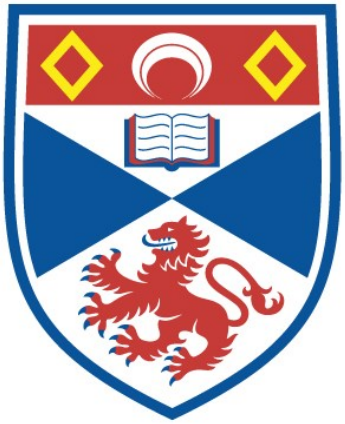
Surgeons at sea: professional identities and medical practice in naval surgeons' journals, 1793–1815

Manon Claire Williams

A thesis submitted for the degree of PhD
at the
University of St Andrews



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Abstract

This thesis examines the medical practices and professional identities of British naval surgeons during a period of professional transformation, bureaucratic reform, and sustained global warfare. It uses the collection of medical logbooks held at the National Archives at Kew (ADM 101), containing the records of medical practice for over one hundred Royal Navy ship services during the French Revolutionary and Napoleonic Wars (1793–1815). This thesis analyses the ways in which naval surgeons negotiated their ambiguous status and purview to fulfil, and even extend, their professional roles. Instead of a top-down bureaucratic account of naval medicine in the period, or an account drawn from the idealised prescriptions of published manuals and treatises, this thesis uses the descriptive records of actual shipboard medical practice. It reveals the ways that naval surgeons constructed their professional identities during a period of transformation within

the naval medical bureaucracy and the British medical community.

Alongside their prescribed use for data collection and information management, naval surgeons used these journals as tools for professional and scholarly communication. The journals reveal how they operated as stakeholders and negotiators in health management and order within the ship œconomy, naval medical bureaucracy, and the Royal Navy. Some surgeons cultivated an identity as 'medical philosophers', operating as knowledge brokers, connecting and performing their medical identities within various overlapping imperial and domestic medical communities. As a collective class, naval surgeons defied traditional professional boundaries, operating as hybrid practitioners. The ways in which they negotiated their professional roles and medical identities underscore the agency and autonomy that these medical professionals could wield within an increasingly bureaucratic state institution. This thesis reveals how the professional identity of a collective class of medical practitioners was cultivated, contested, and performed during a significant moment in professional identity creation within the British medical community.

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Abbreviations

ADM 101: The National Archives, Admiralty Records, Series 101, Medical Logbooks.

Preface

On 27 February 2024, the Royal College of Physicians London welcomed the passing of legislation in the Scottish and UK parliaments to regulate the role of Physician Associates (PAs). Dr. Sarah Clarke, president of the Royal College of Physicians England, expressed hope that the 'Anaesthesia Associates and Physician Associates Order' would lead the General Medical Council, the regulatory body of medical practitioners, to seek 'public consultation' concerning the establishment of 'rules and processes for regulation of PAs.' Clarke noted that PAs, 'when deployed and supervised appropriately, are a valuable part of a multidisciplinary team'; however, greater oversight and intervention was necessary 'to ensure that PAs are brought into regulation by the end of 2024 as planned'.[1]

Concern over the emergence and regulation of PAs in Britain has caused debate over the past few years. Within the state healthcare system of the National Health Service, a need for qualified medical professionals has led to the recruitment of PAs to alleviate shortages of primary care and front-line practitioners. In 2019, NHS England introduced the Additional Roles Reimbursement Scheme to help fund primary care practitioners such as PAs, mental health practitioners, and physiotherapists in primary care practices to alleviate the workloads of General Practitioners (GP). The effects of this scheme, though only intended to supplement the number of practitioners in primary care networks, has instead led to a reduction in employment of GPs, calling into question the job security of GPs despite a chronic shortage of practitioners.[2]

These concerns are not only about employment insecurity, but also patient safety and practitioner training. Entry requirements and training for PAs require just two years of masters-level training or apprenticeship, in comparison to that of physicians, who complete four to six years of medical doctorate and further specialist

[1] 'RCP welcomes legislation to regulate the role of physician associates', Royal College of Physicians London, 27 Feb 2023: https://www.rcplondon.ac.uk/news/rcp-welcomes-legislation-regulate-role-physician-associates.
[2] Sarah Graham, "'I'm a trained GP, but I can't get a job": the absurd new crisis in the NHS', *iNews,* 19 Mar 2024: https://inews.co.uk/inews-lifestyle/trained-gp-cant-get-job-crisis-nhs-2962600; Anna Colivicchi, 'GMC asks NHS England to reassure doctors there is no plan to replace them with PAs', *Pulse,* 25 Oct 2023: https://www.pulsetoday.co.uk/news/workforce/gmc-asks-nhs-england-to-reassure-doctors-there-is-no-plan-to-replace-them-with-pas/.

training. For years now, GPs have been calling for increased oversight and regulation by the General Medical Council—the professional body established in the mid-nineteenth century to regulate GPs, who were themselves the new hybrid practitioners at the time.[3] While PAs may be relatively new to Britain, tensions over the training and professional remit of new medical professions is not.

Increased labour shortages in the healthcare profession have created a space for new hybrid practitioners to fill employment gaps and expand their professional roles, generating concern over education, licensing, qualifications, and disputed occupational boundaries. For example, within the nursing sector, nurses, midwives, and operating theatre nurses, increasingly occupy 'advance practice roles' causing anxieties around their functions and the regulation of their practice.[4] In light of the pressures of the recent COVID-19 pandemic, new conversations emerged about the potential role of paramedics in primary care.[5] Paramedics in the UK are reported to suffer from a poor public understanding of their professional identity despite their expansion into clinical and academic spaces over the past twenty years.[6] In hospitals, sustained labour shortages, increased workloads, and incommensurate pay and recognition led to industrial action, including strikes, among junior doctors in England from Spring 2023 and into 2024.[7] Central to these tensions and anxieties is the

[3] Ben Ireland, 'Call for alternative regulator of—and to rename—physicians associates', British Medical Association, 6 Jul 2023: https://www.bma.org.uk/news-and-opinion/call-for-alternative-regulator-of-and-to-rename-physician-associates; Denis Campbell, 'Public confused over physician associates working in NHS, research finds', *The Guardian*, 13 Dec 2023: https://www.theguardian.com/society/2023/dec/13/public-confused-over-physician-associates-working-in-nhs-research-finds.

[4] Stephen Timmons and Judith Tanner, 'A disputed occupational boundary: operating theatre nurses and Operating Department Practitioners', *Sociology of Health & Illness* 26, n. 5 (2004): 645-66; William Palmer, Sophie Julian, and Louella Vaughan, 'Independent report on the regulation of advance practice in nursing and midwifery', Nuffield Trust, May 2023: https://www.nuffieldtrust.org.uk/sites/default/files/2023-05/Advanced%20practice%20report%20FINAL%5B69%5D.pdf.

[5] Adam Layland, 'Using the pandemic to enhance the role of the paramedic', *Hospital Times*, 23 Jul 2020: https://www.hospitaltimes.co.uk/using-the-pandemic-to-enhance-the-role-of-the-paramedic/; Georgette Eaton, Geoff Wong, Stephanie Tierney, et al., 'Understanding the role of the paramedic in primary care: a realist review', *BMC medicine* 19, n. 145 (2021): online.

[6] Georgette Eaton, 'Addressing the challenges facing the paramedic profession in the United Kingdom', *British Medical Bulletin* 148, n. 1 (2023): 70-78; Georgette Eaton, Kamal Mahtani, and Matt Catterall, 'The evolving role of paramedics—a NICE problem to have?', *Journal of Health Services Research & Policy* 23, n. 3 (2018): 193-195.

[7] Ben Ireland, 'Junior doctors embark on renewed period of industrial action', British Medical Association, News & Opinion, 20 Dec 2023: https://www.bma.org.uk/ news-and-opinion/junior-doctors-embark-on-renewed-period-of-industrial-action; Ben Ireland, 'Doctors begin longest single strike in NHS history', British Medical Association, News & Opinion, 3 Jan 2024: https://www.bma.org.uk/news-and-opinion/doctors-begin-longest-single-strike-in-nhs-history.

relationship between training and remit on one hand, and professional identity and recognition on the other.

These enduring concerns would have been deeply familiar to naval surgeons during the French Wars (1793–1815). This thesis explores how the pressures of sustained warfare led to a chronic recruitment crisis in one of the first state medical bureaucracies, the Royal Navy. Naval surgeons suffered from low status and reputation in the British medical community, which impacted the Navy's recruitment during two decades of global warfare. As a result, stakeholders within the naval medical bureaucracy initiated a series of reforms to improve the standing of the naval surgeon. Concurrently, the British medical establishment was experiencing its own transformations in professional boundaries during the decades around 1800, and new hybrid practitioners flourished in the medical marketplace. This thesis shows how naval surgeons were affected by these two adjacent developments and how they sought to create their own space within the period of change. By examining the records of their medical practice, I demonstrate how these hybrid practitioners constructed and performed their medical identities in the Navy during this period of professional change.

The practice of medicine and surgery are, in some sort, mechanical art. And in every art, two things are necessary. First the necessary materials; second, those materials being arranged and disposed commodiously […]. It would be in vain that the boatswain was supplied with ropes for his rigging if he had not blocks or pullies through with to leve [levy] them; the ship could not be navigated. The surgeon has every necessary article and implement for his practice but no conveniences for applying them with facility to use. He has plenty of ropes and sails but no block or pullies.[8]

Robert Young, HMS *Ardent*, 1797–1798

[8] The National Archives, Kew [henceforth TNA], ADM 101/85/7, f. 21

Introduction

> When a young man enters the Navy, his education is but ill begun and cannot improve. He is put down into a hole, there to remain for years. He is deprived of all communication, of all desire for knowledge. To breathe the vital air, he must live in the promiscuous conversation of a wardroom. Politics, history; anecdote, news; everything is heard there but that which interests him most, his profession![1]
>
> John Bell, 1800

John Bell, the eminent Scottish surgeon and anatomist, depicted naval surgeons as disconnected and isolated from participation in a professional medical community, intellectual exchange, and opportunities for improvement. Historians have referred to this passage as a somewhat unjust representation of naval surgeons, to be viewed in the context of improving medical education rather than disparaging the profession entirely.[2] Though John Bell had not himself served in the Navy, he was a leading figure in anatomical practice and the study of wounds. Bell had experience working in Army and Navy hospitals in Britain and thus was familiar with the professional capacities of naval surgeons.[3] While Bell's text was likely harnessing the rhetorical power of hyperbole, it was persuasive because it was seen to be partially true. Contemporary naval physicians and surgeons frequently complained about the low quality of recruits and the poor status of the naval surgeon.[4] Such portrayals of naval surgeons are inextricably linked to three interwoven contexts around the year 1800: sustained imperial warfare, reforms to the naval medical offices, and blurred professional boundaries within British medicine.

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[1] John Bell, *Memorial Concerning the Present State of Military and Naval Surgery* (Edinburgh: Longman & Rees, 1800), 8-9.

[2] Laurence Brockliss, John Cardwell, and Michael Moss, *Nelson's Surgeon, William Beatty, Naval Medicine, and the Battle of Trafalgar* (Oxford: Oxford University Press, 2005), 17. Initially portrayed more literally in Christopher Lloyd and Jack L. S. Coulter, *Medicine and the Navy, 1714–1815*, v. 3 (Edinburgh: Livingstone, 1961), 29-30.

[3] Lloyd and Coulter, *Medicine in the Navy*, v. 3, 29. For more on John Bell and his discussion of military surgery, see Michael Brown, 'Wounds and Wonder: Emotion, Imagination and War in the Cultures of Romantic Surgery', *Journal for Eighteenth-Century Studies* 43, n. 2 (2020): 239-259.

[4] For contemporaneous accounts of the surgeons' poor reputation around the year 1800, see William Turnbull, *The Naval Surgeon; Comprising the Entire Duties of Professional Men at Sea* (London: Richard Phillips, 1806), vii-viii and xxix-xxx; and Thomas Trotter, *Medicina Nautica: An Essay on the Diseases of Seamen,* v. 1 (London: Cadell & Davies, 1797), 14-15. See chapter one for a more thorough discussion.

John Bell published his *Memorial Concerning the Present State of Military and Naval Surgery* in 1800, during a period of sustained warfare. For seven years Britain had been embroiled in war with France, which would continue for over a decade more until peace was achieved in 1815. The global nature of the conflict meant that the Navy was especially vital to Britain's success, and yet the Navy struggled to recruit sufficient numbers of medical practitioners.[5] A series of reforms brought to Parliament by the naval medical branch in 1795–1796 and 1805 sought both to remedy the recruitment issues and improve medical care for Britain's sea-faring troops. Concurrently, medicine in Britain was undergoing its own transformations in the latter half of the eighteenth century and into the nineteenth. This thesis explores how a period of global conflict enabled surgeons to define their professional identities within this expanding medical bureaucracy. Naval surgeons were most certainly not 'deprived of all communication, of all desire for knowledge', nor entirely disconnected from their profession, as suggested by Bell above. That their medical practice was affected by their naval service and position on ship is certainly undeniable; however, their unique position also allowed them to construct and perform new medical identities, both within the naval medical bureaucracy and the British medical establishment.

This thesis will reveal how naval surgeons constructed and performed their professional identities, operating as stakeholders in health management and medical inquiry within a state medical apparatus. To investigate how naval surgeons, in this period of change, defined their medical roles, both on board the ship and in the wider medical community, I examine their records of medical practice during the French Revolutionary and Napoleonic Wars (1793–1815, henceforth 'French Wars'). To date, most scholarship has focused on the publications of renowned naval physicians, such as Gilbert Blane (1749–1834) and Thomas Trotter (1760–1832), to discuss developments in naval medicine during this period.[6] This thesis uses the descriptive records of shipboard medical practice to explore how naval surgeons negotiated their ambiguous status and purview to fulfil, and even extend, their professional roles within this transforming bureaucracy. Using the collection of professional medical journals

[5] After Britain's victory in the Seven Years' War (1756–1763) and its loss of its American colonies after the Revolutionary War (1775–1783), Britain was left with increased interest in Australia, lucrative colonies in the West Indies, and a strong hold over India and the East Indies, largely through the East India Company.

[6] See the section on sources for more discussion of this.

held in The National Archives at Kew (ADM 101), I examine how these surgeons operated as naval officers and administrators, medical practitioners, and aspiring 'medical philosophers' within the increasingly bureaucratic structure of the Navy. Overall, I reveal how professional medical identities were cultivated and contested during this pivotal period in the professional boundary-making of British medical practice.

In what follows, I will first provide historical and historiographical context for the medical landscape in Britain, unpacking what it meant to be a surgeon at the close of the eighteenth century. I introduce the concept of 'medical identities' to describe how medical practitioners performed professional identities within a broader medical culture. Then, I outline the distinct medical culture that existed within military medicine as a consequence of global warfare and imperial expansion. The historical trends enmeshed in medical practice in the military are key to understanding how naval surgeons positioned themselves within the military bureaucracy, the imperial project, and the wider British medical community.

Prior to these discussions, I must define the terms that will come up. I use 'medical practitioner' to describe any individual who was perceived to practice medicine, regardless of status. This label could include surgeons or physicians, colonial doctors or physicians of the fleet, naval or civilian. Throughout my thesis, I often use 'practitioner' interchangeably with 'naval surgeon' when status is not significant, as a shorthand way of encapsulating these medical professionals. As will become significant in chapter four of my thesis, I distinguish between 'medical practice' and 'medical inquiry' or 'medical philosophy/-ers'. Medical practice refers to the duties of these practitioners to manage healthcare, including recordkeeping, treatment, and prevention. Medical inquiry or medical philosophy refers the investigative act of participating in research to improve and understand treatment, diagnosis, aetiology, and prevention. While all naval surgeons were medical practitioners performing medical practice, they were not all 'medical philosophers' engaged in medical inquiry. These distinctions and their significance in the context of the medical transformations in Britain will be explored in the next section.

Medicine in Britain, c. 1750–1850

Institutions of Medicine

Since the 1960s, scholars have identified the late eighteenth century as foundational in the development of modern medicine. This was famously argued by Michel Foucault and Erwin Ackerknecht, who located the origins of modern clinical medicine in post-revolutionary Paris. Foucault argued that medical relationships and discourses between doctor and patient were reframed in the wake of the French Revolution due to a restructuring of the social meaning of the hospital from a poorhouse to a teaching hospital and the concurrent birth of pathological anatomy in Paris.[7] Similarly, Ackerknecht argued that modern hospital medicine emerged in Paris' Hôtel-Dieu from a political and technological revolution in the aftermath of the French Revolution, based on medical statistics, pathological anatomy, and physical examinations.[8] Both scholars centred their analyses on medical institutions and, though they differed in their approach, they arrived at similar conclusions about the medicalisation of poor houses into hospitals, where a new form of modern, clinical medicine could be located.

Historians of British medicine have since contested this simplified narrative, arguing that modernising trends in medical development can also be seen in eighteenth-century Britain. Since the 1980s, scholars have expanded on Edinburgh and Glasgow's significant role in eighteenth-century medical education and practice.[9] In particular, the rise of medical schools associated with Scottish universities provided alternatives to the traditional liberal education of medicine and natural philosophy acquired by elite physicians at Oxford and Cambridge. New methods of bedside lectures, pioneered by Herman Boorhaave in early eighteenth-century Leiden, shaped the medical education offered at Edinburgh long before the Parisian developments.[10]

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[7] Michel Foucault, *The Birth of the Clinic: An Archaeology of Medical Perception*, trans. A. M. Sheridan Smith (London: Tavistock, 1973). Originally published in 1963.
[8] E. H. Ackerknecht, *Medicine at the Paris Hospital, 1794–1848* (Baltimore: Johns Hopkins Press, 1967).
[9] William Bynum and Roy Porter, eds., *William Hunter and the Eighteenth-Century Medical World* (Cambridge: Cambridge University Press, 1985); Guenter B. Risse, *Hospital Life in Enlightenment Scotland: Care and Teaching at the Royal Infirmary of Edinburgh* (Cambridge: Cambridge University Press, 1986); Lisa Rosner, *Medical Education in the Age of Improvement: Edinburgh Students and Apprentices, 1760–1826* (Edinburgh: Edinburgh University Press, 1991); Johanna Geyer-Kordesch and Fiona Macdonald, *Physicians and Surgeons in Glasgow: The History of the Royal College of Physicians and Surgeons of Glasgow, 1599–1858* (London: Hambledon Press, 1999); Ulrich Tröhler, *'To Improve the Evidence of Medicine': The 18th Century British Origins of a Critical Approach* (Edinburgh: Royal College of Physicians of Edinburgh, 2000); M. H. Kaufman, *The Regius Chair of Military Surgery in the University of Edinburgh, 1806–55* (Amsterdam: Rodopi, 2003).
[10] Risse, *Hospital Life in Enlightenment Scotland.*

Further, the curriculum of these new Scottish medical schools included lectures on medicine, surgery, midwifery, and other allied sciences such as chemistry.[11] As we will see below, this educational shift had consequences for the professional divide between practitioners.

Historians of British medicine also examined the development of clinical and educational institutions in England. Private surgical anatomy schools emerged in London, often founded by physicians and surgeons from Scottish medical establishments, such as William Hunter (1718–1783) and later Charles Bell (1774–1842).[12] Infirmaries and hospitals in urban centres, initially operating as charitable poor houses, also became spaces of medicine through the eighteenth century, where medical practitioners donated their time to treat the sick in return for more practical experience.[13] These social and institutional studies have shed light on the power dynamics that shaped early clinical medicine in Britain and the roles of these institutions in the standardisation of medical practice. The military was another important British institution that shaped medicine, which we will examine in more depth below. My thesis explores how the Navy functioned as a medical institution during this formative moment in the development of 'modern' medicine.

