickering & Chatto, 2014.

Roberts, David. *Paternalism in Early Victorian England.* London: Croom Helm, 1979.

Rodger, Nicholas. *The Wooden World: An Anatomy of the Georgian Navy*. London: Collins, 1986.

_____. *The Command of the Ocean: A Naval History of Britain*. Vol. 2, *1649-1815* London: Allen Lane, 2004.

_____. *The Safeguard of the Sea: A Naval History of Britain.* Vol. 1*, 660-1649*. New York: W.W. Norton, 1997.

Rogaski, Ruth. *Hygienic Modernity: Meanings of Health and Disease in Treaty-Port China*. Berkeley: University of California Press, 2004.

Rosenberg, Charles E. *The Cholera Years: The United States in 1832, 1849, and 1866*. Chicago and London: University of Chicago Press, 1962.

_____. "What Is an Epidemic? AIDS in Historical Perspective." In *Explaining Epidemics and Other Studies in the History of Medicine*, 278-92. Cambridge: Cambridge University Press, 1992.

_____. "Florence Nightingale on Contagion: The Hospital as Moral Universe," in *Explaining Epidemics and Other Studies in the History of Medicine*, 90-108. New York: Cambridge University Press, 1992.

Roy, Tirthankar. *The East India Company: The World's Most Powerful Corporation*. New Delhi: Portfolio, 2016.

Saldanha, Indra Munshi. "On Drinking and 'Drunkenness': History of Liquor in Colonial India." *Economic and Political Weekly* 30, no. 37 (1995): 2323-31.

Schaffer, Simon et al., eds. *The Brokered World: Go-Betweens and Global Intelligence, 1770-1820*. Sagamore Beach: Science History Publications, 2009.

Seth, Suman. *Difference and Disease: Medicine, Race, and the Eighteenth-Century*. Cambridge: Cambridge University Press, 2018.

Sheard, Sally. "Mixed Motives: Improving the Health of Seamen in Liverpool, 1875-1939." In *European Health and Social Welfare Policies*, edited by Laurinda Abreu, 321-36. Santiago de Compostela: Compostela Group of Universities, 2004.

Shepherd, John. *The Crimean Doctors: A History of the British Medical Services in the Crimean War*, 2 vols. Liverpool: Liverpool University Press, 1991.

Shiman, Lilian Lewis. *Crusade against Drink in Victorian England*. New York: Palgrave Macmillan, 1988.

Silvestri, Michael. "'Paddy Does Not Mind Who the Enemy Is': The Royal Irish Constabulary and Colonial Policing." In *Ireland in an Imperial World: Citizenship, Opportunism, and Subversion*, edited by Timothy G. McMahon, Michael de Nie and Paul Townend, 179-99. London: Palgrave Macmillan, 2017.

Smith, Elise Juzda. "Cleanse or Die: British Naval Hygiene in the Age of Steam, 1840-1900." *Medical History* 62, no. 2 (2018): 177-98.

Spence, Daniel Owen. *A History of the Royal Navy: Empire and Imperialism*. London: I.B. Tauris, 2016.

Spitzer, Leo. "The Mosquito and Segregation in Sierra Leone." *Canadian Journal of African Studies* 2, no. 1 (1968): 49-61.

Stanley, Peter. *For Fear of Pain: British Surgery, 1790-1850*. Amsterdam and New York: Rodopi, 2003.

Stoler, Ann Laura. "Rethinking Colonial Categories: European Communities and the Boundaries of Rule," *Comparative Studies in Society and History* 31, no. 1 (1989): 134-61.

Tambe, Ashwini. *Codes of Misconduct: Regulating Prostitution in Late Colonial Bombay*. Minneapolis and London: University of Minnesota Press, 2009.

Tan, Tai-Yong. "Port Cities and Hinterlands: A Comparative Study of Singapore and Calcutta." *Political Geography* 26, no. 7 (2007): 851-65.

Taplin, E.L. *Liverpool Dockers and Seamen, 1870-1890*. Hull: University of Hull Occasional in Papers Economic and Social History, 1974.

Taylor, Miles, ed. *The Victorian Empire and Britain's Maritime World, 1837-1901*. Basingstoke: Palgrave Macmillan, 2013.

