

## Health, Medicine, and the Sea: Australian Voyages, c.1815-1860

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Military men, as histories of the Royal Navy in particular have shown, tend to be interested in controlling sanitary conditions. Among seamen, maintaining health was always essential otherwise ships could not remain at sea. The main theme of Dr. Katherine Foxhall's interesting book is voyages to Australia. On these voyages the internal environment of the vessel was the same, whether those on board were military men or civilians. And once aboard, of course, there was no place to escape an outbreak of disease. Even for regular sailors, usually selected from among fit men, there were always epidemics or other unexpected dangers to health lurking at overseas ports, or else unhygienic supplies to contend with during any voyage. Things might be worse for civilian passengers. Convicts and emigrants were generally from among 'the labouring poor' in Britain. Furthermore, there were usually women and children on ships bound for Australia whose physical condition might be such that they were in an even weaker state. Among the records of their journeys are some of the real and most telling experiences of 19th-century colonists. Vessels with convicts or emigrants might accommodate a variety of social classes compared with a naval man-of-war. Indeed, they carried microcosms of British society, yet all were destined for new lives on the other side of the world. Changes of climate during the voyage and the accompanying physical and mental stress in a cramped and stifling environment often made it difficult for the ship's surgeon to maintain regulations, especially regarding separate living quarters for the sexes or locking the women below deck at night. As the book explains, given the nature of convict and emigrant ships, there was no strict routine for washing decks, clothing or bedding as was prescribed for Royal Navy vessels.

Foxhall's research commences with a study of voyages to Australia based on examinations undertaken by surgeons, and it analyses the internal spaces aboard the ships which largely affected sanitation and hence the

health of the passengers. She focuses thereby on voyages undertaken in tropical climates while discussing convicts, scurvy and diets within British prisons in the first half of the 19th century, comparing those diets with rations issued during the voyage. The relationship between the ship's surgeon and passengers is also examined, even, as the author explains, after arrival in Australia. Foxhall investigates how people understood health at the time and what adaptations were needed in order to sustain it in unfamiliar climates during long voyages. Voyages to Australia tested 'colonial fitness' – essential, of course, for Britain's colonisation of distant lands.

Chapter one discusses how, at the moment of departure, a naval surgeon's decisions and his assessment of the health of passengers were important for a successful voyage. The government made naval surgeons responsible for convict ships in 1815; they thus supported the 'expanding and evolving process of global migration'. However, selecting suitable migrants to the colonies, at least from a medical perspective, was often undertaken by medical officers in chaotic circumstances. Decisions had to be made quickly and sometimes it was necessary for surgeons to reject sickly emigrants or convicts at ports immediately before departure. Naval surgeons were paid after a safe journey with acceptable numbers of convicts and emigrants confirmed to be in good health. Those unfit for the journey were therefore best declared to the port authority. The inspections of convicts undertaken by surgeons in British and Irish ports can be analysed from journals among the Admiralty records in which they recorded their anxieties. Surgeons complained that convicts' illnesses were ignored and often concealed during embarkation by other medical inspectors, thereby creating obvious hazards afloat in the weeks ahead. After the Napoleonic Wars convict transportation became one of the full-time jobs for naval surgeons, particularly so in the 1830s and 1840s. Formal British government emigration schemes to Australia began in 1831. However, it was difficult for surgeons to reject prospective emigrants as they had no authority to assume an overall responsibility for them. Would-be emigrants often travelled long distances to reach departure ports and, in the process, some became unfit for the rigours of a gruelling voyage.

Regarding the weather and departure, surgeons requested that emigrant and convict vessels should not leave in the autumn or winter, especially those from Ireland. Surgeons had to consider that the lifestyle of most ordinary British people was not the same as that for trained military men. Then there was the risk of disease aboard which, in the worst cases, could become epidemic. Cholera was among the most feared of these; it first affected a convict ship in 1831. During an outbreak of disease naval surgeons could seek assistance from a naval hospital, as part of the Royal Navy's medical infrastructure, if they were close to English or Irish southern ports. Emigrant ships, however, had more links to the west and north of England, specifically to Liverpool which was a trading hub and became the main port for voyages to Australia. A further problem was that when aspiring emigrants were left behind at any port the authorities did not provide social welfare. As the author discusses, port inspections by naval surgeons were therefore crucial.