Practitioners of Medicine

In the eighteenth century, three official groups of medical men existed in Britain, roughly aligned with social status.[14] This tri-partite divide between physicians, surgeons, and apothecaries had its roots in the professional guilds and associations established in the sixteenth century.[15] On the lowest social rung, apothecaries, who

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[11] Rosner, *Medical Education in the Age of Improvement*; Geyer-Kordesch and Macdonald, *Physicians and Surgeons in Glasgow,* 193-250.

[12] William Bynum, 'Physicians, hospitals and career structures in eighteenth-century London', in *William Hunter and the Eighteenth-Century Medical World*, 105-128; Toby Gelfand, "'Invite the philosopher, as well as the charitable": hospital teaching as private enterprise in Hunterian London', in *William Hunter and the Eighteenth-Century Medical World*, 129-152.

[13] Mary Fissell, *Patients, Power, and the Poor in Eighteenth-Century Bristol* (Cambridge: Cambridge University Press, 1991); Susan Lawrence, *Charitable Knowledge: Hospital Pupils and Practitioners in Eighteenth-Century London* (Cambridge: Cambridge University Press, 1996).

[14] The eighteenth century also saw the rise of obstetrics in the hands of male practitioners, rather than midwives, but this was largely a development out of medicine and surgery. The following discussion is summarised from Irvine Loudon, *Medical Care and the General Practitioner 1750–1850* (Oxford: Oxford University Press, 1986), 11-99, esp. 19-21.

[15] There existed separate guilds in Edinburgh, Glasgow, and London, which all have separate institutional histories and timelines for incorporation. However the situation in England provides one example of how these associations worked as professional medical bodies.

dispensed medicines, belonged to the Society of Worshipful Apothecaries, established in 1615, though they had previously been associated with the grocers' guild. Physicians were the most elite practitioners, versed in the learned art of *physic*, which was rooted in theories of disease and the body's internal systems. These Galenic and Hippocratic theories were largely passed down through a university education at Oxford or Cambridge in Greek and Latin before licensing at the College of Physicians (f. 1518).[16] In 1540, an act of Parliament sought to distinguish physicians from surgeons, who came from humbler backgrounds and underwent training as apprentices for their trade. As a consequence, surgeons joined with the Company of Barbers to form the Company of Barber-Surgeons. In 1745, it split, and the Company of Surgeons was formed, later renamed the Royal College of Surgeons in London in 1800. To be a surgeon in the eighteenth century was to practice the manual trade of surgery, learned through apprenticeship.[17] Surgeons pulled teeth, dressed wounds, and performed minor surgical operations—the use of their hands was an integral part of their practice, unlike that of physicians.[18] However, these traditional disciplinary boundaries were beginning to shift in the latter half of the eighteenth century.

It is important to further specify the labels applied within the Navy. Most naval surgeons were surgeons, licensed through the Royal College of Surgeons. Within the naval context, there was a further distinction between surgeons and assistant surgeons (referred to as surgeons' mates prior to 1805). Surgeons did not always note their rank in their journals, so I frequently use 'surgeons' to describe the authors of the journals that I examine, unless the 'assistant/mate' status is clearly stated. Some naval practitioners held medical degrees and were licensed by the Royal College of Physicians. This qualified them for the position of naval physician where they would have managerial oversight at a naval hospital or over one of the Navy's fleets as a Physician of the Fleet. However, there are a few rare cases in the journals of practitioners who held medical degrees and were thus technically 'physicians' according to standards in Britain but still occupied the position of 'surgeon' on the naval ship.

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[16] Bynum, 'Physicians, hospitals and career structures in eighteenth-century London'.
[17] Joan Lane, 'The role of apprenticeship in eighteenth-century medical education in England' in *William Hunter and the Eighteenth-Century Medical World*, 57-103.
[18] For an excellent exploration of these stereotypes in eighteenth-century print culture, see Christopher Lawrence, 'Medical Minds, Surgical Bodies: Corporeality and the Doctors', in *Science Incarnate: Historical Embodiments of Natural Knowledge*, Christopher Lawrence and Stephen Shapin, eds. (Chicago: University of Chicago Press, 1998), 156-201.

Thus, in the naval context, the surgeon was a position of employment, as well as a status. A more thorough explanation of the naval surgeon's career and status will come in chapter one, but first we must return to the charging context in Britain.

Since the 1980s and 1990s, historians of medicine have debated the nature of professionalisation in medicine. Early modern historians have described eighteenth-century Britain as operating a 'medical marketplace' in which physicians, surgeons, and apothecaries operated in a free market alongside non-orthodox practitioners, or 'quacks'.[19] Irvine Loudon has argued that the 'open market' and space for 'irregular practice' facilitated the growth of surgeon-apothecaries or prescribing druggists, who functioned as early general practitioners. The overcrowded market of the early nineteenth century led to contestation over the remit of various medical men. The Apothecaries Act of 1815 established regulations for the training and licencing of these surgeon-apothecaries within the contested medical marketplace, though Loudon argues that the significance of the Act has been overstated.[20] Similarly calling upon the idea of an 'open market', Christopher Lawrence has argued that new educational opportunities in Scottish medical schools, London anatomy schools, or urban infirmaries and hospitals offered a more hybridised education and blurred disciplinary boundaries. As physicians increasingly got their hands dirty in anatomy, surgeons were exposed to Enlightenment learning outside their trade.[21] Indeed, Lawrence has noted in passing that naval surgeons were classic disruptors of this traditional divide, functioning as hybrid practitioners.[22]

In contrast historians of nineteenth-century medicine have largely viewed the early nineteenth century as a key moment in the professionalisation and regulation of medical practitioners, culminating in distinct jurisdictions and licencing in the mid-

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[19] Along with the examples below, see: William Bynum and Roy Porter, eds., *Medical Fringe and Medical Orthodoxy, 1750–1850* (London: Croom Helm, 1987); Roy Porter, *Health for Sale: Quackery in England, 1750–1850* (Manchester: Manchester University Press, 1989); Anne Digby, *Making a Medical Living: Doctors and Patients in the English Market for Medicine, 1720–1911* (Cambridge: Cambridge University Press, 1994); Mark S. R. Jenner and Patrick Wallis, eds., *Medicine and the Market in England and its Colonies, c.1450–c.1850* (Basingstoke, UK: Palgrave Macmillan, 2007); Alun Withey, *Physick and the Family: Health, Medicine and Care in Wales, 1600–1750* (Manchester: Manchester University Press, 2012).

[20] Loudon, *Medical Care and the General Practitioner.*

[21] Christopher Lawrence, 'Ornate Physicians and Learned Artisans: Edinburgh Medical Men, 1726–1776', in *British Medicine in an Age of Reform*, Roger French and Andrew Wear, eds. (London: Routledge, 1991), 153-176; Risse, *Hospital Life in Enlightenment Scotland*; Geyer-Kordesch and MacDonald, *Physicians and Surgeons in Glasgow*, 293-337.

[22] Christopher Lawrence, *Medicine in the Making of Modern Britain, 1700-1920* (London: Routledge, 1994), 23-25.

nineteenth century. Influenced by sociological theories of professionalisation from the 1970s, Ivan Waddington traced the development of the general practitioner, emphasising the socio-economic processes of the industrial revolution, to examine the rise of general practitioners as a professional class.[23] Waddington argued that the lack of a professional representative body for surgeon-apothecaries led institutional bodies to define, regulate, and protect their practice, stressing the importance of the Medical Act of 1858, which created a Medical Register and the General Medical Council to regularise practice. This approach has not been without its critics, with some historians viewing such narratives as teleological.[24] However, as we will see, professionalisation narratives have been central to more recent studies on army medical officers.[25]

More recently over the past decade, scholars have paid closer attention to culture and identity in professional articulations of medical men. In *Performing Medicine*, Michael Brown proposed a new way of conceptualising medical practitioners, focusing on the performance of their identities within specified medical cultures.[26] Brown's examination of provincial medical practice in York from 1760 to 1850 sought to reconcile the individualised medical marketplace of the eighteenth century and the structural narratives of professionalisation in the nineteenth century. Brown draws on the work of historians of American medicine, such as John Harley Warner, who argued that therapeutic choices and practices were central to the medical identity of a practitioner, and Steven Stowe, who provided a culturally-specified construction of medical practice in the antebellum South.[27] Brown uses the term 'medical identities' to describe how medical practitioners performed certain styles of practice and articulated their medical identities within a broader medical culture. Physicians, surgeons, and apothecaries were individuated by distinct medical practices yet bound together by a

[23] Ivan Waddington, *The Medical Profession in the Industrial Revolution* (Dublin: Gill and Macmillan, 1984).
[24] Christopher Lawrence, 'Democratic, divine, and heroic: the history and historiography of surgery', in *Medical Theory, Surgical Practice: Studies in the History of Surgery*, Christopher Lawrence, ed. (London: Routledge, 1992), 1-27; see also Michael Brown, *Performing Medicine: Medical Culture and Identity in Provincial England, c. 1760–1850* (Manchester: Manchester University Press, 2011), 6; Michael Brown, *Emotions and Surgery in Britain* (Cambridge: Cambridge University Press, 2023), 6-7.
[25] Marcus Ackroyd, Laurence Brockliss, Michael Moss, Kate Retford, and John Stevenson, *Advancing with the Army: Medicine, the Professions, and Social Mobility in the British Isles, 1790–1850* (Oxford: Oxford University Press, 2006).
[26] Brown, *Performing Medicine*.
[27] John Harley Warner, *The Therapeutic Perspective: Medical Knowledge, Practice, and Identity in America, 1820–1885* (Cambridge, MA: Harvard University Press, 1986); Steven M. Stowe, *Doctoring the South: Southern Physicians and Everyday Medicine in the Mid-Nineteenth Century* (Chapel Hill: University of North Carolina Press, 2004).

broader ascription to a culture of sociability, politeness, and gentility—what Brown refers to as the 'medico-gentility'.[28] However, a new medical culture emerged after 1815 increasingly focused on the social applicability of expertise, aligning 'science' and reform over the social body.[29] My thesis will use the performative and culturally-driven construction of medical identities to reveal how the unique culture of the Navy shaped the medical identities of naval surgeons. Further, I argue demonstrate that the trends that Brown identifies in post-1815 provincial medicine are present in naval surgeons' roles during the French Wars, suggesting that this utilitarian and practical application of medical expertise emerged earlier within a military context.

Seeking to situate the eminent surgeon Charles Bell (1774–1842), brother to John Bell (1763–1820), within the 'age of reform', Carin Berkowitz has provided a biographical account of the famous London surgeon 'as an aspiring natural philosopher and ambitious medical man'.[30] Her work has explicitly used a biographical approach to untangle the social and political complexities that shaped Bell's practice and professional identity in the shifting medical landscape of early nineteenth-century London. Though Bell was unique, gaining fame and prestige for his historical impact on the development of anatomy and surgery, he was not an anomaly in terms of how he positioned his identity. As my thesis will demonstrate, naval surgeons also performed this identity of philosopher, with similar attempts 'to create a science of medicine'.[31] Very recently, Michael Brown has argued that a culture of 'Romantic surgery', which centred sensibility, compassion, and emotional engagement, arose in the late eighteenth and early nineteenth centuries. Referring to the influence of John Bell and Charles Bell, Brown highlights the distinctive scientific culture that emphasised the role of emotions and embodiment 'in shaping surgical practice, identity, and experience' among surgeons in nineteenth-century Britain.[32] What these studies convey so well is that surgeons were explicitly assuming and performing new medical identities that further detached them from the earlier origins of their trade. My thesis explores how the reformative medical identities and cultures explored by

[28] Brown, *Performing Medicine*, 13-81.
[29] Brown, *Performing Medicine*, 113-192.
[30] Carin Berkowitz, *Charles Bell and the Anatomy of Reform* (Chicago: Chicago University Press, 2015), 3-4.
[31] Berkowitz, *Charles Bell and the Anatomy of Reform*, 2.
[32] Brown, *Emotions and Surgery in Britain*, 7. For the Bell brothers' surgical practice in the military, see Brown 'Wounds and Wonder'.

Berkowitz and Brown played out in naval surgeons' practice, thus linking civilian and naval medical cultures.

Surgeons employed in the British Royal Navy during the French Wars were frequently seen as operating on the fringes of the British medical establishment. However, studying naval surgeons provides the ideal opportunity to examine how medical practitioners negotiated their multi-faceted identities within various overlapping medical cultures in a global context. As this thesis will demonstrate, some naval surgeons made concerted efforts to participate in the British medical culture as 'medical philosophers', but the unique context of the Navy as a state apparatus shaped the ways that naval surgeons were able to engage and perform within these overlapping spheres and cultures. As a performative action, the professional identity of the naval surgeon can be seen as negotiated act responding to different communities of belonging. In order to understand the creation and performance of this professional medical identity, it is first necessary to place these developments within the broader culture and context of the Navy, the military, and empire.

Military Medicine and Empire

Naval Histories

Naval surgeons and naval medicine specifically have received sustained attention from retired civilian practitioners, naval surgeons, and popular enthusiasts. Since the 1940s, largescale descriptive studies of naval medicine have focused on empirical details of disease, famous naval physicians, and the naval medical bureaucracy, often providing triumphalist accounts of British naval power.[33] J. J. Keevil, C. Lloyd, and J. L. S. Coulter's foundational four-volume *Medicine and the Navy, 1200–1900* (published 1957–1963) has remained the formative text in the field, providing an encyclopaedic institutional history of naval medicine, though with little contextualisation in broader

[33] L. H. Roddis, *A Short History of Nautical Medicine* (New York: Paul Hoeber, 1941); R. S. Allison, *Sea Diseases: The Story of a Great Natural Experiment in Preventative Medicine in the Royal Navy*, (London: John Bale Medical Publications, Ltd., 1943); R. Allison, 'Sea Surgeons', *Journal of the Royal Naval Medical Service* 27 (1941): 125-137; John Stewart, 'Hospital Ships in the Second Dutch War', *Journal of the Royal Naval Medical Service* 34 (1948): 29-35; John Sutherland, 'The Hospital Ship, 1608–1740', *Mariner's Mirror* 22, n. 4 (Oct 1936): 422-426; J. J. Keevil, 'Leonard Gillespie, M.D., 1758–1742', *Bulletin of the History of Medicine* 28, n. 4 (1954): 301-332; S. J. Glass, 'James Lind, M.D. Eighteenth-Century Naval Hygienist', *Journal of the Royal Navy Medical Service* 34, n. 50 (1948–1949): 75-90.

historical processes.[34] This institutional history of the naval medicine was complemented in the 1970s by those of the Army medical department, as well as studies on military medicine more broadly.[35] These early histories frequently highlighted the inadequacies of medical care in the military in the eighteenth century prior to its transformative 'modernisation' from the French Wars onwards. Their authors tend to agree that military medicine would come to have a profound effect in shaping public health and hospital medicine in a civilian context in the nineteenth century, but the picture they painted for the eighteenth century was one of stagnancy—devoid of any marked development.[36] As we will see, more recent revisionist accounts have challenged this teleological perspective, seeking to place these historical developments in their context of its time.

Public fascination with naval surgeons and the practice of medicine at sea has continued to hold interest well into the twenty-first century. Popular histories, often written by retired doctors, have provided a broad-brush overview of the diseases and ailments surgeons dealt with on ship.[37] For a different audience, Michael Crumplin's *Men of Steel* provides an exhaustive account of surgical practice and techniques in the Napoleonic Wars. A retired civilian surgeon himself, Crumplin's book is pitched towards a highly specialised medical audience and will likely remain unrivalled in its detail.[38] Though these histories play into triumphalist narratives of progress and British naval power, they also reveal a sustained fascination with the idea of practising medicine on a ship.

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[34] J. J. Keevil, *Medicine and the Navy,* v. 1 and 2 (Edinburgh: Livingstone, 1957–1958); C. Lloyd and J. L. S. Coulter, *Medicine and the Navy,* v. 3 and 4, (Edinburgh: Livingstone, 1961–1963).

[35] Neil Cantlie, *A History of the Army Medical Department*, 2 vols. (Edinburgh: Churchill Livingstone, 1974); Richard Blanco, 'The Development of British Military Medicine', *Military Affairs* 38, n. 1 (Feb 1974): 4-10; Peter Mathias, 'Swords into Ploughshares: The Armed Forces, Medicine and Public Health in the Late Eighteenth Century', in *War and Economic Development: Essays in Memory of David Joslin*, J. Winter, ed. (Cambridge: Cambridge University Press, 1975), 73-90; Paul E. Kopperman, 'Medical Services in the British Army, 1742–1783', *Journal of the History of Medicine and Allied Sciences* 34, n. 4 (1979): 428-455.

[36] Mathias, 'Swords into Ploughshares', 78.

[37] J. Worth Estes, *Naval Surgeon: Life and Death at Sea in the Age of Sail* (Canton, MA: Science History Publications, 1998); Joanna Druett, *Rough Medicine: Surgeons at Sea in the Age of Sail* (New York: Routledge, 2000); Zachary Friedenberg, *Medicine Under Sail* (Annapolis, MD: Naval Institute Press, 2002); Kevin Brown, *Poxed and Scurvied: The Story of Sickness and Health at Sea* (Barnsley, UK: Seaforth Publishing, 2011); Kevin Brown, *The Seasick Admiral: Nelson and the Health of the Navy* (Barnsley, UK: Seaforth Publishing, 2015); Kevin Brown, *Fittest of the Fit: Health and Morale in the Royal Navy* (Barnsley, UK: Seaforth Publishing, 2018).

[38] Michael Crumplin, *Men of Steel: Surgery in the Napoleonic Wars* (Uckfield, UK: Naval & Military Press, 2007).

Academic histories of the Royal Navy during the 'Age of Nelson' have increasingly sought to ground their analyses in broader historical processes. The advent of social history in the 1960s inspired the first collective histories of seamen, with more sustained attention by historians from the 1980s onwards.[39] In the past two decades, a rejuvenated interest in naval history has seen novel social and cultural approaches reframing the Navy as an employer, institution, culture, and community.[40] Though the field is still concerned with naval operations and role of the state, historians have increasingly centred such discussions on agency, power, and culture.[41] Officers, foreign recruits, women, and Black sailors have all received renewed attention from historians seeking to integrate these naval actors within broader historical processes and dismantle nationalist narratives of British naval might.[42] This new wave of naval history has revealed how the Navy, as an institution and culture, can be examined critically by historians for insights into British society at large. This thesis draws on this scholarship to analyse naval surgeons and their place within this institution.

As one of the main entry points into the medical profession in Britain, the military, by which I mean the Army and Navy combined, remains an important venue to consider when examining professional identities in British medicine. Since the 1990s, historians have found military medicine a fruitful way of exploring state intervention in medical care, both through the bureaucratisation of the medical departments of the Army and Navy and the professionalisation of Army and Navy medical officers. The influence of colonialism and imperialism on the development of modern medicine has also received considerable attention.

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[39] Some foundational social histories of the Royal Navy include: Christopher Lloyd, *The British Seaman, 1200–1860: A Social Survey* (London: Collins, 1968) and, later, N. A. M. Rodger, *The Wooden World: An Anatomy of the Georgian Navy* (London: Fontana Press, 1988).

[40] See the introduction to *A New Naval History,* Quentin Colville and James Davey, eds. (Manchester: Manchester University Press, 2018), esp. 4-5.

[41] See for example, N. A. M. Rodger, *Command of the Ocean: A Naval History of Britain, 1649–1815* (London: Penguin, 2004); Roger Knight and Martin Wilcox, *Sustaining the Fleet, 1793–1815: War, the British Navy and the Contractor State* (Woodbridge, UK: Boydell Press, 2010); James Davey, *The Transformation of British Naval Strategy: Seapower and Supply in Norther Europe, 1808–1812* (Woodbridge, UK: Boydell Press, 2012).