Thomas, Amanda J. *The Lambeth Cholera Outbreak of 1848-1849: The Setting, Causes, Course and Aftermath of an Epidemic in London*. Jefferson, NC and London: McFarland, 2010.

Thompson, E.P. *Customs in Commons*. London: Penguin, 1993.

_____. *The Making of the English Working Class*. London: Victor Gollancz, 1963.

Thorne, Susan. *Congressional Missions and the Making of an Imperial Culture in Nineteenth-Century Britain*. Stanford: Stanford University Press, 1999.

Turnbull, C.M. *A History of Modern Singapore, 1819-2005.* Singapore: NUS Press, 2009.

Vale, Brian and Griffith Edwards. *Physician to the Fleet: The Life and Times of Thomas Trotter, 1760-1832*. Woodbridge: Boydell Press, 2011.

Valverde, Mariana. *Diseases of the Will: Alcohol and the Dilemmas of Freedom*. Cambridge: Cambridge University Press, 1998.

Vinten-Johansen, Peter et al. *Cholera, Chloroform, and the Science of Medicine: A Life of John Snow*. Oxford: Oxford University Press, 2003.

Visram, Rozina. *Ayahs, Lascars and Princes: The Story of Indians in Britain 1700-1947.* London: Pluto Press, 1986.

Vögele, Jörg, and Hideharu Umehara, eds. *Gateways of Disease: Public Health in European and Asian Port Cities at the Birth of the Modern World in the Late 19th and Early 20th Century*. Göttingen: Cuvillier Verlag, 2015.

Vogt, Donald D. "Trends in 19th Century American Cholera Therapy." *Pharmacy in History* 16, no. 2 (1974): 43-53.

Wald, Erica. *Vice in the Barracks: Medicine, the Military and the Making of Colonial India, 1780-1868*. Basingstoke: Palgrave Macmillan, 2014.

_____. “From Begums and Bibis to Abandoned Females and Idle Women: Sexual Relationships, Venereal Disease and the Redefinition of Prostitution in Early Nineteenth-Century India.” *The Indian Economic and Social History Review* 46, no. 1 (2009): 5-25.

_____. “Health, Discipline and Appropriate Behaviour: The Body of the Soldier and the Space of the Cantonment.” *Modern Asian Studies* 46, no. 4 (2012): 815-56.

_____. “Governing the Bottle: Alcohol, Race and Class in Nineteenth-Century India.” *The Journal of Imperial and Commonwealth History* 46, no. 3 (2018): 397-417.

Ward, Peter A. *British Naval Power in the East 1794-1805: The Command of Admiral Peter Rainier*. Woodbridge: Boydell Press, 2013.

Watt, James. “Naval and Civilian Influences on Eighteenth- and Nineteenth-century Medical Practice.” *The Mariner’s Mirror* 97, no. 1 (2011): 148-66.

Williams, David M. “Mid-Victorian Attitudes to Seamen and Maritime Reform: The Society for Improving the Condition of Merchant Seamen, 1867.” *International Journal of Maritime History* 3, no. 1 (1991): 101-26.

Withington, Phil. “Intoxicants and Society in Early Modern England.” *The Historical Journal* 54, no. 3 (2011): 631-57.

Woodman, Richard*, Neptune’s Trident: Spices and Slaves 1500-1807*. Stroud: History Press, 2008.

_____. *Britannia’s Realm: In Support of the State 1763-1815*. Stroud: History Press, 2009.

_____. *Masters under God: Makers of Empire 1816-1884*. Stroud: History Press, 2009.

_____. *More Days, More Dollars: The Universal Bucket Chain 1885-1920* Stroud: History Press, 2010.

_____. *Fiddler’s Green: The Great Squandering 1921-2010*. Stroud: History Press, 2010.

Yeomans, Henry. *Alcohol and Moral Regulation: Public Attitudes, Spirited Measures and Victorian Hangovers*. Bristol: Policy Press, 2014.

Thesis

Kennerley, Alston. *British Seamen's Missions and Sailors' Homes 1815-1970: Voluntary Welfare Provision for Serving Seafarers*. PhD thesis, University of Plymouth, 1989.

Website

Dutton, Vaughan Miles. "Royal Navy Data in the 19th Century: Factors Affecting Data Quality." *http://doc.ukdataservice.ac.uk/doc/7390/mrdoc/pdf/guide.pdf*, accessed on 20 July 2018.