The internal environment of any vessel would obviously prove a key factor for maintaining health among both convicts and migrants bound for the colonies. This is well analysed in chapter two. Insufficient ventilation within the ship was always a problem, as was excluding moisture and controlling damp. The sanitary condition of the ship was largely maintained by keeping the deck dry and ensuring an adequate movement of air. This was necessary to avoid the fevers and other diseases common in prisons in the middle of the 18th century. In the tropics, heat on the ship also caused illness. Deaths among emigrants was mentioned in *The Times* editorial in 1835, despite the fact that Passenger Acts in the early 19th century defined the number of passengers that ships could carry. Storing and controlling the issue of water, and preserving it in a fresh and drinkable state, was another important element in good health aboard. Failures to provide sufficient ventilation, and where unhealthy environments had developed which had caused infectious diseases aboard ship, were often recorded in the 18th century. Indeed, James Lind, the famous physician at Portsmouth's Haslar naval hospital between 1758 and 1783, was quoted as to the critical importance of ventilation, cleanliness and dryness – particularly in bad weather. Scrubbing decks, cleaning ships and cleaning the belongings of convicts and emigrants was done, although not, as noted above, with the same thoroughness as by Royal Navy sailors. An invention by Neil Arnott, using pumps as a method of increasing ventilation, was introduced on warships from the 1840s onwards. This was one example of the

gradual improvements being made in sanitary conditions. The Admiralty experimented with other ways of removing damp from ships by better maintenance of water closets. Chloride of lime and later chloride of zinc were also used as antiseptic and disinfecting agents. Naturally, ships were built using the most water-tight techniques of the time, however water and decomposing material was always in the hold and the smell from the bilges could often be overpowering. Some ships had hospital quarters, similar to naval sick berths. These, however, could sometimes allow contamination because of the extreme humidity. Setting up a sick berth in either convict or emigrant ships was in some respects more difficult than doing so on a man-of-war; more space had to be allocated when both men and women were aboard. More attention also had to be paid to living quarters. All ships' hospital quarters had the problem of unbearable heat and foul air when in the tropics. This, as the author explains, also caused illness aboard, controlling which was a key task for surgeons throughout long voyages.

The focus in chapter three is on the unfamiliar conditions experienced by convicts and emigrants en route for Australia. Sailing for a prolonged period through a tropical climate would inevitably be difficult. Naval officers and seamen, by contrast, routinely travelled in the tropics. It is fascinating to observe a periodical, *The Tropical Times*, produced by passengers aboard *The Elizabeth* sailing from Bristol to Melbourne in 1853 which records their completely new environment. In general, the changeable climate was only recorded by the authorities. Here, however, personal records and the common understanding of such things among the passengers can be found. The passengers gradually became used to the changes, even though, as Foxhall suggests, their health was much influenced by the 'constant movement through the different regions, environments, and climates of the oceans'. Travellers' health was not only affected by the varying temperature and humidity. The food which was supplied to them was sometimes rotten. Furthermore, the strong sun caused sunstroke. Generally uncomfortable changes were recorded by the passengers; their arrival in the tropics was mentioned by some of them in diaries kept while aboard. Surgeons' journals recorded different illnesses following the ship's geographical progress; influenza and rheumatism improved when the ship passed through the Mediterranean climate, while boils appeared when the ship reached the tropics. Heat caused skin problems. Bowel conditions and diarrhoea also became worse – equally affected by changes of diet. Headaches and dizziness were associated with the outbreak of fevers. Heat caused foul odours in the interior of the ship, even as cleaning, ventilation and disinfecting continued. It proved particularly difficult to keep women and children healthy. For women, their frailty could be both physical and psychological. They were more likely to fear the change of climate and in some cases their health and mental condition made it hard for surgeons to communicate with them. And even when considering the need for better ventilation for all passengers, ship's surgeons still had to uphold rules about morality: women had to be separated from men even if the same deck was a better place to stay. In addition to rotten food, surgeons also mentioned poisonous fish as a cause of illness in tropical climates. As Foxhall indicates, medical progress in 18th and early 19th-century Britain was often hindered by the fact that there was no consensus about how to maintain health, even among medical professionals. Gradually more advice was given to those travelling to the Australian colonies in the form of manuals. These manuals, however, did not seem to say much about preparing for the voyage. The ceremony when crossing the line nevertheless provided a unique opportunity aboard when even the ship's captain temporarily relaxed the usual hierarchies of maritime discipline, despite some surgeons' anxieties about disorder.