[42] Sara Caputo, *Foreign Jack Tars: The British Navy and Transnational Seafarers during the Revolutionary and Napoleonic Wars* (Cambridge: Cambridge University Press, 2022); John Morrow, *British Flag Officers in the French Wars, 1793–1815: Admirals' Lives* (London: Bloomsbury Academic, 2018); Evan Wilson, *A Social History of British Naval Officers, 1775–1815* (Woodbridge, UK: Boydell Press, 2017); Charles Foy, 'The Royal Navy's Employment of Black Mariners and Maritime Workers, 1754–1783', *International Journal of Maritime History* 28, n. 1 (2016): 6-35; S. A. Cavell, *Midshipmen and Quarterdeck Boys in the British Navy, 1771–1831* (Woodbridge, UK: Boydell Press, 2012); Suzanne J. Stark, *Female Tars: Women aboard Ship in the Age of Sail* (Annapolis, MD: Naval Institute Press, 1996).

Medical Intervention in Military Bureaucracies

In contrast to the flexible and individualised 'medical marketplace' model that flourished in histories of medicine in Britain, historians of military medicine have grounded their analyses in state intervention. In 1989, John Brewer identified the emergence of the 'fiscal-military state' after the Glorious Revolution (1688-1689). He argued that central government and military administration began to play a significant role in Britain's imperial dominance on global scale, thus shaping how the state operated administratively.[43] Focusing explicitly on the medical administration of the military bureaucracy, Harold Cook discussed the appointment of ranked medical officials in the Army and Navy, permanent paid staff, and the creation of hospitals as an attempt to standardise and systematise medical care alongside the development of a bureaucratic state.[44] He argued that military medicine emerged in the context of eighteenth-century warfare because the individualised medicine practiced in Britain did not match the needs of the military abroad, which required quick, effective, and universal treatments. Cook argued that this new class of medical men, hired by the state to practice in the Army and Navy, prioritised empirical and practical medicine based in experimentation and lived experience over the learned theories present in British civilian medicine.

Military medicine, including naval medicine, has since received sustained attention as a distinct medical venue and practice.[45] Scholars have examined how developments in medical statistics, empirical practice, vaccination, hygiene, and nutrition emerged from these military institutions.[46] Attention to the unique features of their medical practice has also shed light on its distinctiveness from civilian medicine practiced in Britain. In her study of the Army Medical Department, Catherine Kelly

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[43] John Brewer, *The Sinews of Power: War, Money and the English State, 1688–1783* (London: Unwin Hyman, 1989).

[44] Harold J. Cook, 'Practical Medicine and the British Armed Forces after the "Glorious Revolution"', *Medical History* 34, n. 1 (1990): 1-26.

[45] G. L. Hudson, ed. *British Military and Naval Medicine, 1600–1830* (Amsterdam: Rodopi, 2007); David Boyd Haycock and Sally Archer, eds, *Health and Medicine at Sea, 1700–1900,* (Woodbridge, UK: Boydell Press, 2009).

[46] Tröhler, '*To Improve the Evidence of Medicine*'; James Watt, 'Naval and Civilian Influences on Eighteenth- and Nineteenth-Century Medical Practice', *The Mariner's Mirror* 97, n. 1 (Feb 2011): 148-166; Erica Charters, 'L'histoire de la quantification: La guerre Franco-Anglaise et le développement des statistiques médicales', *La Découverte: dix-huitième siècle* 1, n. 47 (2015): 21-38.

has argued that the French Wars served as a significant catalyst in developing 'military medicine' as a unique discipline based on empirical observations in the 'field' and practical solutions, which she argues would come to shape civilian medicine after demobilisation in 1815.[47] Michael Crumplin's account of naval surgery during the French Wars has reminded us that naval surgeons encountered trauma cases at much higher rates than civilian practitioners, even if a majority of their case load was infection and disease control rather than surgical operation.[48] These studies highlight that the distinctiveness of military medicine emerged from its function within an institution of war and imperialism.

Erica Charters has demonstrated how the state began systematically to intervene in troop health and welfare on a global scale during the Seven Years' War (1756–1763). Drawing on bureaucratic records and correspondence among commanding officers and the military bureaucracy, Charters shows that state intervention in troop welfare emerged out of the imperialistic aims of the British state but was also shaped by the paternalistic care of the commanders and public opinion over troop mortality rates. Resolving issues of manpower relied on the state's capacity to discipline bodies through interventions in hygiene and diet; this in turn led to the Army and Navy's enhanced roles in developing expertise in medical and scientific developments.[49] Charters argues that military medicine was an empirical, experimental, and adaptable force wielded by a developing medical bureaucracy. Charters has also explored how military bureaucracy harnessed the vast amounts of quantitative data produced through recordkeeping to make statistical comparisons that guided medical care and military strategy through the eighteenth century.[50]

While sustained state intervention in troop health on a global scale emerged in the Seven Years' War, my thesis examines the expansion of medical intervention during the French Wars as a result of the reforms occurring within the naval medical branch. In the early stages of the French Wars, the administration of health in the Royal Navy was under the management of The Commissioners for taking Care of Sick

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[47] Catherine Kelly, *War and the Militarization of British Army Medicine, 1793–1830* (London: Pickering and Chatto, 2011).
[48] Michael Crumplin, 'Surgery in the Royal Navy during the Republican and Napoleonic Wars (1793–1815)', in *Health and Medicine at Sea*, 63-89. See also his monograph: Crumplin, *Men of Steel.*
[49] 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).
[50] Charters, 'L'histoire de la quantification'.

and Wounded Seamen and for the Care and Treatment of Prisoners of War, henceforth referred to as the 'Sick and Hurt Board'. This Board operated independently, but as a subsidiary to the Navy Board, which governed daily operations of the Navy's administration, especially its dockyards and personnel. In 1806, the Sick and Hurt Board was absorbed into the Transport Board, with specialised medical commissioners running the medical components. The Transport Board dissolved in 1817 and was brought under the control of the Victualling Board, another subsidiary of the Navy Board, in charge of provisioning and supplying foodstuffs. It was not until 1832 that a discrete medical department in the Navy was once again formed under the auspices of William Burnett.[51]

The Sick and Hurt Board during the period of the French Wars has not been extensively studied. The scholarship that existed for most of the twentieth century tended to attribute the lack of medical development to a stagnant bureaucracy, if not outright corruption and mismanagement.[52] In the past quarter century, scholars have taken another look at the Board's administrative records to contextualise its functions within the Navy. These studies have tended to focus on one of two contexts. The first set of studies focused on the core of the eighteenth century. Pat Crimmin argued that the Board largely functioned as an administrative and financial body rather than providing medical expertise—a feature that only began to change during the French Wars.[53] In her doctoral thesis, Cori Convertito examined the Sick and Hurt Board's minutes and correspondence, as well as some surgeons' journals, to assess the effectiveness of the naval medical branch's health interventions in the West Indies campaigns from 1770 to 1806.[54] The prevention of scurvy has frequently been used as a litmus test for the effectiveness of the Sick and Hurt Board's medical intervention, and historians have increasingly demonstrated how limitations in provisioning and

[51] For these nineteenth-century developments, see David McLean, *Surgeons of the Fleet: The Royal Navy and its Medics from Trafalgar to Jutland* (New York: IB Tauris, 2010).
[52] The traditional narrative of inefficiency and corruption can be seen in earlier works, such as Lloyd and Coulter's *Medicine and the Navy*, v. 3.
[53] Pat Crimmin, 'The Sick and Hurt Board and the Health of Seamen c. 1700–1806', *Journal for Maritime Research* 1, n. 1 (1999), 51; Pat Crimmin, 'The Sick and Hurt Board: Fit for Purpose?', in *Health and Medicine at Sea*, 90-107.
[54] Cori Convertito, 'The Health of British Seamen in the West Indies, 1770–1806' (unpublished PhD thesis, University of Exeter, 2011).

contemporary medical theories contributed to stalling action from the Board.[55] The second context focused on the departmental reorganisation of the Board in the nineteenth century under William Burnett.[56] Between these two contexts, the French Wars remained either a concluding or introductory note. As I argue in chapter one, the reforms to the Sick and Hurt Board in 1795–1796 and 1805 fundamentally reshaped the medical authority of the Board as a medical bureaucracy, which impacted the medical professionals employed within this institution.

Professionalisation of Army and Navy Medical Officers

Historians have explored how the medical officers employed in the Army and Navy operated within the military bureaucracies and how they used their experience to advance professionally. Historians have used different methodologies and sources to approach the professional identity-making of these practitioners. Among histories of the Navy, biographies have remained popular, offering well-researched, detailed accounts of the lives of esteemed or famous naval practitioners, such as the reformer Thomas Trotter or William Beatty, the surgeon famous for being at Lord Nelson's death at Trafalgar in 1805.[57] However, their focus on singular practitioners poses a problem with generalisability, highlighting issues intrinsic to biographical accounts.

Christopher Lawrence has provided the decisive examination of naval surgeons' professional role on ship. Lawrence argued that naval surgeons began to operate as 'the new managerial class' over health and discipline towards the end of the eighteenth century due to changing medical theories.[58] Initially playing a 'curative or emergency role,' Lawrence argued that naval surgeons assumed greater control over preventative health within the increasingly authoritarian control of the naval

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[55] The received narrative that scurvy was defeated after one of Cook's voyages in 1747, see Francis E. Cuppage, *James Cook and the Conquest of Scurvy* (Westport, CT: Greenwood Press, 1994). For the revisions of this narrative, see Christopher Lawrence, 'Disciplining Disease: Scurvy, the Navy and Imperial Expansion, 1750–1820', in *Visions of Empire: Voyages, Botany, and Representations of Nature*, David Phillip Miller and Peter Hans Reill, eds. (Cambridge: Cambridge University Press, 1996), 80–106; Erica Charters, '"The Intention is Certain Noble": The West Squadron, Medical Trials, and the Sick and Hurt Board during the Seven Years' War (1756–63)', in *Health and Medicine at Sea*, 19-37; Erica Charters, 'Disease, Wilderness Warfare, and Imperial Relations: The Battle for Quebec, 1759–1760', *War in History* 16, n. 1 (2009): 1-24; Mark Harrison, 'Scurvy on Sea and Land: Political Economy and Natural History, c. 1780–c. 1850', *Journal for Maritime Research* 15, n. 1 (2014): 7-25.

[56] McLean, *Surgeons of the Fleet.*

[57] Brockliss, et al., *Nelson's Surgeon;* Brian Vale and Griffith Edwards, *Physician to the Fleet: The Life and Times of Thomas Trotter, 1760–1832* (Woodbridge, UK: Boydell Press, 2011).

[58] Lawrence, 'Disciplining Disease', 96.

institution. By 'disciplining' seamen's diet and hygiene, naval surgeons carved out a distinct role for themselves as the 'producers and managers of health and order'.[59] Lawrence's focus on prescriptive regulations and the published materials of a few esteemed practitioners implicitly centres the naval medical bureaucracy, occluding the naval surgeons' actual shipboard experiences and the ways in which this collective class of practitioners sought to negotiate their roles within this medical bureaucracy.[60] Instead of describing practice from prescriptive regulations or published manuals and treatises, my thesis uses the descriptive records of actual shipboard medical practice to reveal the ways that naval surgeons actively constructed their professional identities during their naval service.

More recent studies have used prosopographical analysis to explain how Army and Navy medical officers used their employment in the military to build their careers. Army medical officers were the subject of a study by Ackeroyd et al. and a complementary subsidiary project by John Cardwell examined naval surgeons.[61] Ackeroyd et al. applied sociological frameworks of professionalisation to practitioners in the Army to examine how social and economic shifts during the first wave of industrialisation and the pressures of warfare during the French Wars influenced their professional development. Using prosopography to examine the education and background of these men prior to entering service through to their lives after service, these scholars traced these medical men from humble backgrounds, largely in Scotland and Ireland, through their military careers and assessed their social status after service.[62] Their findings revealed that the military offered important patronage networks to build their careers, though this had more limited effect on naval surgeons due to the specific isolation and ardours of naval service. Cardwell's study provides a valuable backbone to the analysis of the background, education, and ambitions of the surgeons in my study. My thesis will build on Cardwell's prosopography to examine how naval

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[59] Lawrence, 'Disciplining Disease', 85.

[60] A similar bias towards published material from a few esteemed practitioners is found in Tröhler's *'To Improve the Evidence of Medicine'*.

[61] Ackroyd et al., *Advancing with the Army*; John M. Cardwell, 'Royal Navy Surgeons, 1793–1815: A Collective Biography', in *Health and Medicine at Sea*, 38-62. The biography of William Beatty, an offshoot of this project, see Brockliss et al., *Nelson's Surgeon*.

[62] For more on their education, see Matthew Kaufman, *Surgeons at War: Medical Arrangements for the Treatment of the Sick and Wounded in the British Army during the Later 18th and 19th Centuries* (Westport, CT: Greenwood Press, 2001).

surgeons performed their medical identities in practice to achieve an elevated social and professional status.

Scholars have also examined the professional identities displayed by military officers through their participation and engagement with the British medical establishment. Kelly's work on Army medical officers highlighted how the useful, applicable, and empirical practice they developed distinguished them from civilian practice.[63] Ackeroyd et al. demonstrated that some Army medical officers created identities as 'men of science' through their active publication and participation in the British medical community.[64] Margarette Lincoln demonstrated how some naval practitioners actively published books and in periodicals in order to improve both their professional status and the image of the Navy.[65] This active publication of findings, as investigated by Christopher Lawrence, has led scholars to believe that these publications are representative of the professional identities and practice of the entire class of practitioner. By examining their actual medical practice through the surgeons' journals, I compare the performance of this professional identity within the British medical community to these records of descriptive practice. I also argue that surgeons used their unique position within the Navy to participate in medical inquiry, developing an identity as 'medical philosophers'. Thus, it is important to not only examine naval surgeons within the naval medical bureaucracy, but also the naval surgeon within empire and the role of the ship in cultivating his practice.

Empire, Circulation, and Space

While histories of military medicine have tended to focus inwardly on administration and institutionalisation of these military bureaucracies, I draw on intellectual strands in the history of science and empire to examine how naval surgeons participated in medicine in the transitory and liminal space of the ship and within the context of the imperial project.

Postcolonial and poststructuralist theories from the 1960s initially stressed the global contexts of knowledge production, and the rise of new imperial history in the

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[63] Kelly, *War and the Militarization of British Army Medicine.*
[64] Ackroyd et al*., Advancing with the Army,* esp. 295-323.
[65] Margarette Lincoln, 'The Medical Profession and Representations of the Navy, 1750–1815', in *British Military and Naval Medicine,* 201-226.

1980s shifted attention away from Eurocentric models of progress and modernity.[66] Scholars have since rejected the dichotomies of metropole and colony, and recent scholarship in the history of science has reconceptualised scientific knowledge—both in its construction and spread—as 'networks', 'complexes', or in 'circulation'.[67] In doing so, they have de-centred the diffusionist narratives of science emerging from European 'centres of calculation' and instead argued for new 'centres of calculation' in places such as Malabar or Madras.[68] Many of these works have foregrounded the role of indigenous, local, and enslaved peoples in the construction of scientific knowledge.[69] These histories have diversified the spaces and actors involved in the transmission, exchange, and construction of medical knowledge.

The military was a venue of medical inquiry, but the very experiences of the military in global spaces also affected what type of medical theories were subsequently developed and then transmitted back to Britain. In the past two decades, historians of medicine have examined how commercial and imperial expansion from the late

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[66] For an excellent summary of the debates in imperial history, briefly summarised above, see Stephen Howe's introduction to *The New Imperial Histories Reader*, Stephen Howe, ed. (London: Routledge, 2010), 1-20. See also Durba Ghosh, 'Another Set of Imperial Turns?', *American Historical Review* 117, n. 3 (2012): 772-793; Gyan Prakash, ed., *After Colonialism: Imperial Histories and Postcolonial Displacements* (Princeton, NJ: Princeton University Press, 1995).

[67] James A. Secord's 'Knowledge in Transit', *Isis* 95 (2004): 654-672 has been especially important. For other examples, see Paula Findlen's edited volume: *Empires of Knowledge: Scientific Networks in the Early Modern World* (London: Routledge, 2018), especially Londa Schiebinger, 'The Atlantic World Medical Complex', 317-341. See also James Delbourgo and Nicholas Dew, eds. *Science and Empire in the Atlantic World* (New York: Routledge, 2008). On medicine in particular, see Harold J. Cook and Timothy D. Walker, 'Circulation of Medicine in the Early Modern Atlantic World', *Social History of Medicine* 26, n. 3 (2013): 337-351.

[68] The phrase 'centres of calculation' emerges from Bruno Latour's work on actor-network theory, see Bruno Latour, *Science in Action: How to Follow Engineers through Society* (Milton Keynes, UK: Open University Press, 1987), 215-257. For works that have de-centered these 'centers of calculation' in this history of eighteenth-century science, see Matthew Sargent, 'Recentering Centres of Calculation: Reconfiguring Knowledge Networks within Global Empires of Trade', in *Empires of Knowledge: Scientific Networks in the Early Modern World*, 297-317; Anna Winterbottom, 'Medicine and Botany in the Making of Madras, 1680–1720', *The East India Company and the Natural World*, Alan Lester, ed. (London: Palgrave Macmillian, 2015), 35-57; John McAleer, '"A Young Slip of Botany": Botanical Networks, the South Atlantic and Britain's Maritime Worlds, c. 1790–1810' *Journal of Global History* 11, n. 1 (2016): 24-43.

[69] Londa Schiebinger, *Secret Cures of Slaves: People, Plants, and Medicine in the Eighteenth-Century Atlantic World* (Stanford: Stanford University Press, 2017); Harold J. Cook, 'Global Economics and Local Knowledge in the East Indies: Jacobus Bontius Learns the Facts of Nature', 100-118, Londa Schiebinger, 'Prospecting for Drugs: European Naturalists in the West Indies', 119-133, and Kapil Raj, 'Surgeons, Fakirs, Merchants, and Craftspeople: Making L'Empereur's *Jardin* in Early Modern South Asia', 252-269, in *Colonial Botany: Science, Commerce, and Politics in the Early Modern World,* Londa Schiebinger and Claudia Swan, eds. (Philadelphia: University of Pennsylvania Press, 2007); and François Regourd, 'Mesmerism in Saint Domingue: Occult Knowledge and Vodou on the Eve of the Haitian Revolution', 311-332, and Júnia Ferreira Furtado, 'Tropical Empiricism: Making Medical Knowledge in Colonial Brazil', 127-151, in *Science and Empire in the Atlantic World,* James Delbourgo and Nicholas Dew, eds. (New York: Routledge, 2008).

seventeenth century onward influenced the development of 'modern' medicine.[70] Mark Harrison has been a leading voice in these discussions, arguing that a unique experimental culture developed among practitioners in the tropical colonies that stressed 'rational' and 'scientific' medicine long before the development of 'clinical' medicine in post-revolutionary Paris.[71] For example, the high mortality rates among Europeans soldiers and settlers in tropical colonies due to diseases such as Malaria and Yellow Fever led to the development of new medical theories concerning the construction of race and the emergence of tropical medicine as its own distinct field.[72] European experiences abroad shaped understandings of the body and disease in profound ways and would also come to affect medicine and public health in nineteenth-century Britain.[73]

Scholars have increasingly been interested in the 'brokers' or 'go-betweens' who were involved in the mediation, transmission, and manipulation of knowledge, expertise, and skill between different cultural spheres within empire.[74] At times, this process of knowledge transmission and exchange can be regarded as playing a

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[70] Harold S. J. Cook, *Matters of Exchange: Commerce, Medicine, and Science in the Dutch Golden Age* (New Haven, CT: Yale University Press, 2007); Pratik Chakrabarti, *Materials and Medicine: Trade, Conquest and Therapeutics in the Eighteenth Century* (Manchester: Manchester University Press, 2010); Mark Harrison, *Medicine in an Age of Commerce and Empire: Britain and its Tropical Colonies, 1660–1830* (Oxford: Oxford University Press, 2010)*;* Jim Downs*, Maladies of Empire: How Colonialism, Slavery, and War Transformed Medicine* (Cambridge, MA: Belknap Press, 2021).

[71] Harrison, *Medicine in an Age of Commerce and Empire,* 3. Likewise, Kelly stressed the importance of medical developments 'in the field' and their later importation into British practice; Kelly, *War and the Militarization of British Army Medicine.*

[72] K. F. Kiple, 'Race, War and Tropical Medicine in the Eighteenth-Century Caribbean', in *Warm Climates and Western Medicine,* D. Arnold, ed., (Amsterdam: Rodopi, 1996), 65-79; Mark Harrison, *Climates and Constitutions: Health, Race, Environment and British Imperialism in India, 1600–1850* (Oxford: Oxford University Press, 1999); Mark Harrison, 'Disease and Medicine in the Armies of British India, 1750–1830: The Treatment of Fevers and the Emergence of Tropical Therapeutics', in *British Military and Naval Medicine*, 87-119; Erica Charters, 'Making Bodies Modern: Race, Medicine, and the Colonial Soldier in the Mid-Eighteenth Century', *Patterns of Prejudice* 46, n. 3-4 (2012): 214-231; Katherine Johnston, 'The constitution of empire: place and bodily health in the eighteenth-century Atlantic', *Atlantic Studies* 10, n. 4 (2013): 443-466; Michael Joseph, 'Military Officers, Tropical Medicine, and Racial Thought in the Formation of the West India Regiments, 1793–1802', *Journal of The History of Medicine and Allied Sciences* 72, n. 2 (2017): 142-165; Suman Seth, *Difference and Disease: Medicine, Race, and the Eighteenth-Century British Empire* (Cambridge: Cambridge University Press, 2018); Tim Lockley, *Military Medicine and the Making of Race: Life and Death in the West India Regiments, 1795–1874* (Cambridge: Cambridge University Press, 2020).

[73] Alan Bewell, *Romanticism and Colonial Disease* (Baltimore: Johns Hopkins University Press, 1999); J. V. Pickstone, 'Dearth, Dirt and Fever Epidemics: Rewriting the History of British "Public Health', 1780–1850', in *Epidemics and Ideas, Essays on the Historical Perception of Pestilence*, T. Ranger and P. Slack, eds. (Cambridge: Cambridge University Press, 1992), 125-148; Kelly, *War and the Militarization of British Army Medicine*, 127-153.

[74] Simon Schaffer, Lissa Roberts, Kapil Raj and James Delbourgo, eds., *The Brokered World: Go-Betweens and Global Intelligence, 1770–1820* (Sagamore Beach, MA: Watson Publishing International, 2009).

mediating role, but often these relationships were often more dynamic and complex. These intermediaries acted with their own agency and intentionality, negotiating the boundaries of their roles in ways that were fundamental in shaping their own roles.[75] Naturalists and colonial practitioners as well as surgeons of the East India Company have received sustained attention in their intermediary roles in transmitting scientific and medical knowledge.[76] However, surgeons of the Royal Navy have often been neglected in their roles as intermediaries, with the exception of Mark Harrison's work on colonial practitioners, among whom naval surgeons do feature.[77] This thesis applies the concept of a 'broker' to the naval surgeons to describe their role transmitting their practical knowledge and expertise while also reinforcing their roles within the naval medical apparatus. In chapters two and three, I expand primarily on their negotiatory role on the ship and within the Navy, and in chapter four, I examine the significance of empire—both as a space of scientific experimentation and as a motivation for medical inquiry—in the naval surgeons' journals to capture how they operated as intermediaries.

Historians of science have also stressed the importance of examining spaces of scientific inquiry.[78] During the eighteenth and nineteenth centuries, naval ships were important scientific spaces that enabled the collection of botanical specimens in the eighteenth century, expanding into ethnographic and zoological specimens, hydrography, and meteorology during the nineteenth century, as has long been acknowledged by scholars.[79] Spatial analyses of the ship and shipboard life have identified a ship's priorities and functions, including their use as 'scientific instruments'

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[75] Introduction to Schaffer et al., eds. *The Brokered World*, esp. xiii-xxi.
[76] Schiebinger, *Secret Cures of Slaves*; Winterbottom, 'Medicine and Botany in the Making of Madras'; Cook, 'Global Economics and Local Knowledge in the East Indies'; Raj, 'Surgeons, Fakirs, Merchants, and Craftspeople'.
[77] Mark Harrison, *Medicine in an Age of Commerce and Empire.*
[78] David Livingstone, *Putting Science in its Place: Geographies of Scientific Knowledge* (Chicago: Chicago University Press, 2003).
[79] Anne Mariss, *Johann Reinhold Forster and the Making of Natural History on Cook's Second Voyage, 1772–1775* (London: Lexington Books, 2019); Daniel Simpson, *The Royal Navy in Indigenous Australia, 1795–1855: Maritime Encounters and British Museum Collections* (Cham, Switzerland: Palgrave Macmillan, 2021); Daniel Simpson, 'Medical Collecting on the Frontiers of Natural History: The Rise and Fall of Haslar Hospital Museum (1827–1855)', *Journal of the History of Collections* 30, n. 2 (2018): 253-267; Simon Naylor, 'Log Books and the Law of Storms: Maritime Meteorology and the British Admiralty in the Nineteenth Century', *Isis* 106, n. 4 (2015): 771-797; Megan Barford, 'D.176: Sextants, numbers, and the Hydrographic Office of the Admiralty', *History of Science* 55, n. 4 (2017): 431-456; Megan Barford, 'Fugitive Hydrography: The Nautical Magazine and the Hydrographic Office of the Admiralty, c.1832–1850', *The International Journal of Maritime History* 27, n. 2 (2015): 208-226; Glyn Williams, *Naturalists at Sea: Scientific Travellers from Dampier to Darwin* (New Haven, CT: Yale University Press, 2013).

and as 'floating laboratories' that drove scientific experimentation.[80] Naval hospitals and hospital ships abroad were a significant facet of the military's medical apparatus, but regular ships-of-the-line have garnered less attention as sites of medical inquiry, experimentation, and knowledge-circulation.[81] I argue it was their unique position on a ship, within global imperial spaces, that enabled surgeons to participate in medical inquiry.

Foucault described the ship as a 'heterotopia', or counter-site, that defied traditional binary notions of space and included a multiplicity of overlapping meanings.[82] Naval ships were self-contained communities of labour and living, but also globally-connected, transitory, and liminal. I argue that the ship's connectedness and simultaneous disconnectedness played a significant role in shaping the social and medical experience on board, which in turn shaped medical practice. Further, naval surgeons' access to global spaces not only shaped the diseases they encountered but also the medical knowledge into which they were able to tap. My thesis draws heavily from influences in the history of science to describe the role played by naval surgeons as 'knowledge brokers' with the imperial project and the ship as a transitory space of medicine that intersected in various global 'medical knowledge complexes'.[83] As this thesis will demonstrate, the surgeons professional journals, medical records of practice, provide insight into medical practice and inquiry on ship within these global spaces of knowledge production.

In discussing naval surgeons' various activities abroad, I occasionally discuss the surgeons' conceptualisation of geographic space and their interactions with non-

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[80] Richard Sorrenson, 'Ship as Scientific Instrument in the Eighteenth Century', *Osiris* 11, n. 2 (1996): 221-236; Antony Adler, 'The Ships as Laboratory: Making Space for Field Science at Sea', *Journal of the History of Biology* 47 (2014): 333-362; Michael Molony, 'Re-Imagining Shipboard Societies: A Spatial Approach to Analysing Ships of the British Royal Navy in the Eighteenth and Nineteenth Centuries', *International Journal of Maritime History* 30, n.2 (2018): 315-342.

[81] Sutherland, 'The Hospital Ship'; Stewart, 'Hospital Ships in the Second Dutch War'; Guenter Risse, 'Hospital Ships', *History of Medical and Allied Sciences* 43 (1988): 426-46; Erin Spinney, 'Servants to the Hospital and the State: Nurses in Plymouth and Haslar Naval Hospitals, 1775–1815', *Journal for Maritime Research* 20, n. 1 (2018): 1-17; Cori Convertito, 'Mending the Sick and Wounded: The Development of Naval Hospitals in the West Indies, 1740–1800', *Canadian Journal of History* 51, n. 3 (2016): 500-533.

[82] Michel Foucault, 'Of Other Spaces', trans. Jay Miskowiec, *Diacritics* 16, n. 1 (1986): 24, 27; see also Matthew Ylitalo and Sarah Easterby-Smith, 'Ships', in *Doing Spatial History*, Ricardo Bravaj, Konrad Lawson, and Bernhard Struck, eds. (London: Routledge, 2021), 121-138; Martin Dusinberre and Roland Wenzlhuemer, 'Editorial—Being in Transit: Ships and Global Incompatibilities', *Journal of Global History* 11 (2016): 144-162.

[83] On knowledge-brokers, see Schaffer et al., *The Brokered World*; and on medical complexes, see Schiebinger, 'The Atlantic World Medical Complex'.

European individuals. Both space and the inhabitants of those spaces were defined by surgeons within the context of empire. I have kept the names of the naval stations in which the surgeons were assigned to describe a region. For example, I use the West Indies station instead of the Caribbean, and the East Indies to describe the archipelago that now includes Malaysia, Indonesia, Java, etc. When specific places are named, I include those names, but these are often details omitted in the journals in favour of broad designations of 'stations'. Further, I use the term 'local' as a blanket term that includes the various localities in which these ships and their surgeons find themselves. There are, therefore, many locals in my project, each of which describes a group of inhabitants (European, Indigenous,[84] enslaved, etc.) in a culturally-bound geographic location. I use the term local most often in reference to 'local knowledge' by which I mean the various knowledges that can be tied to a specific place at a certain time, often in the context of intercultural exchange.

Medical Records and Paper Technologies

Previous scholarship has revealed how the Admiralty's bureaucratic records—such as pay and ship muster books, pension records, correspondence, and regulations—can be used in tandem with published works by naval surgeons and physicians to capture this professional class, as a collective and individually. These sources have supported biographical and prosopographical research into the backgrounds and careers of naval surgeons as well as the impact of new medical theories on their practice.[85] However, one source that has remained relatively under-explored and under-utilised is the medical journals produced by the naval surgeons themselves. Though scholars have occasionally drawn on the content of these journals, no systematic study of these medical records has explored naval surgeons as a profession.

The surgeons' journals logged under ADM 101 at the National Archives at Kew can be generally categorised as records of medical practice, containing elements of

[84] I use the term 'indigenous', as proposed by Kate Fullagar and Michael McDonnell, to refer to individuals 'living in the parts of three different oceanic regions—the Atlantic, the Pacific, and the Indian Oceans—who controlled the key resources desired by imperialists during this time *and* whose descendent communities still attest to the legacies of the British arrival'. Kate Fullagar and Michael A. McDonnall, eds. in the introduction to *Facing Empire: Indigenous Experiences in a Revolutionary Age* (Baltimore: Johns Hopkins University Press, 2018), 8.

[85] Brockliss et al., *Nelson's Surgeon*; Cardwell, 'Royal Navy Surgeons'; Lawrence, 'Disciplining Disease'.

patient case studies and reports of ship-board health.[86] Scholars have drawn from these surgeons' journals to explore the patients, providing a medical history 'from below', or of certain illnesses or contexts.[87] This thesis demonstrates how these records of medical practice may be used to uncover the construction and performance of a professional medical identity during this period of change. Ideally, such an examination could also be complemented by personal diaries and letters, but the middling social status of naval surgeons means they infrequently left such traces in the archives, and there were too many naval surgeons included in this study to undertake deep biographical research on them all.[88] The surgeons' journals provide unprecedented insight into shipboard medical practice, offering an opportunity to examine naval surgeons' medical practice and professional identities when very little other source material by their own hand survives.

Since the 1980s, historians of medicine have used clinical medical records to examine patterns of practice in medical institutions, clinical and therapeutic behaviours among practitioners, and the lived experiences of patients.[89] This thesis is explicitly concerned with the clinical behaviours of practitioners, though institutional patterns will also feature. This 'behaviourist' approach has been a popular method among social and cultural historians of medicine to uncover what practitioners did in practice, rather than capturing the evolution of medical theory often found in published materials.[90] For example, Fiona MacDonald's examination of a Scottish physician's medical casebooks from the decades around 1800 reveals how the physician's physical examination of his patients' bodies—a practice previously only common among

[86] The National Archives, Kew [henceforth TNA], ADM 101.
[87] Sara Caputo, 'Treating, Preventing, Feigning, Concealing: Sickness, Agency and the Medical Culture of the British Naval Seaman at the End of the Long Eighteenth Century', *Social History of Medicine* 35, n. 3 (2021): 749-769; Catherine Beck, 'Patronage and Insanity: Tolerance, Reputation and Mental Disorder in the British Navy, 1740–1820', *Historical Research* 94, n. 263 (Feb 2021): 73-95; Convertito, 'The Health of British Seamen in the West Indies, 1770–1806'.
[88] Though the personal diary of Leonard Gillespie, naval physician, is included in ADM 101.
[89] Guenter B. Risse and John Harley Warner, 'Reconstructing Clinical Activities: Patient Records in Medical History', *Journal for the Social History of Medicine* 5, n. 2 (1992): 183-205. For some examples: Risse, *Hospital Life in Enlightenment Scotland* and Fissell, *Patients, Power, and the Poor*, which use hospital records to examine institutional shifts; Warner, *The Therapeutic Perspective,* which uses records to examine practitioner behaviour; and for a patient history 'from-below', see Roy Porter, *Patients and Practitioners*: *Lay Perceptions of Medicine in Pre-Industrial Society* (Cambridge: Cambridge University Press, 1985).
[90] Erwin H. Ackerknecht, "'A Plea for a "Behaviorist" Approach in Writing the History of Medicine', *Journal of the History of Medicine and Allied Sciences* 22 (1967): 211-214. Paraphrased from Risse and Warner, 'Reconstructing Clinical Activities', 183.

surgeon—reveals the hybridisation of his medical practice.[91] Institutional shifts in practice can also be confirmed through patient records. Guenter Risse used hospital records of the Royal Infirmary at Edinburgh to evaluate the effects of preventative medical practices on seamen's disease rates in the Royal Navy.[92]

My thesis will explore the divide between theory and practice, thus allowing the surgeons' agency and autonomy to reflect the professional identities they sought to project within an increasingly institutionalised bureaucratic structure. I analyse the surgeons' journals in tandem with the prescriptive regulations and guidance that shaped their practice. Prescriptive, published material offers a unique opportunity, when paired with the journals, to explore how and why surgeons followed or deviated from standard medical care. The Admiralty's *Regulations and Instructions relating to His Majesty's Service at Sea* established requirements for captains and officers in the Navy, including surgeons. These were first published in 1731 and remained largely unchanged until updated and expanded instructions were published in 1808 as a result of the reforms in 1805.[93] I will use the 1787 version to capture the surgeon's roles and duties prior to the start of the French Wars in 1793 and the 1808 version to capture the additions and alterations after reform.[94]

I also draw upon other published material, such as medical periodicals, medical manuals, and treatises by naval surgeons and physicians. The *Regulations and Instructions* themselves offer little guidance on actual medical practice, so published texts by esteemed physicians, such as Thomas Trotter's three-volume *Medicina Nautica* (1797–1803) and Gilbert Blane's *Observations on the Diseases Incident to Seamen* (1785), can be used to compare the idealised and theoretical guidance provided by naval physicians to the naval surgeons' actual practice.[95] These published texts also shed important light on the motivations for reform by important actors in the naval medical bureaucracy.

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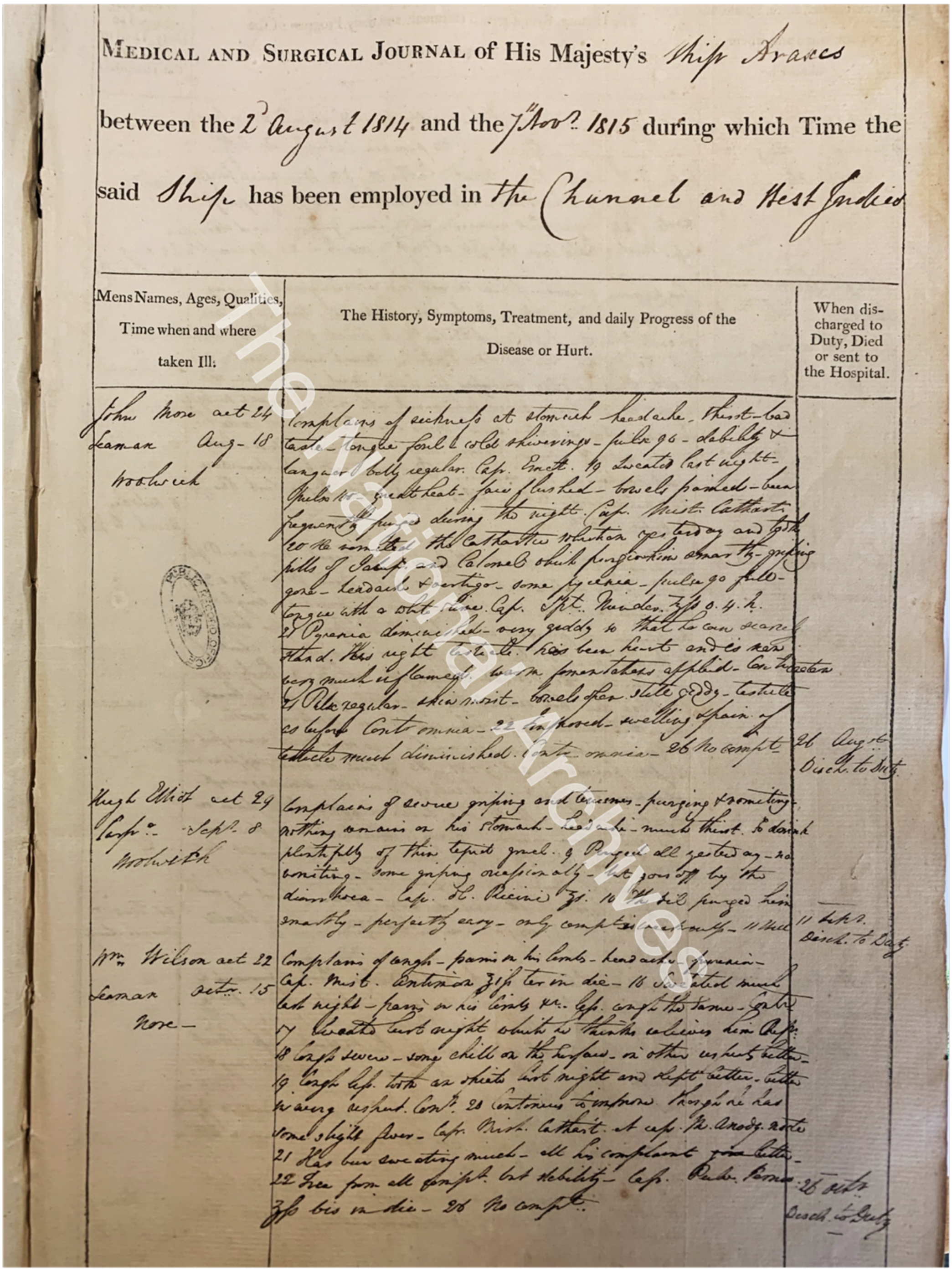
[91] Fiona A. Macdonald, 'Reading Cleghorn the Clinician: The Clinical Case Records of Dr. Robert Cleghorn, 1785–1818', in *Science and Medicine in the Scottish Enlightenment*, Charles W. J. Withers and Paul Wood, eds. (East Linton, UK: Tuckwell Press, 2002), 255-279.
[92] Guenter B. Risse, 'Britannia Rules the Seas: The Health of Seamen, Edinburgh, 1791–1800', *Journal of the History of Medicine and Allied Sciences* 43, n. 4 (1988): 426-446.
[93] Lloyd and Coulter, *Medicine and the Navy*, v. 3, 21.
[94] Admiralty, *Regulations and Instructions Relating to His Majesty's Service at Sea* (London: 1787); and Admiralty, *Regulations and Instructions relating to His Majesty's Service at Sea* (London: Winchester & Son, 1808).
[95] Thomas Trotter, *Medicina Nautica: An Essay on the Diseases of Seamen*, v. 1-3 (London: Cadell & Davies, 1797–1803); Gilbert Blane, *Observations on the Diseases Incident to Seamen* (London: Joseph Cooper, 1785).