Scurvy is the focus of chapter four. In the 18th-century scurvy was the most common ailment at sea. There is, of course, a large historical literature which deals with this topic already but it is appropriate to include it as a section here. Throughout this book, though, readers will notice that the theme is not only the progress of medicine; Foxhall puts more weight on the backgrounds of the passengers who suffered from scurvy as well as how surgeons struggled to treat it. Cases of scurvy were discovered only occasionally in emigrant ships. By the 1830s, surgeons recorded scurvy as being found mostly among convicts. To prevent scurvy on convict ships, naval surgeons in the early 19th century tried to improve diet and the living quarters. In the 1820s and 1830s surgeons attributed scurvy among convicts not only to their journey; it had often already been brought about by the prison's dietary regime in Britain or Ireland before departure. Convicts from mid 19th-century prisons were judged to have weakened minds and bodies before transportation to Australia. Issuing lemon juice was one of the most popular treatments for scurvy. However, since the Admiralty

reduced the allocation of lemon and sugar in 1832 it was not only the prisons which reduced rations to convicts. Apart from lemon juice, nitre was issued experimentally on convict ships in the 1820s and 1830s. In 1840 Sir William Burnett, the Medical-Director at the Admiralty, instigated research into scurvy among convicts heading for Australia by analysing cases which appeared at sea. The results merely confirmed the opinions of Lind from almost a century earlier: lemon juice proved to be the most effective remedy. The author discusses these experiments performed in the name of medical science; surgeons were not to cause scurvy but they were allowed to undertake a trial when cases were diagnosed. Nonetheless, improvements in sanitary conditions and in medical knowledge did not change health at sea dramatically in the first half of the 19th century – despite a number of reforms and altered procedures based on various reports. In fact, little seemed to change throughout the history of these Australian voyages. The best that can be said, perhaps, is that some progress in treatments is detectable from case reports and other records.

Beyond the crowded conditions for both passengers and convicts, in chapter five Foxhall explains that these voyages to the colonies are not noteworthy only for the sickly environment endured below deck. The surgeons who lived and laboured among those in transit, and who struggled to control their health, also undertook medical work, especially when performing post-mortem examinations and when carrying vaccine lymph. After all, surgeons were specialists who could supply advice for maintaining healthy living conditions, as was recorded in the diaries of both passengers and surgeons. Examining the dead provided occasional opportunities for surgeons to improve their knowledge since post-mortem study could be beneficial for medical advance. The navy collected records of such analyses. A thorough post-mortem required the ship to stay becalmed. This was not always possible, though, and in some cases the task had to be rushed or the examination abandoned because of rough weather. Examining bodies was also a surgeon's opportunity to explain to the navy's Medical-Director in London that he had not been at fault during the voyage. From the 1820s onwards voyages to the colonies were valuable opportunities to deliver vaccinations. In the 1830s the British government provided vaccination which helped prevent smallpox among emigrants and convicts alike. Compulsory child vaccination started in England and Wales in 1853. Vaccine, of course, was delivered to Australia. This was all experimental work for surgeons but by reducing death rates and offering vaccination in the colonies it is possible to conclude that colonisation schemes and social conditions in Australia were clearly linked. Foxhall concludes by explaining how even after surviving the long voyage, as described in chapter six, it was necessary for new arrivals to spend time in quarantine at Sydney. It depended on the health of the immigrants, because there was always the danger that they would bring typhus or contagious diseases to the colonies.

This is a well-written monograph which makes a useful contribution to areas of academic study which have expanded considerably in the past decade – those of health and medicine at sea and of military medicine more widely. The book contains some maps and illustrations, moreover, images of these hazardous voyages to Australia emerge between the lines while reading. The short narratives and records of the individuals concerned are made interesting and are well organised. Foxhall provides the opinions not only of officials and medical specialists drawn from the Admiralty's records but she also reveals the authentic voices of the common passengers. She shows the ordinary people's understanding of sanitation, of ideas relating to public health and of the nature and causes of disease. Such matters, naturally, remain important for people even today.

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