The surgeons' journals are professional medical logs that the Admiralty required surgeons to maintain during their service. The journals typically cover one year of service at a particular station or in transit between stations. They varied in length and content, but most followed a basic pre-printed format, designated by the Admiralty, which included the patient's name, rank on ship, age, a description of illness, date placed on sick list, date removed from sick list, and whether patient was discharged to duty, invalidated from service, deceased, or sent to hospital for further recovery. Most journals expected descriptions of the patient's signs and symptoms alongside their treatment course. However, there was significant variance in the journals in terms of what information the surgeons actually provided. Some surgeons did not include descriptions of all illnesses on board and instead recorded a few emblematic case studies of a wider disease outbreak (such as an outbreak of yellow fever in the West Indies). As a consequence, these journals cannot always be used as an accurate count of every medical case in the Royal Navy, rather, they provide descriptive accounts of the medical experience on board ship.

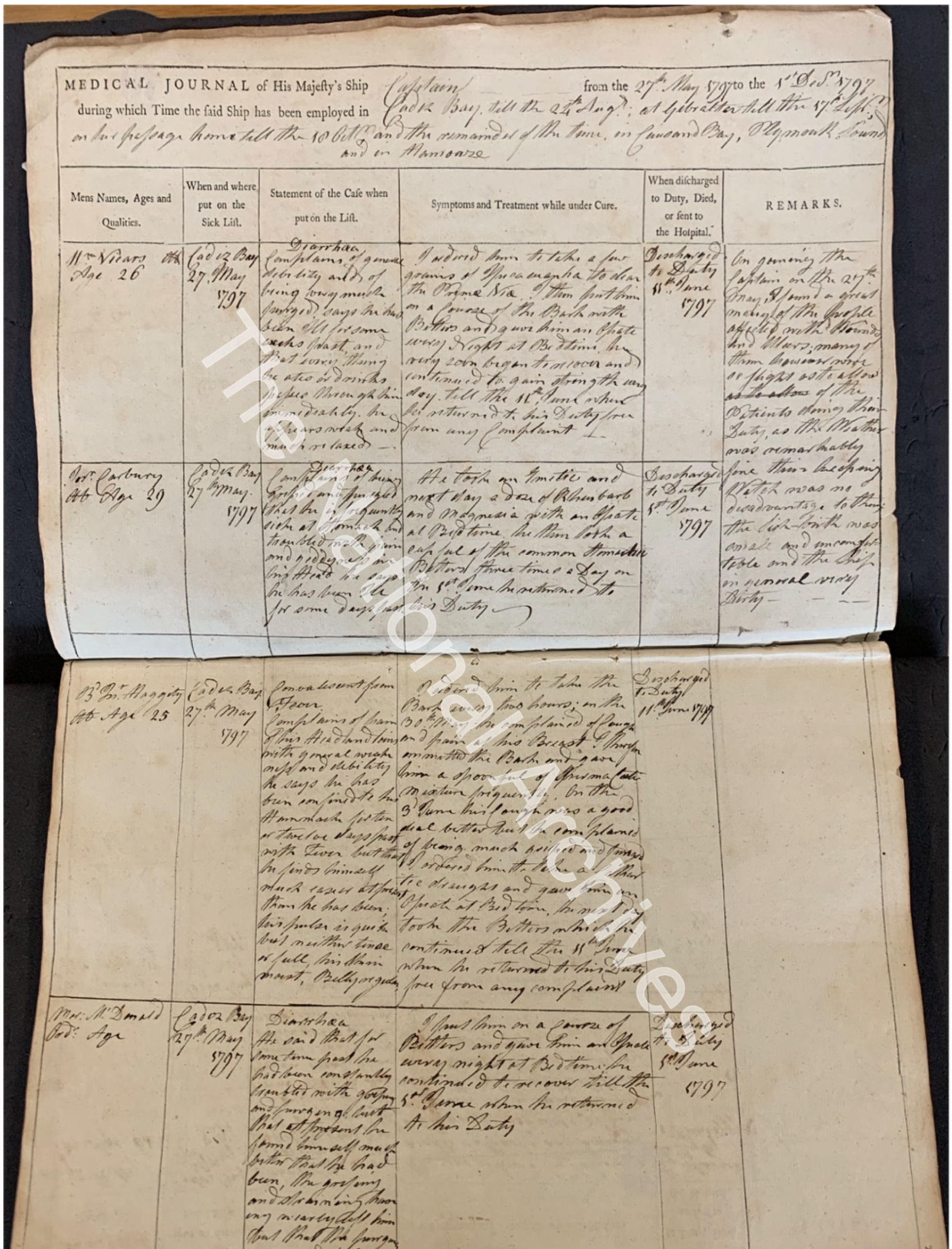
Broadly speaking, there were two journal formats—a three-column 'medical and surgical journal' with a vertical orientation (**Figure 1**) and a five-column 'medical journal' with a horizontal orientation (**Figure 2**). There does not appear to be any discernible basis for using one or the other as most surgeons appear to have used whatever format was on hand rather than split up their cases between two journals. Occasionally surgeons were unable to find journals, especially in foreign stations, so they had to draw their own (**Figure 3**). The real benefit to the five-column format appeared to be the extra column for 'remarks' on the far right, which offered a space for surgeons to make additional comments, most frequently about general medical practice rather than specific patient information. At the end of the journal, a general abstract in the form of a table solicited a simplified numerical account of all the diseases on ship. This was followed by a section for 'General Remarks' where the surgeon elaborated on the diseases experienced on board (**Figure 4**).



Medical and Surgical Journal of His Majesty's Ship Araxes between the 2 August 1814 and the 7 Nov. 1815 during which Time the said Ship has been employed in the Channel and West Indies

Mens Names, Ages, Qualities, Time when and where taken Ill:	The History, Symptoms, Treatment, and daily Progress of the Disease or Hurt.	When discharged to Duty, Died or sent to the Hospital.
John Moore aet 24 Seaman Aug. 18 Woolwich	[illegible]	26 August Disch. to Duty
Hugh Elliot aet 29 Carpr. Sept. 8 Woolwich	[illegible]	11 Sept. Disch. to Duty
Wm. Wilson aet 22 Seaman Octr. 15 Nore	[illegible]	26 Octr. Disch. to Duty

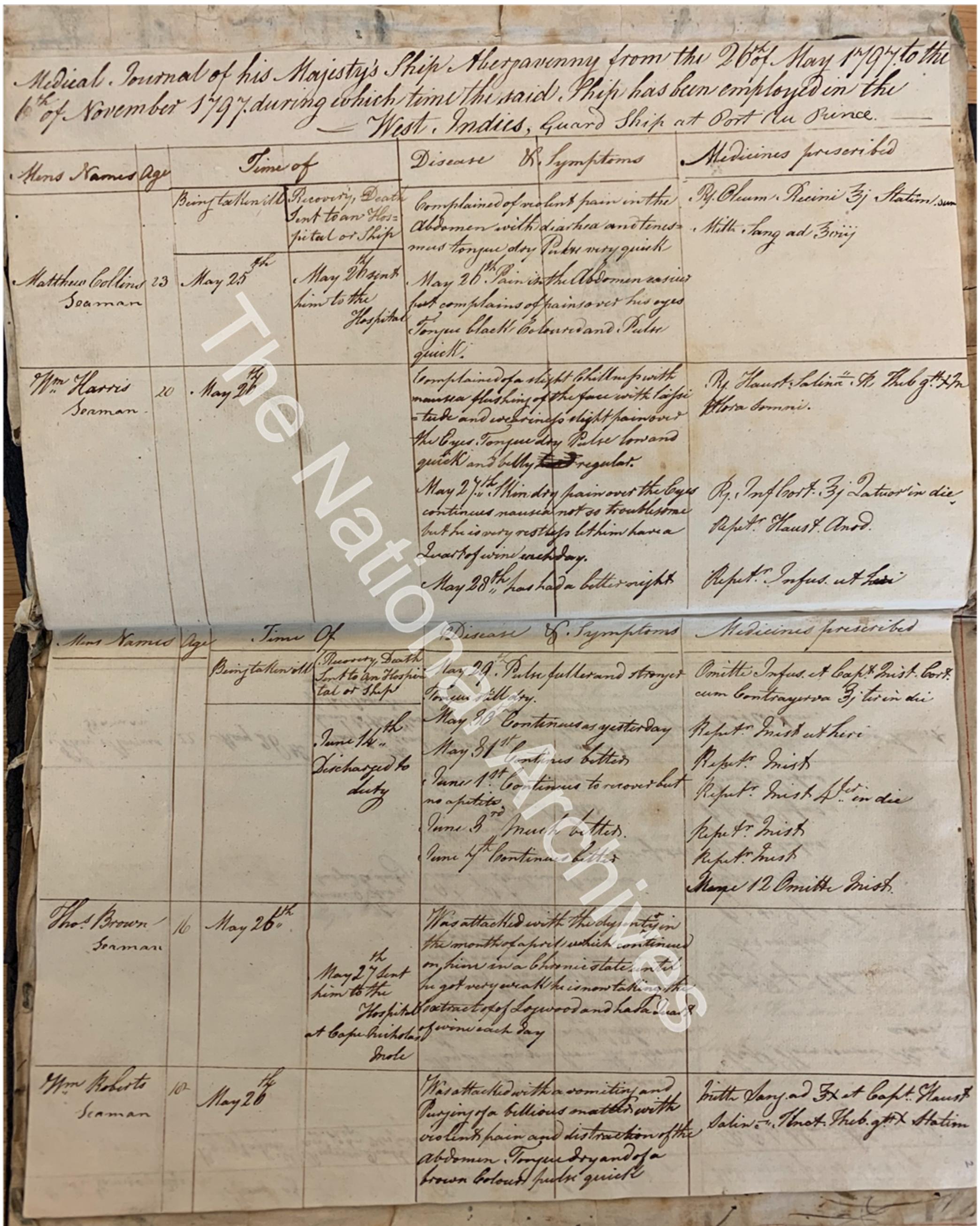
Figure 1. TNA, ADM 101/85/6, HMS *Araxes*, 1814–1815. Three-column format. Reproduced with the permission of The National Archives.



MEDICAL JOURNAL of His Majesty's Ship Captain from the 27th May 1797 to the 5th Decr 1797
during which Time the said Ship has been employed in Cadiz Bay, till the 24th Augt; at Gibraltar till the 17th Septr,

Mens Names, Ages and Qualities.	When and where put on the Sick List.	Statement of the Case when put on the List.	Symptoms and Treatment while under Cure.	When discharged to Duty, Died, or sent to the Hospital.	REMARKS.

Figure 2. TNA, ADM 101/93/2A, HMS *Captain*, 1797. Five-column format. Reproduced with the permission of The National Archives.

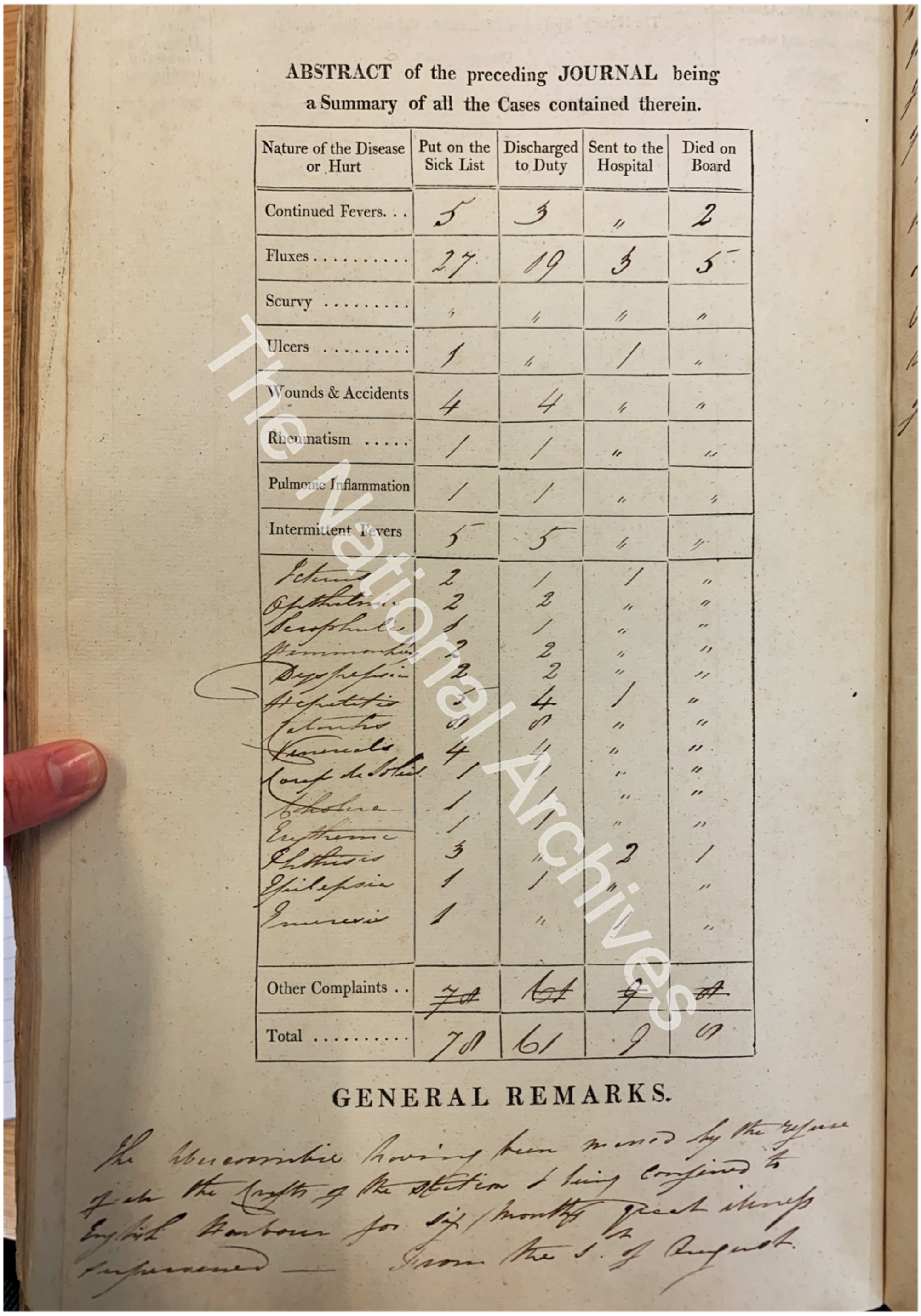


Medical Journal of his Majesty's Ship Abergavenny from the 26th of May 1797 to the 6th of November 1797 during which time the said Ship has been employed in the West Indies, Guard Ship at Port Au Prince.

Mens Names	Age	Time of Being taken ill	Time of Recovery, Death Sent to an Hospital or Ship	Disease & Symptoms	Medicines prescribed
Matthew Collins Seaman	23	May 25th	May 26th sent him to the Hospital	Complained of violent pain in the Abdomen with diarhea and tenesmus tongue dry Pulse very quick. May 26th Pain in the Abdomen easier but complains of pains over his eyes Tongue black Coloured and Pulse quick.	Rx Oleum Ricini ℥j Statim sum Mith. lang ad ℥iij
Wm Harris Seaman	20	May 26th		Complained of a slight chillness with nausea flushing of the face with lassitude and weariness slight pain over the Eyes. Tongue dry Pulse low and quick and belly regular. May 27th Skin dry pain over the Eyes continues nausea not so troublesome but he is very restless let him have a Quart of wine each day. May 28th has had a better night	Rx Haust. Salin. [illegible] Thib gtt xx hora somni. Rx Inf Cort. ℥j Quater in die Repet. Haust. Anod. Repet. Infus. ut [illegible]

Mens Names	Age	Time Of Being taken ill	Time Of Recovery, Death Sent to an Hospital or Ship	Disease & Symptoms	Medicines prescribed
			June 14th Discharged to duty	May 29th Pulse fuller and stronger Tongue still dry. May 30th Continues as yesterday May 31st Continues better June 1st Continues to recover but no apetite June 3rd much better June 4th Continues better	Omitte Infus. et Capt. Mist. Cort. cum Contrayerva ℥j ter in die Repet. Mist ut heri Repet. Mist Repet. Mist 4[illegible] in die Repet. Mist Repet. Mist [illegible] 12 Omitte Mist.
Thos Brown Seaman	16	May 26th	May 27th Sent him to the Hospital at Cape Nicholas Mole	Was attacked with the dysentery in the month of april which continued on him in a Chronic state until he got very weak he is now taking the extract of Logwood and has a Quart of wine each day	
Wm Roberts Seaman	18	May 26th		Was attacked with a vomiting and Purging of a billious matter with violent pain and distraction of the abdomen Tongue dry and of a brown Colour Pulse quick	Mith. Sang ad ℥x et Capt. Haust. Salin. [illegible] Tinct. Theb. gtt x Statim

Figure 3. TNA, ADM 101/80/2A, HMS *Abergavenny*, 1797. Self-lined journal emulating the five-column format. Reproduced with the permission of The National Archives.


ABSTRACT of the preceding JOURNAL being a Summary of all the Cases contained therein.

Nature of the Disease or Hurt	Put on the Sick List	Discharged to Duty	Sent to the Hospital	Died on Board
Continued Fevers. . .	5	3	"	2
Fluxes	27	19	3	5
Scurvy	"	"	"	"
Ulcers	1	"	1	"
Wounds & Accidents	4	4	"	"
Rheumatism	1	1	"	"
Pulmonic Inflammation	1	1	"	"
Intermittent Fevers	5	5	"	"
Icterus	2	1	1	"
Ophthalmia	2	2	"	"
Scrophula	1	1	"	"
[illegible]	2	2	"	"
Dyspepsia	2	2	"	"
Hepatitis	5	4	1	"
Catarrhus	8	8	"	"
[illegible]	4	4	"	"
Coup de Soleil	1	1	"	"
Cholera	1	1	"	"
Erythema	1	1	"	"
Phthisis	3	"	2	1
Epilepsia	1	1	"	"
Enuresis	1	"	1	"
Other Complaints . .	~~78~~	~~61~~	~~9~~	~~8~~
Total	78	61	9	8

GENERAL REMARKS.

Figure 4. TNA, ADM 101/80/1, HMS *Abercrombie*, 1809–1810. Abstract and General Remarks. Reproduced with the permission of The National Archives.

Methodologically, the surgeons' journals lend themselves to an analysis as 'paper technologies'. Over the past decade, early modern cultural historians of science and knowledge have examined the material and epistemic functions of journals, notebooks, casebooks, and other such records as a 'paper technologies', or even 'paper machines', seeking to demonstrate how such records operated as tools for information management.[96] Volker Hess and J. Andrew Mendelsohn were first to apply the concept of 'paper technologies' to medical records, seeking to explore how such records operated to collect, sort, manage, and store knowledge deemed pertinent to the practitioner. Hess and Mendelsohn argued that the shift away from narrative case studies based on a singular patient towards serialisation in the nineteenth century was a significant institutional shift in medical record-keeping that helped practitioners draw conclusions from broader trends.[97] This evolution is inseparable from the emerging institutions (hospitals, asylums, military) that guided clinical practice and can be viewed alongside the quantification of medical data and the development of medical statistics.[98] The prescribed structure of the surgeons' journals described above is indicative of the growing trend towards standardising and serialising patient records within the institutional records of the Navy. However, what became apparent during my research was the remarkable variability of these journals. There clearly remained scope in these surgeons' journals for individual practitioner choice in the collecting and formatting of medical information.

Scholars employing the concept of 'paper technologies' have paid close attention to note-keeping practices, rather than just the function of the paper materials themselves. Such analyses have allowed these scholars to examine how notebooks were used by physicians and students alike as technologies to store, synthesise, and systematise information as part of the cognitive processing of the note-keeper.[99] Throughout this thesis, I consider both the agency and restrictions of these medical

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[96] Ann M. Blair, *Too Much To Know: Managing Scholarly Information before the Modern Age* (New Haven, CT: Yale University Press, 2010); Richard Yeo, *Notebooks, English Virtuosi, and Early Modern Science* (Chicago: University of Chicago, 2014); Alberto Cevolini, ed. *Forgetting Machines: Knowledge Management Evolution in Early Modern Europe* (Amsterdam: Brill, 2016); Matthew Daniel Eddy, *Media and the Mind: Art, Science, and Notebooks as Paper Machines, 1700–1830* (Chicago: Chicago University Press, 2023).

[97] Volker Hess and J. Andrew Mendelsohn, 'Case and Series: Medical Knowledge and Paper Technology, 1600–1900', *History of Science* 47 (2010): 287-314.

[98] Charters, 'L'histoire de la quantification'.

[99] Michael Stolberg, 'Medical Note-Taking in the Sixteenth and Seventeenth Centuries', in *Forgetting Machines: Knowledge Management Evolution in Early Modern Europe,* Alberto Cevolini, ed. (Amsterdam: Brill, 2016), 243-264; Eddy, *Media and the Mind,* 269-381.

records, allowing me to explore the many ways that naval surgeons used these paper technologies in practice. The structure of the Admiralty's pre-printed logbook may have requested certain data points, but the surgeons certainly did not always follow these guidelines. My analysis of these journals not only seeks to capture typical practice, but also the atypical agencies reflected in the practice of medical recordkeeping. Examining minutiae of structure, form, and organisation outside of the pre-printed structure reveals the voices of the surgeons and how they navigated the strictures of their practice. Significant deviations provide a fruitful opportunity to examine how surgeons managed medical information to suit their practice. The variability and flexibility in the contents of the journals underscore their utility in capturing practitioner autonomy, and thus their identity-performance, within an expanding state medical bureaucracy. Thus, these journals offer an important bridge between the personal and the state; medical identity and institutional practice; handwritten journal and bureaucratic record; theory and practice.

The collection of naval surgeons' journals held in the National Archives at Kew begins in 1793 and runs until 1880.[100] Though the use of surgeons' journals began in 1703, none of these earlier journals survive. The extant journals provide an incomplete record of the ship services during the French Wars, since only a fraction of the journals that should have existed survive in the archive; the rest are unaccounted for. The collection of journals has been catalogued and partially transcribed at item level by staff, allowing the records to be searchable within certain limitations. There are challenges to using this catalogue, which are expanded upon in the Brief Note (pages 35-36) for a more detailed explanation of the catalogue to item level correlation. These challenges also make it difficult to provide exact numbers of journals, ships, and surgeons.

There are over one hundred catalogued items for the period of my study (1793–1815), and I examined the physical items associated with half these catalogue records in the archive. This selection was drawn from various geographic locations around the globe and across these twenty-three years of warfare. There was huge variation in these catalogue 'items': some contained one journal, others were boxes of multiple journals—sometimes distinguished as such in the catalogue, sometimes not. The

[100] Lloyd and Coulter, *Medicine and the Navy*, v. 3, ix.

journals also varied in length and content: some only contained a few patient records or a note, while others were extensive, with ink filled across the page—margin to margin, front and back. The detail of the patient cases demonstrated similar variability, with some providing the bare minimum data points while other patient cases went on for pages. The organisation of the journals also differed, with some largely following the Admiralty's pre-printed structures and others reorganising the collected data in charts and tables, or in narrative essays with little individual patient data. From this initial examination of the archive, I identified and categorised various recurring themes (e.g. issues with supplies and provisioning, outbreaks of contagion, moments of crisis, evidence of experimentation, etc.) and significant deviations in the structure, form, and content of the journals (e.g. tables and charts, narrative essays, marginalia, etc.). This thesis is based on a close reading of these journals, supplemented where possible with similar cases that could be identified by searching the partial transcriptions in the catalogue.

Chapter Outline

Chapter one introduces naval surgeons and places them within the context of the wider profession in Britain, with an exploration of their backgrounds, educations, and careers in the Navy. I emphasise that sustained warfare during the French Wars resulted in an employment crisis in which the naval bureaucracy struggled to fill medical positions on ship with sufficiently trained candidates. This recruitment crisis reflects a cyclical pattern that impacted the status and reputation of naval surgeons. The reforms to the naval medical offices in the decades around 1800 came in response to this recruitment issue. These reforms are central to understanding how naval surgeons were perceived by contemporaries but also how their professional status was evolving alongside broader professional transformations in the British medical establishment.

Chapter two turns to the naval surgeons' medical practice on ship with an examination of their jurisdiction over preventative measures, such as hygiene and diet. The gradual emphasis on preventative rather than responsive medical practice in the latter half of the eighteenth century shaped medical practice in theory, but surgeons held little jurisdiction over ship provisioning and hygiene in practice. I focus on the tensions that arose over jurisdiction and investigate how naval surgeons navigated

these within the ship œconomy, by which I mean the financial, administrative, and health management of the ship. I emphasise that when tension and crises arose around ship health, surgeons were most frequently placed in positions, not as managers, but rather as negotiators between various stakeholders in the ship œconomy. In some rarer cases, more enterprising surgeons actively requested administrative or system changes to preventative practice or provisioning, thus demonstrating the active construction of a health management identity.

Chapter three then explores how surgeons used their medical position to identify and manage perceived behavioural or moral concerns. Influenced by contemporary medical theories, shipboard health was not just a concern for physical hygiene, cleanliness, and diet but also moral and social order. This chapter uses medical cases associated with drunkenness to examine the expansion of the surgeon's role in identifying and managing the problematic behaviours that led to an inefficient or disordered ship. I argue that medical biases entangled in the abuse of alcohol provided a marker for surgeons to identify suspicious cases for further inquiry. This was occurring at the same time as the Admiralty pressured surgeons to identify certain forms of deception to the service, such as malingering—the falsification of illness.

Chapter four explores a selection of journals that demonstrate an active participation in medical inquiry. I demonstrate how some naval surgeons utilised the unique opportunities accessed through the ship to build an identity as 'medical philosophers' in a global and imperial context. Through three case studies of medical inquiry in different parts of the world, this chapter examines how naval surgeons positioned themselves as knowledge brokers within global and imperial medical complexes. I argue that their articulation of this identity served to position them as stakeholders in the medical research conducted by the Sick and Hurt Board and in the imperial project. I also demonstrate that some naval surgeons retained intellectual connections to the British medical community through medical periodicals. This participation in a boarder medical community reveals the aspirational performance of naval surgeons' medical identities within the British medical establishment during this period of professional transformation.

Taken together, this thesis will explore how naval surgeons as a collective negotiated their position on ship, in the naval bureaucracy, and in the British medical

community to construct and perform a new professional identity. Far from the professionally isolated and poorly educated practitioner described by John Bell, some naval surgeons found ways to position themselves within this medical institution in order to carve out new roles and identities that afforded them increased status and repute. These developments are inextricably tied to the employment and recruitment pressures of warfare, the surgeons' global experiences aboard, and the mutable nature of professional boundaries in Britain at the turn of the century. By examining their records of practice within this increasingly bureaucratic institution, I reveal how these medical practitioners subtly and intentionally negotiated their professional roles and acted as stakeholders in the reform of their profession.

A Brief Note on ADM 101

This note seeks to explain some of the quirks of this archive to help future scholars trying to use the catalogue to search for content within the journals.

It is exceedingly difficult to quantify the number of journals, ships, and surgeons in ADM 101. The National Archives has 123 unique record numbers associated with ADM 101 for the dates 1793–1815, representing different ship services. For example, HMS *Albion*'s service from 1798 to 1809 is represented as ADM 101/82/3. Many of these record numbers have been further subdivided by the archival staff in charge of cataloguing. These subdivisions contain the letters A-Z at the end of the record number and represent instances when a record number contains multiple journals. This results in a total of 233 records within ADM 101 for the dates 1793–1815. For example, *Albion* was further divided into twelve record numbers as ADM 101/82/3A-L, each letter being a separate journal within *Albion*'s service from 1798 to 1809. However, *Albion* is an atypical case in the number of years it spans and the number of further subdivisions, as most records are only subdivided into two or three further journals. For example, HMS *Abercrombie* is subdivided into ADM 101/80/1A and 1B. Unfortunately, this system was applied inconsistently and cannot be entirely relied on to calculate the total number of journals—some record numbers do contain multiple journals even though they have not been further subdivided.

It would also be inaccurate to state that each of the core record numbers represents one ship. If there were breaks in the dates of the journals, new record

numbers were sometimes created. For example, the archives have three record numbers associated with HMS *Alfred*, one for its voyages from 1796 to 1798 (ADM 101/83/3), one for its voyage in 1810–1811 (ADM 101/83/4), and one for its voyage in 1811–1812 (ADM 101/83/5). These records for *Alfred* all share the number ADM 101/83, just as *Albion* shared ADM 101/82. However, ADM 101/83/1 and ADM 101/83/2, which one might expect to contain earlier voyages of *Alfred* actually turn out to contain journals for *Albion* from 1826–1828 and 1854–1856. In another example, the record for ADM 101/81 encompasses journals for the following ships: HMS *Aetna* (ADM 101/81/1), L'*Aimable* (ADM 101/81/4), *Ajax* (ADM 101/81/5A-C), and *Audacious* (ADM 101/81/5D).

Similar issues make it difficult to calculate the number of surgeons, as the journals were sometimes begun by one surgeon and completed by another, either because the surgeon died in service or was transferred to a new ship. For example, the record associated with HMS *Theseus* (ADM 101/123/2) contains three journals (2A-2C) from three separate surgeons: James Farquhar (25 February to 26 May 1797), Thomas Eshelby (26 May to 18 August 1797), and Robert Tainsh (19 August 1797 to 19 August 1798). That said, a vast majority of the services do correlate primarily to one surgeon. In some very rare cases, there are multiple surviving ship journals for one surgeon. For example, the journals for Ben Lara's service on HMS *Princess Royal* for 1801–1802 (ADM 101/105/3 and ADM 101/105/4) and HMS *Isis* for 1805–1806 (ADM 101/115/3A and 3B) survive. These two ship services with the same surgeon also illustrate the varied method for numbering records discussed above. These sort of quirks of the catalogue numbering system make it very difficult to parse through the records by ship or by surgeon within a specified date range.

1. The Naval Surgeon: Stakeholders in Reform

In 1798, Robert Young, surgeon of HMS *Ardent*, scrawled the following in his medical journal:

> A man who is at once physician, surgeon and apothecary, upon whom in these characters the health and lives of a great number of valuable subjects of the state, are often solely depending, ought to have every means and every instrument and every accommodation to favor [sic] and aid the exercise of his industry and skill.[1]

This note, left at the end of the surgeon's journal, was stylised as a request to 'solicit the attention of the Board', by which he meant the Sick and Hurt Board. Young used this space in his journal to describe the difficulties of conducting medical practice on board ship without a sufficient supply of instruments and medicines. Naval surgeons were not traditionally furnished with instruments. They received a small financial subsidy to purchase a chest upon entry into service, but this was never enough to cover the full cost.[2] As for medicines, surgeons were responsible for funding and filling their chest with everything they may require for their service. The reforms would change this. In 1796, some of the more vital medicines for their practice were provided by the Navy. Young expressed gratitude for the 'liberal and abundant supplies now allowed by government', but he implied at the time of his writing in 1797 that there was still more to be done.[3] In 1805, a more substantive set of reforms in the naval medical bureaucracy subsidised all medicines and provided surgeons with a pay rise, though obtaining instruments remained the onus of the surgeons.

The context of Robert Young's request is the topic of this first chapter, which seeks to explore the professional position of the naval surgeon, who was 'at once physician, surgeon and apothecary', in the context of reforms within the naval medical offices in 1795–1796 and 1805. These reforms centralised medical management within the Sick and Hurt Board to an unprecedented extent and provided better medical supplies and pay to surgeons on the ships. I argue that these reforms within the Navy are intimately connected to the social position of naval surgeons both on ship and

[1] TNA, ADM 101/85/7 f. 24, HMS *Ardent*, 1797–1798.
[2] Christopher Lloyd and Jack L. S. Coulter, *Medicine and the Navy, 1714–1815*, v. 3 (Edinburgh: Livingstone, 1961), 15, 34.
[3] TNA, ADM 101/85/7 f. 23, HMS *Ardent*, 1797–1798.

outside of the Navy, and thus must be examined together to understand the various stakeholders in these reforms. The impact of prolonged warfare on recruitment also facilitated these systematic changes. In what follows, I situate the naval surgeon within the British medical establishment, the naval medical branch, and the shipboard hierarchy—the three professional communities that naval surgeons belonged to.

The significance of the military as a venue for the growth of a medical bureaucracy and the early intervention of the state in the health of its constituents is now a tale familiar to historians of military medicine. The commercial, imperial, and colonial expansion of the British Empire across the globe drove the state, through its military apparatus, to intercede in its soldiers' and sailors' health to an unprecedented extent from the late seventeenth century onwards, providing the foundations for a medical bureaucracy.[4] This paternalistic care emerged out of a fiscal-military state that sought to expand its control over manpower, maintain the health of its troops through standardised practice, and systematise medical knowledge within an administrative bureaucracy.[5]

In the Navy, this standardisation and systematisation was focused around the Sick and Hurt Board—the medical board operating as a subsidiary to the Navy Board, which was tasked with the everyday running of the civil operations for the fleet. As Pat Crimmin has noted, the Sick and Hurt Board was primarily an administrative and financial board up until the end of the eighteenth century.[6] However, Erica Charters has argued that the Board nevertheless made efforts towards medical development and improvement as early as the Seven Years' War (1757–1763).[7] This chapter will argue that reforms to the naval medical offices during the French Wars (1793–1815) consolidated medical authority within the Sick and Hurt Board, which played a

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[4] J. D. Alsop, 'Warfare and the Creation of British Imperial Medicine, 1600–1800', 23-50 and Paul E. Kopperman, 'The British Army in North America and the West Indies, 1755–83: A Medical Perspective', 49-86 in *British Military and Naval Medicine, 1600–1830,* G. L. Hudson, ed. (Amsterdam: Brill Press, 2007); Harold Cook, 'Practical Medicine and the British Armed Forces after the 'Glorious Revolution', *Medical History* 34, n. 1 (1990): 1-26.

[5] Erica Charters*, Disease, War, and the Imperial State: Welfare of the British Armed Forces during the Seven Years' War* (Chicago University Press, 2014).

[6] Pat Crimmin, 'The Sick and Hurt Board and the Health of Seamen c. 1700–1806', *Journal for Maritime Research*, 1, n. 1 (1999): 51; Pat Crimmin, 'The Sick and Hurt Board: Fit for Purpose?', *Health and Medicine at Sea, 1700–1900,* David Boyd Haycock and Sally Archer, eds. (Woodbridge, UK: Boydell Press, 2009), 90-107.

[7] Erica Charters, '"The Intention is Certain Noble": The West Squadron, Medical Trials, and the Sick and Hurt Board during the Seven Years' War (1756–63)', in *Health and Medicine at Sea, 1700–1900*, 19-37.

profound role in shaping how surgeons articulated their roles within this medical bureaucracy.

The medical practitioners within this reforming bureaucracy have received some attention since Lloyd and Coulter's foundational and encyclopaedic *Medicine and the Navy*.[8] Biographical accounts of elite reforming physicians have lauded them for their roles as movers and shakers within the naval medical offices.[9] However, the role of naval surgeons as a collective class has been neglected. John Cardwell's prosopography of naval surgeons provides excellent context for the motivations of these surgeons to join the service and their career paths. This first chapter draws heavily on his work, which brought to light their middling social background and relatively high education level compared to assumptions in earlier accounts.[10] However, prosopography does not address how the surgeons acted as stakeholders within this bureaucracy and military apparatus. Scholarship on the professionalisation of Army medical officers has yielded insights into how they advanced their social status and cultivated a unique professional identity through their military experience.[11] While these trends may be broadly representative of military medical officers, variations between the Army and Navy make it difficult to generalise across both military branches.

Professional identities are multifaceted and frequently include belonging to multiple overlapping communities. Naval surgeons were inherently part of the naval medical branch in terms of their roles and duties, but they were also medical practitioners in the British medical establishment and naval officers within the ship's social hierarchy. This chapter will draw on the previous research on naval surgeons

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[8] Lloyd and Coulter, *Medicine and the Navy,* v. 3.

[9] Brian Vale and Griffith Edwards, *Physician to the Fleet: The Life and Times of Thomas Trotter, 1760–1832*, (Woodbridge, UK: Boydell Press, 2011); I. A. Porter, 'Thomas Trotter MD, Naval Physician', *Medical History* 7 (1963): 155-164; R. D. Leach, 'Sir Gilbert Blane MD, FRS', *Annals of the Royal College of Surgeons of England* 62 (1980): 232-239. And the edited collection of their writings: Christopher Lloyd, ed. *The Health of Seamen, Selections from the Works of Dr. James Lind, Sir Gilbert Blane and Dr. Thomas Trotter*, Navy Records Society, v. 107 (London: Spottiswoode, Ballantyne and Co. Ltd., 1965).

[10] John M. Cardwell, 'Royal Navy Surgeons, 1793–1815: A Collective Biography', in *Health and Medicine at Sea, 1700–1900*, 38-62.

[11] Marcus Ackroyd, Laurence Brockliss, Michael Moss, Kate Retford, and John Stevenson, *Advancing with the Army: Medicine, the Professions, and Social Mobility in the British Isles*, *1790–1850* (Oxford: Oxford University Press, 2006); Catherine Kelly, *War and the Militarization of British Army Medicine, 1793–1830* (London: Pickering and Chatto, 2011); Matthew Kaufman, *Surgeons at War: Medical Arrangements for the Treatment of the Sick and Wounded in the British Army during the Later 18th and 19th Centuries* (Westport, CT: Greenwood Press, 2001).

described above, while also contextualising naval surgeons among their class of naval officers and within broader transformations in the medical profession. I will use Evan Wilson's excellent social history of naval officers—including commissioned and warrant officers—to place surgeons within their social ranking aboard ship.[12] Wilson's analysis of the unique culture of militarised gentility describes the social landscape that the surgeon participated in when not in the sick berth. The blurring of professional boundaries in the medical field in Britain is also fundamental to incorporate into histories of naval surgeons.[13] As Christopher Lawrence remarked, naval surgeons provide a prime example of these fluid disciplinary boundaries and this new type of hybrid practitioner, and his study of naval surgeons reflected upon the changing medical theories that contributed to this.[14] Naval surgeons did not operate in silos isolated from civilian trends, but rather alongside the professional transformations occurring within the British medical establishment. The naval surgeon was only a surgeon in terms of his education and licensing, but when it came to his duties in service, he was also a physician, naval officer, and aspiring gentleman.

This chapter primarily seeks to situate naval surgeons within the larger military bureaucracy that employed them. I will explore how the sustained recruitment issues within the Navy, the reforms of the Sick and Hurt Board, and the naval surgeon's professional role all intersected and mutually reinforced one another during the French Wars (1793–1815). The first section will describe the background, education, and qualifications required to enter into service. I argue that anxieties over the education, training, and preparedness of naval surgeons was a product of sustained recruitment struggles in the Navy. The second section then examines their careers in the Navy, including their promotion, relationship with their captain and surgeons' mates, and their prescribed duties. Many of these medical duties will be directly and indirectly

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[12] Evan Wilson, *A Social History of British Naval Officers, 1775–1815* (Woodbridge, UK: Boydell Press, 2017).

[13] See the articles in *British Medicine in an Age of Reform*, edited by Roger French and Andrew Wear (London: Routledge, 1991), especially Christopher Lawrence's 'Ornate Physicians and Learned Artisans: Edinburgh Medical Men, 1726–1776,' 153-176. See also Irvine Loudon, *Medical Care and the General Practitioner, 1750–1850* (Oxford: Clarendon Press, 1986).

[14] Christopher Lawrence acknowledged in passing that naval surgeons existed within these blurred boundaries as hybrid practitioners, see Christopher Lawrence, *Medicine and the Making of Modern Britain, 1700-1900* (London: Routledge, 1994), 25; on changing medical theories, see Christopher Lawrence, 'Disciplining Disease: Scurvy, the Navy and Imperial Expansion, 1750–1820', in *Visions of Empire: Voyages, Botany, and Representations of Nature*, David Phillip Miller and Peter Hans Reill, eds. (Cambridge: Cambridge University Press, 1996), 80–106.

addressed in chapters that follow, but I will briefly introduce the surgeons' prescribed role on ship here. In the third section, I discuss the reforms to the medical offices in 1795–1796 and 1805 that occurred as a response to the recruitment crisis. I argue that these reforms were, in large part, efforts to consolidate and centralise control over medical practice in the Sick and Hurt Board. Though a few prominent physicians are often idolised in the historiography as the reformers of the naval medical branch, I argue that rank-and-file naval surgeons, who largely constituted the medical branch, also participated in this struggle to improve their pay and status.

Joining the Service: Education, Status, and Recruitment

Writing on the eve of war in 1792, Robert Robertson (1742–1829), physician at Greenwich Hospital, lamented the poor status of the naval surgeon:

> Let us not only hope that the time is not far off, when we shall possess a more respectable footing in the service, which a joint and steady exertion of our abilities will the more readily effect; but consider, that it becomes us as men, to do everything in our power on behalf of our fellow creatures; and as Gentlemen, to convince the world, that we make our duty, and the interest of his Majesty's service, our principal study, notwithstanding the many hardships under which we labour.[15]

Despite their abilities and commitment to the service, employment as a surgeon within the Navy came with little recognition. Robertson expressed a clear hope that the status and respectability of surgeons would improve based on their merits as medical men and as 'Gentlemen' engaged in their duty to 'his Majesty's service'. The dual identity of a naval surgeon as both a medical professional and gentleman is key to how surgeons viewed their place on the ship and within the medical bureaucracy. Robertson believed their gentlemanly status came from the execution of their duty, which aligns with constructions of masculinity and martial gentility at the end of the eighteenth century.[16] However, while surgeons could certainly make claims to education and gentility, Robertson's lament also makes clear that their 'respectable footing' was aspirational rather than actual.

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[15] Robert Robertson, *Observations on Fevers, and Other Diseases, which Occur on Voyage to Africa and the West Indies* (London: John Murray, 1792), viii.
[16] Wilson, *A Social History of British Naval Officers*, 185-191.

Writing in 1797 as Physician of the Channel Fleet, Thomas Trotter (bap. 1760–1832) claimed that the Navy attracted a lower class of men due to low pay and better opportunities elsewhere.[17] And, in 1806, William Turnbull, who had served in the Navy during the French Wars, explained that historic connections with the barber-surgeons who practiced a 'menial' craft played a role in this stereotype. He also blamed the disparaging satirical work of Tobias Smollet with its caricatures of incompetent naval surgeons.[18] 'This prejudice against Naval Practice', Turnbull suggested, explained the difficulty in attracting the right candidates, forcing the Navy to rely on 'those young men who could not provide any other employment'.[19] The Navy's sustained issue with recruitment was a defining feature of the debates that led to reforms in 1795–1796 and again in 1805. However, in order to first understand these reforms, it is necessary to outline the background and education of the 'typical' naval surgeon during the French Wars, their reasons for joining the service, and the recruitment issues surrounding their entry.

Most surgeons came from middling backgrounds from Scotland, Ireland, and England, with a disproportionate number from Scotland.[20] However, not all surgeons were from the British Isles; some journals held in the archive were written by Dutch and German practitioners.[21] The employment of foreign workers in the Navy was not unheard of during the French Wars; around ten percent of the crew on ships was born outside Britain.[22] Those who joined the service were often the younger sons of men in the professions or commerce, a background that was shared among many of the naval officers of wardroom rank.[23] The emergence of the 'middling sort' in the eighteenth century as a precursor to the 'middle class' as defined in the nineteenth century has

[17] Trotter, *Medicina Nautica: An Essay on the Diseases of Seamen*, v. 1 (London: Cadell & Davies, 1797), 14-15.
[18] William Turnbull, *The Naval Surgeon; Comprising the Entire Duties of Professional Men at Sea* (London: Richard Phillips, 1806), vii-viii.
[19] Turnbull, *The Naval Surgeon*, viii. See also Trotter, *Medicina Nautica,* v. 1, 14-15.
[20] Though there were Welsh surgeons, they were underrepresented in these numbers; Cardwell, 'Royal Navy Surgeons', 40-42.
[21] A Dr. Christian Friedreich Oberreich, previously a university professor, kept the journal for HMS *Enchantress* in 1806; TNA, ADM 101/99/1/2. In 1813 to 1814, Godfrey Baldamus, a Dutch assistant surgeon kept the journal for HMS *Enchantress*; TNA, ADM 101/99/2.
[22] For more on the transnational nature of this work force, see Sara Caputo, *Foreign Jack Tars: The British Navy and Transnational Seafarers during the Revolutionary and Napoleonic Wars* (Cambridge: Cambridge University Press, 2022).
[23] Cardwell, 'Royal Navy Surgeons', 40-42; Wilson, *A Social History of British Naval Officers*, 185-222.

been subject to much debate.[24] Cultural historians have identified a culture of gentility and sensibility in Britain based on behaviour rather than birth or breeding as had been common among the landed gentry in previous centuries.[25] By the end of the eighteenth century, one could become a gentleman through merit, morals, deeds, behaviour, and education, rather than by blood or acquiring lands or title. The language used by surgeons in their journals hint towards this aspirational elevation in social status, as well as the performance of an identity based in a culture of gentility. Michael Brown has demonstrated how medical practitioners from different social statuses engaged in a broader culture of gentility and sociability, which he terms the 'medico-gentility'.[26] Within the Navy, Evan Wilson has shown how the wardroom operated as a centre of this culture of gentility among officers, including the surgeon.[27] What is most significant for our naval surgeons was that gentility was attainable. This did not mean that surgeons were universally considered gentlemen by all of society as this social status was still somewhat precarious and aspirational to many.

Comparing naval surgeons to their civilian counterparts also offers some insight into the appeal of a career in the Navy. The path to becoming a licensed surgeon in Britain was through an apprenticeship to a licenced surgeon of approximately seven years from the ages of fourteen to twenty-one.[28] Apprentices were often boys from families of good standing, possessing literacy and some education. The duties of an apprentice included learning Linnean names and doses of drugs, mixing drugs and ointments, and attending surgical operations. Apprentices could supplement their training through medical schools, participation in learned societies, or working in hospitals and infirmaries. This was especially prevalent in Scotland's urban centres

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[24] The original Marxist interpretation by E.P. Thompson which centred a class analysis has since been reassessed by cultural historians since the late 1980s who prioritised culture and social performance. E. P. Thompson, *The Making of the English Working Class* (London: Penguin, 1991), originally published 1963.

[25] Paul Langford, *A Polite and Commercial People: England: 1727–1783* (Oxford: Oxford University Press, 1989); G. J. Barker-Benfield, *The Culture of Sensibility: Sex and Society in Eighteenth-Century Britain* (Chicago: University of Chicago Press, 1992); Dror Wahrman, *Imagining the Middle Class: The Political Representation of Class in Britain, c. 1780–1840* (Cambridge: Cambridge University Press, 1995); Dror Wahrman, *The Making of the Modern Self: Identity in Eighteenth-Century England* (New Haven, CT: Yale University Press, 2008).

[26] Michael Brown, *Performing Medicine: Medical Culture and Identity in Provincial England, c. 1760–1850* (Manchester: Manchester University Press, 2011), 13-81.

[27] Wilson, *A Social History of British Naval Officers*, 185-191

[28] The following is mostly drawn from Joan Lane, 'The Role of Apprenticeship in Eighteenth-Century Medical Education in England', in *William Hunter and the Eighteenth-Century Medical World*, William Bynum and Roy Porter, eds. (Cambridge: Cambridge University Press 1985), 57-103.

where a distinct curriculum in anatomy was established in medical schools, blurring the line between physician and surgeon.[29] After the completion of the apprenticeship, an examination of competence by the Company of Surgeons would then provide the necessary credentials to set up one's own practice, take over that of a predecessor, or solicit employment in hospitals, madhouses, gaols, workhouses, or dispensatories.[30] While there was an expectation of some social mobility towards a 'genteel' existence, this was by no means guaranteed. Employment opportunities in Scotland were especially sparse due to a small population, which explains why many sought employment in the Army and Navy.[31]

While some naval surgeons entered into service after completing the formal apprenticeship described above, this was not the only avenue. Some had only a few years of apprenticeship under a surgeon, while others had taken some courses at one of the Scottish medical schools to prepare. As long as they possessed enough knowledge of surgery to pass the exams at the Company of Surgeons, candidates could begin their employment in the naval service as a surgeon's mate, a role retitled 'assistant surgeon' after the 1805 reforms. For simplicity, I will refer to them generically as 'assistants', unless referring specifically to an individual who was hired as a surgeon's mate prior to 1805.[32] This process enabled them to train on the job in a manner similar to an apprenticeship; to receive a promotion, an assistant surgeon could later take another exam to become a surgeon. Thus, in contrast to civilian service, which required a prolonged apprenticeship before licencing, those seeking to enter the medical profession could do so with a lower standard of entry in the Navy. John Cardwell's study indicates that, by the French Wars, a majority of surgeons did enter with at least a few years of study and prior experience.[33]

A few examples from the latter half of the eighteenth century illustrate the diverse educational backgrounds of some surgeons. Robert Robertson (1742–1829) began as a surgeon-apothecary apprentice for four years before joining a whaling ship

[29] Lawrence, 'Ornate Physicians and Learned Artisans'.
[30] Lane, 'The Role of Apprenticeship in Eighteenth-Century Medical Education in England', 65, 91-95.
[31] Ursula Mary Mulcahy, 'How Did Eighteenth-Century Scottish Surgeons Earn a Living?', *Social History of Medicine* 34, n. 1 (Feb 2021): 305–325. John Cardwell comes to similar conclusions about the prevalence of Scottish and Irish naval surgeons, see Cardwell, 'Royal Navy Surgeons', 54.
[32] The following is largely summarised from Lloyd and Coulter, *Medicine and the Navy*, v. 3, 10-14.
[33] Cardwell, 'Royal Navy Surgeons', 45-53, esp. 48.

as a surgeon's mate for a few months.[34] This combined experience evidently provided enough knowledge for him to sit the examinations with the Company of Surgeons to qualify for a career in the Navy in 1760. Robertson would go on to serve in the Navy for decades, eventually picking up a medical degree from Aberdeen in 1779, which provided the credentials for him to serve as physician of Greenwich Hospital from 1790 to 1819. A prolific writer, Robertson published frequently on fevers through his naval career. He was also a pioneer in the effects of old age, using his experience at Greenwich Hospital treating naval pensioners as an observational ground.[35]

Born a generation later, Thomas Trotter (bap. 1760–1832), the son of a Scottish baker, took two years of medical courses at the University of Edinburgh before enlisting in service as a surgeon's mate in 1779, serving in the Channel Fleet and in the West Indies for the remainder of the American Revolutionary War (1775–1783).[36] After the war, Trotter set up a private practice in Northumberland and returned to his studies in Edinburgh, resulting in a medical degree in 1788. When war broke out with France, he returned to service and was made Physician of the Channel Fleet from 1794 to 1801. As we will see throughout this chapter and thesis, Trotter was an avid reformer and pushed for preventative practice, the eradication of impressment, and improved pay for surgeons, all of which he discussed in his writings, such as his three-volume *Medicina Nautica* (1797–1803). Neither Trotter nor Robertson should be seen as representative of naval surgeons' careers as both climbed to the highest echelons of the naval medical offices, but their background and experience prior to service was, overall, quite typical. They were emblematic of a growing trend among naval surgeons by the late eighteenth century to complete medical degrees and become physicians.[37]

Benjamin Fonseca Outram (1774–1856), whose professional journal for HMS *La Nymphe* survives in ADM 101, was one such surgeon and his life illustrates the

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[34] G. Cook 'Robert Robertson, FRS (1742–1829): Physician to the Royal Hospital, Greenwich, 18th-Century Authority on "Fever", and Early Practitioner in Care of the Elderly', *Journal of Medical Biography* 14, n. 1 (2006): 42-45; Bruce H. Short, 'Robertson, Robert (1742–1829), Physician', Oxford Dictionary of National Biography, 26 May 2016.

[35] Robert Robertson, *Observations on Diseases Incident to Seamen, whether Employed on, or Retired from Actual Service, for Accidents, Infirmities or Old Age*, 4 vols. (London: Cadell & Davies, 1807).

[36] The following is largely summarised from Vale and Edwards, *Physician to the Fleet*. See also, Porter, 'Thomas Trotter'; J. Wallace, 'Trotter, Thomas (bap. 1760, d. 1832), Naval Physician', Oxford Dictionary of National Biography, 23 Sep 2004.

[37] Laurence Brockliss, John Cardwell, and Michael Moss, *Nelson's Surgeon, William Beatty, Naval Medicine, and the Battle of Trafalgar* (Oxford: Oxford University Press, 2005), 20 cf. 47.

professional mobility afforded by a naval career. Originally from Yorkshire, Outram was apprenticed to two surgeon-apothecaries in Kent prior to joining the Navy.[38] He joined the service in 1794 as a surgeon's mate on HMS *Isis* and was then promoted to surgeon, serving on the *Harpy*, *La Nymphe*, and *Boadicea*, after sitting another exam in London in 1796.[39] During the brief period of peace in 1802, he returned to London, working at Guy's Hospital to continue developing his surgical training. When war broke out again, he rejoined the service while intermittently working on his medical studies at the University of Edinburgh. He completed his MD at the University of Edinburgh in 1809 with a dissertation on continuous fevers.[40] After receiving his license from the Royal College of Physicians in 1810, Outram set up his own civilian practice as a physician. His career demonstrates how he used the Navy to facilitate his upward social and professional mobility from a surgeon-apothecary's apprentice to a physician with his own private practice, though one would also note that his career progression was frequently interrupted due to his naval service. Such mobility gave rise to a distinct class of professional surgeons, trained in the military, who emerged in civilian practice after the Napoleonic Wars.[41]

Entry into naval service was through an examination at the Company of Surgeons (Royal College of Surgeons after 1800). The personal memoir of Peter Cullen, a Scottish surgeon who served in the Royal Navy from 1789 to 1801, provides a thorough account of his entry on the eve of war.[42] Cullen was well educated, attending grammar school and college before serving as an apprentice to Mr. Wingate, a surgeon (and later physician), for six years. During this time, he also took supplementary tutelage in Edinburgh for a year under the famous physician William Cullen, a distant relative. Drawn by the potential of working aboard and inspired through a personal connection from his mentor, Mr. Wingate, Cullen travelled to London to be assessed by the Company of Surgeons for entry into the naval service. He was received by numerous acquaintances in London and furnished with letters of introduction. A friend, Dr. Cochrane from Edinburgh, who had been a naval surgeon but was by then

[38] D'A. Power and J. Watt, 'Outram, Sir Benjamin Fonseca (1774–1856), Surgeon and Naval Officer', Oxford Dictionary of National Biography, 23 Sep 2004.
[39] TNA, ADM 101/10/4, HMS *La Nymphe*, 1797–1798.
[40] Benjamin Fonseca Outram, *Dissertatio medica inauguralis, de febre continua* (Edinburgh, 1809).
[41] This pattern has been noted for the Army: Kelly, *War and the Militarization of British Army Medicine.*
[42] Summarised from Peter Cullen, 'Memoirs of Peter Cullen', in *Five Naval Journals, 1789–1817*, H. G. Thursfield, ed., Navy Records Society, v. 91 (1951), 44-50.

practising in London, took him to the Navy Office to schedule his examination at the Company of Surgeons. The significance of patronage and familial networks in these early career phases is especially apparent from Cullen's account.

Cullen's memoir offers a rare view of the examination process itself. On the day of his examination, Cullen appeared at the Surgeons Hall where he declared which examination he sought to take, since the Company of Surgeons examined candidates for the Navy, Army, East India Company, and private practice. Indicating that he wished to take the exam for the Navy, he was taken aside by one of the examiners and 'inquired his age, his apprenticeship, studies, and practice in his profession' alongside 'anatomy, physiology, and surgery', concluding with a discussion of 'some of the most important surgical cases, or diseases, and how he would treat them'.[43] Cullen remarked on the facility of the exam with some surprise. He passed and was approved for service as a surgeons' mate. A fee of one guinea for examination was to be paid upon collection of his certification at the Navy Office, run by the Navy Board, the next day. Cullen's account highlights the decentralised entry procedure, shared between the Company of Surgeons, which maintained jurisdiction over all examination and licensing of surgeons; the Navy Board, which formally appointed the surgeons; and the Sick and Hurt Board, which managed the medical administration once the surgeon was employed.[44] The distribution of jurisdiction, shared between the Navy Board and the Sick and Hurt Board, would come to be an important facet of reform in 1796.[45]

How characteristic of naval surgeons were Cullen and Outram during the French Wars? Cardwell's prosopography of 349 naval surgeons found that they were similarly educated to their civilian peers. This frequently took the shape of a few years in apprenticeship and one to three years of further education at Scottish medical schools or rotations at infirmaries. Most took courses without the intention of pursuing a medical degree—the most popular on offer at Edinburgh were the practice of medicine, chemistry, and anatomy and surgery.[46] This level of education became increasingly standard and expected by the end of the French Wars, and at least one-eighth of surgeons did eventually go on to pursue a medical degree.[47] Nevertheless, the

[43] Cullen, 'Memoirs of Peter Cullen', 48-50.
[44] For a discussion of this, see Lloyd and Coulter, *Medicine and the Navy*, v. 3, 10-14.
[45] Crimmin, 'The Sick and Hurt Board: Fit for Purpose?', 102-104.
[46] Cardwell, 'Royal Navy Surgeons', 48.
[47] Cardwell, 'Royal Navy Surgeons', 50-51; Brockliss et al., *Nelson's Surgeon*, 20 cf. 47.

Navy did provide opportunities for lower-calibre practitioners simply because the Navy's need for manpower outweighed a more restrictive selection process. The need for medical officers at the outbreak of war was acknowledged by Peter Cullen who noted that 'medical officers were very scarce at this time', and thus he had no trouble being appointed to a ship as surgeon's mate in 1789 and promoted to surgeon in 1793.[48] Similarly, writing in 1806, William Turnbull noted that the Admiralty struggled to appoint medical assistants at the onset of each war, frequently relying on largely untrained new recruits. He noted that 'those who have not been six months in an apothecary's shop have been appointed to situations which required much experience, and medical information'.[49] Thus, the surgeons who came into service could be placed on a spectrum: from those possessing medical degrees to those with very little prior experience, though a majority fell between these extremes.

Any insight from the surgeons' own journals (ADM 101) on educational preparedness and the quality of surgeons tended to come from comparisons with other surgeons on board. Since most journals were kept by (senior) surgeons, these reflections were angled at their assistants. For instance, in his journal from HMS *Atlas* (1800), surgeon Whyte complained about the lack of education and training of his assistants. His third mate, Mr. Cochran, possessed little medical and 'common education'. Whyte adds that Cochran 'neither understood Latin, nor could he spell properly the most common English words'. Of his first mate, a Mr. Newton, surgeon Whyte found him 'incompetent for the performance of most duties' and, 'in reality, more ignorant, and illiterate than even Cochran himself'. Even more concerning, the second mate, who was un-named by Whyte except for being labelled an 'Irish Bachelor of Arts', could neither perform venesections nor prepare basic medicines.[50] Whyte's disparagements were not only about how well educated his assistants were, but specifically what *kind* of education they received and whether he deemed it suitable for service.

This rather damning portrait of assistant surgeons was not universal, and some surgeons lauded their assistant surgeons, attributing their own success to the aid their assistants provided to them. Such was the case when surgeon William Warner of HMS

[48] Cullen, 'Memoirs of Peter Cullen', 75.
[49] Turnbull, *The Naval Surgeon*, viii.
[50] TNA, ADM 101/88/4, HMS *Atlas*, 1800.

Alfred (1796) took the opportunity in his journal to recognise 'Mr. Hendrick Frederick Schricht, my only Mate […] to whom the Service is much indebted for his indefatigable and humane attention to the Sick at all times'.[51] Clearly, there existed a variance in skills among these new recruits, and it is unfair to judge the quality of surgeons based on examples of assistant surgeons with fewer years of training. Though one may also note that Warner's assistant on the *Alfred* was not, in fact, of British origin.

A different perspective on the question of education and training comes from the somewhat anomalous notes made by the surgeon on HMS *Enchantress* in 1806. In the back of his journal, the German trained Dr. Christian Friedreich Oberreich subtly discredited the British medical education, and explained: 'as for me, I was instructed in other principles, then [sic] are taught in England'.[52] Oberreich provided a summary of his career and education in what could be described a curriculum vitae. Oberreich was well educated in subjects such as history, mathematics, physics, and natural philosophy, and he had studied multiple languages. After four years of medical training in surgery, anatomy, and chemistry, he received the diploma of 'Doctor Medicinae et Chirgurgiae' and set up a practice in a small town, before joining the faculty at Jena as a Professor of Physic. Dr. Oberreich had published numerous medical texts and discussed his scientific method of practice. With such an illustrious career, it remains unclear why he found himself in the British Royal Navy. This comparison with German medical education underscores a broader point about what education and training was actually needed to be prepared for service in the Navy by the early nineteenth century.

Writing in 1806, a year after the second set of reforms, William Turnbull laid out what he perceived to be an appropriate education for naval surgeons. This included an education in general medicine and surgery at a qualified institution; he suggested the medical school at Edinburgh.[53] Appropriate education should consist of anatomy, botany and *materia medica*, and chemistry, which he claimed were fundamental to naval medical practice.[54] In specifying these educational standards, Turnbull was hinting at the changing medical practice on ship at the turn of the century. The shift away from an emergency, responsive role on ship towards preventative medicine in the late

[51] TNA, ADM 101/83/3A, f. 11, HMS *Alfred*, 1796.
[52] TNA, ADM 101/99/1, HMS *Enchantress*, 1806.
[53] Turnbull, *The Naval Surgeon*, xxxiii-xxxviii.
[54] Turnbull, *The Naval Surgeon*, xxx-xxxiii.

eighteenth century stressed a broader medical education outside of surgical skills.[55] Preventative medicine required theoretical knowledge of the body and a familiarly with new models of disease that stressed climate, the environment, diet, hygiene, and discipline. The naval surgeon's expanding jurisdiction over prevention and discipline will be examined in chapters two and three. Turnbull also explained that 'the profession of a Navy Surgeon [was] certainly a liberal one, and require[d] the same extent of scientific knowledge as is necessary to practice [sic] in other situations'.[56] The specification of scientific knowledge and a liberal education underscores another development in the professional roles naval surgeons assumed on ship. Increasingly, surgeons cultivated an identity as 'medical philosophers', participating in scientific experimentation and medical inquiry on their ships for the purpose of advancing or refining medical care and knowledge; this role will be discussed in chapter four.

Another facet of the complaints among contemporaries was the lack of *specialised* education among recruits. In a pamphlet calling for reform to the medical department, published in 1790, Trotter proposed that the examination of candidates should be undertaken by a board of naval surgeons, rather than the Company of Surgeons, and that naval physicians should have a say on medicinal provisioning, rather than the Society of Apothecaries, as it was then arranged.[57] We saw a similar rhetoric around reforming education for military practitioners expressed by John Bell in the introduction.[58] Writing later in the wars, Turnbull echoed Trotter, agreeing that qualifying exams should be administered by the Navy with content specific to naval medicine and surgery. Subsequently, upon termination of studies and successful completion of the exam, it was proposed that students could then be appointed directly by the medical commissioners of the Sick and Hurt Board. Both Trotter and Turnbull pushed for the opening of naval medical schools at Haslar and Plymouth, with state-appointed naval physicians and surgeons providing lectures to students, though this only came to fruition in 1827.[59] Many of these suggestions came to nothing, but they do reflect a common spirit towards standardising medical training in a manner

[55] Lawrence, 'Disciplining Disease'.
[56] Turnbull, *The Naval Surgeon*, vii.
[57] Thomas Trotter, 'A Review of the Medical Department of the British Navy with a Method of Reform Proposed', *The Monthly Review* (Jun 1790), re-published in *British Medical Journal* 1 (1902): 974. See also Lloyd and Coulter, *Medicine and the Navy*, v. 3, 29.
[58] Bell, *Memorial Concerning the Present State of Military and Naval Surgery.*
[59] Turnbull, *The Naval Surgeon*, xxxiv-xxxvi; Brockliss et al., *Nelson's Surgeon*, 11.

reflecting the unique specificities of naval practice. Increasingly, naval medicine was seen as distinct from the civilian medicine and surgery practised in Britain. This contributed not only to the creation of a unique professional identity, but also a desire on the part of reformers to consolidate medical control within the Navy, and specifically the Sick and Hurt Board, a point to which we will return later in this chapter.

Brockliss et al. have warned against taking contemporary complaints about poor quality candidates entirely at face-value.[60] Instead, it is wise to consider the intended readership and motives of these texts. As published medical texts, they undoubtedly served to supplement the laconic regulations that outlined the surgeons' duties and provide medical guidance. Trotter also insinuated that his work and those of his peers, Dr. James Lind and Dr. Gilbert Blane, should 'occupy the first place in the library of every Captain of a man of war' to 'teach him the way to render healthy, comfortable, and happy, the men over whom he is appointed to command'. The 'fatherly care of a commander is the *Seaman's best Physician*', Trotter noted.[61] Thus, many of the suggestions towards health management proposed by these medical texts were in view to aid ship captains—a fact that will become important in chapter two. However, the prefatory material of many of these publications indicated specific agendas that the authors strove to accomplish, generally regarding reforms to the entire naval bureaucracy. Trotter's publications were always dedicated to whichever First Admiral was currently in position and pitched as a plea for reform, while Turnbull's text provided a retrospective view after the reforms. With this in mind, the complaints recorded in these texts must be viewed as efforts to bolster claims for reform to pay, status, and medical management.

The concern over the quality of surgeons underscores the fundamental struggle with naval recruitment: the Navy was not an attractive enough employer to raise its bar for admission. Writing in 1797, a year after the first set of reforms neglected to raise surgeons' base pay, Thomas Trotter elaborated on the consequences of the Navy's recruitment crisis. He claimed that the Navy attracted a lower class of men, which Trotter attributed to the difficulties of naval life, low pay compared to civilian

[60] Brockliss et al., *Nelson's Surgeon*, 19.
[61] Trotter, *Medicina Nautica*, v. 1, 457. Emphasis in original.

and Army practice, and the poor provisions of half-pay and pensions after service.[62] Recent comparisons of pay scales between the Army and Navy services certainly support Trotter's concern.[63] Though plenty of men found that the Navy offered a life of opportunity and adventure, Trotter explained that educated medical professionals could often find better employment in civilian medicine or even the Army.[64] Trotter claimed that surgeons in the Army were granted better opportunities for advancement and 'more lucrative appointments', which disincentivised many educated men from following a medical career in the Navy.[65] Compared to the Army, which was often garrisoned near towns and cities, naval surgeons did not have the same regular opportunities for socialisation and advancement; this inability to network could lead to a more challenging professional career after their service.[66]

Though Trotter focused most of his efforts towards gaining equality in pay with the Army, he also emphasised how little incentive there was for anyone to join the service due to potential earnings in civilian practice. Civilian surgeons in London 'are now in the receipt of five thousand pounds and upwards *per annum*!', Trotter exclaimed. Such high earnings were only reflective of a select group of esteemed practitioners in London, but the pay gap was alarming when this was compared to naval pay. As we will explore further below, naval surgeons received a base pay of closer to £60 each year. Trotter explained that the wealth these civilian practitioners could amass from their profession was due to the 'acknowledged worth and superior abilities' of these practitioners but also 'to wealth generally diffused among different classes of society, and one of the happy consequences of a free constitution and government'.[67] In other words, an open market and liberal government allowed shore-based practitioners with expert knowledge to out-earn practitioners in the Navy, whose base pay was fixed to institutional pay scales that had not moved in decades. If the Navy wanted to attract better candidates, the pay scales needed to budge.

Disconnection and isolation from the professional networks in Britain were frequent claims laid against the naval profession. John Bell, as seen in the introduction of this thesis, had portrayed naval surgeons as 'put down into a hole, there to remain

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[62] Trotter, *Medicina Nautica*, v. 1, 14-15.
[63] Ackeroyd et al., *Advancing with the Army*, tables 1.3 and 1.4, 49-52.
[64] Trotter, *Medicina Nautica*, v. 1, 36.
[65] Trotter, *Medicina Nautica*, v. 1, 15.
[66] Trotter, *Medicina Nautica*, v. 1, 14.
[67] Trotter, *Medicina Nautica*, v. 1, 14.

for years' and 'deprived of all communication' and professional engagement.[68] These contemporary views emphasised only the negative aspects of naval service, often in the context of bids for reform. However, some contemporaries also viewed the unique geographical dimension of practising in the Navy as a benefit. Robert Robertson noted: 'it is obvious that none of the profession can have equal opportunities with the Surgeons of his Majesty's navy, of knowing the diseases of all the different navigable parts of the world'.[69] Writing in 1819, C. F. Vandeburgh, a naval surgeon who had served in the French Wars, noted: 'thirteen years servitude in His Majesty's Navy, has afforded me an extensive field of practice, in almost every climate of the globe'.[70] Professional disconnection from Britain, did not necessarily mean a professional disengagement, and as we will see in chapter four of this thesis, many surgeons founds ways to harness their experiences abroad for their own professional and intellectual benefit.

A majority of naval surgeons did have a few years of prior training and education, despite their perceived reputation. These recruits by and large came from Scotland, where fewer opportunities for employment existed among a booming culture of medical education. They came from humble backgrounds and naval service offered an opportunity to increase their status and to build a social network. Reformers such as Trotter and Turnbull nevertheless sought to improve the quality of recruits, but their efforts should not be read only as a disparagement of the quality of recruits in service at the end of the eighteenth century. These reformers were also seeking to elevate the naval medical service and the profession as a whole by establishing better training and education, centralising examination and employment processes within the naval medical branch and improving pay and status to incentivise higher-quality candidates. This was not only a reaction against incompetent recruits giving the service a bad name, but rather an entire program of reform. We will return to the reforms later in part three of this chapter, but first we will examine what employment in the Navy looked like leading up to the reforms.

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[68] Bell, *Memorial Concerning the Present State of Military and Naval Surgery*, 8-9.
[69] Robert Robertson, *Observations on Fevers, and Other Diseases, which Occur on Voyage to Africa and the West Indies* (London: Joseph Cooper, 1792), vii.
[70] C. F. Vandeburgh, *The Mariner's Medical Guide* (London: Baldwin, Cradock, and Joy, 1819), 304.

A Naval Career: Pay, Promotion, and Practice

Recruitment was not entirely ineffective through the French Wars—the Navy offered opportunities for many young men to enter a medical career despite poor pay and low rank on board ship. At the beginning of the war in 1793, there were 550 listed surgeons for a force of just under 70,000 men. Near the end of the wars in 1814 there were 850 surgeons actively employed or on half-pay for a Navy comprising 130,000 men. We do not know the numbers of assistant surgeons for 1793 but in 1814, there were 500. The medical management of this system was overseen by fourteen physicians who supervised the medical administration of the fleets.[71]

Ships in the Navy were classed on a rate system.[72] First-rate ships-of-the-line were the largest vessels, three-decked gun ships carrying over one hundred guns and a crew of 850 people; there were only five in the fleet at the start of the French Wars.[73] These ships held a surgeon and up to five assistant surgeons.[74] The remaining ships from second- to fifth-rate then decreased in size, capacity, and status. The most common ship in the fleet was the third-rate gunship, which held between sixty and eighty guns, a crew of 600-700, and a medical team of one surgeon and potentially three assistant surgeons. In this class, 'the backbone of the fleet' were the 74-gun ships.[75] There were also specialised cruising ships such as frigates, sloops, or hospital ships that were tasked with the transport of victuals, supplies, or sick men. Hospital ships accompanied large fleets and frequently housed the fleet's physician, who oversaw medical practice for the station and reported directly to the Admiral.[76] Though the Physician of the Fleet held administrative power over the direction of medical resources and supplies, he was not the direct supervisor of the surgeons on board accompanying ships. Instead, ship surgeons reported directly to their captain. This decentralisation of medical command could cause a complicated fissure in the medical bureaucracy and the administration of health on board ships.

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[71] Lloyd and Coulter, *Medicine and the Navy*, v.3, 21. Number of men in the fleet from Appendix I of Christopher Lloyd, *The British Seaman, 1200–1860: A Social Survey* (London: Collins, 1968), 288-289.
[72] For more details on these ships, see Rif Winfield, *British Warships in the Age of Sail, 1793–1817: Design, Construction, Careers and Fates* (Barnsley, UK: Seaforth Publishing, 2005).
[73] Winfield, *British Warships in the Age of Sail*, 1.
[74] Michael Crumplin, *Men of Steel: Surgery in the Napoleonic Wars* (Uckfield, UK: Naval & Military Press, 2007), 146.
[75] Crumplin, *Men of Steel*, 146; quote from Winfield, *British Warships in the Age of Sail*, 41.
[76] Brockliss et al., *Nelson's Surgeon*, 8-9.

Prior to the pay reforms, which we will discuss in the next section, naval surgeons received a flat monthly salary of £5 (£60 annually). Furthermore, surgeons received a supplementary 2*d* per head of the whole ship's company.[77] This could amount to a few extra pounds per annum on a first-rate ship, which is what drove many surgeons to seek promotion to higher rated ships with more men. Among their colleagues on the ship, surgeons earned less than lieutenants in the wardroom (£7 a month) and marginally more than boatswains and carpenters (£4 a month). Assistant surgeons, ranked first, second, third, etc., were paid £2 to £3 a month depending on rank (£24-£36 annually).[78] To compare to other professions, in 1797 farm labourers earned an average of £30 p. a.; engineering and printing tradesmen and artisans, around £60; solicitors/barristers, £165 p. a.; and civilian surgeons and doctors, £175 p.a.[79] Surgeons were thus paid about the same rate as a skilled tradesman on land, and assistants earned a similar amount to farm labourers, though those on board ships benefited from food and lodging during service.[80] As noted earlier, a significant up-front expense was their medical chest and instruments. Though they received £62 towards the cost, this was not enough to cover a full chest.[81] Trotter was especially horrified by this as it meant that surgeons were funding their practice within a 'public institution' with their private pay.[82]

There were a variety of other possible supplemental sources of income available while working in the Navy, such as bonus prizes or private practice if the surgeon was shore-based.[83] Trotter was especially critical of shore-based naval practitioners who neglected their duties in the 'public institution' of the Navy in order to make money in private practice, but even he recognised the financial incentive.[84] Private practice was unlikely to make an appearance in the naval medical logbooks; however, a hint of such practices may be found in the journal for HMS *Gladiator* which

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[77] N. A. M. Rodger, *Command of the Ocean: A Naval History of Britain, 1649–1815* (London: Penguin, 2004), 623.
[78] Brockliss et al., *Nelson's Surgeon*, 15.
[79] Joel Mokyr, *The Economics of the Industrial Revolution* (London: George Allen & Unwen, 1985), table 9.2, 180.
[80] A surgeon's 28-day pay of £5 in 1800 was worth 33 days of labour as a skilled tradesman, whereas assistants' wages reflected 13-20 days of labour as a skilled tradesmen. The National Archives 'Currency Converter: 1270-2017' online calculator: www.nationalarchives.gov.uk/currency-converter.
[81] Lloyd and Coulter, *Medicine and the Navy*, v. 3, 15, 34.
[82] Trotter, *Medicina Nautica*, v. 3, 42.
[83] Brockliss et al., *Nelson's Surgeon*, 24.
[84] Trotter, *Medicina Nautica*, v. 3, 18.

discusses the surgeon's involvement in the treatment of venereal complaints for a young woman and her 'keeper' while the ship was in port. The surgeon's intervention came about while treating an officer from the *Gladiator*, who himself was suffering from such complaints after engaging in 'connexion' with the young woman. Intrigued by the scientific questions this transmission incited, Cowan initiated a sort of experiment to track transmission of the venereal disease among these three individuals. Though it is not explicitly stated, it is possible that Cowan received payment for treating the non-naval participants or at least reimbursement for the quantities of mercury provided.[85] These financial bonuses, whether through the Navy or through private practice, could potentially add up to be quite important sums for surgeons.[86]

In the eighteenth century, surgeons were warrant officers rather than commissioned officers, which meant they held a warrant to serve on board a specific ship for a predetermined amount of time.[87] If the journals are any indication, a typical service lasted twelve months after which surgeons could renew. Promotion was a slightly convoluted process. A surgeon's length of tenure in service was shaped as much by their own personal career plans as it was the Navy's need for them. Demobilisation during peacetime could render many surgeons without employment overnight. John Cardwell's study revealed that over 90 percent of surgeons served for five years or more, 43 percent for over ten years, and a further 24 percent for over fifteen years.[88] These numbers suggest that approximately a quarter of men made a career of the Navy, while others approached service as temporary training for entry into the civilian medical profession. Contrasting numbers provided by Evan Wilson suggest that the mean service for surgeons was six years, and that this short tenure was likely because the Navy could not compete with the labour market in civilian medicine or the merchant East India Company.[89]

According to Brockliss et al., another common end to service was an early retirement on half-pay, which was effectively a pension received by the Navy after a few years' service. Practising medicine at sea was a rough profession and some men retreated to a quiet life on a half-pay sum of about £100 a year, an entirely liveable sum

[85] TNA, ADM 101/103/2, f. 7-9, HMS *Gladiator*, 1808–1809.
[86] Brockliss, et al. *Nelson's Surgeon*, 24.
[87] Lloyd and Coulter, *Medicine and the Navy*, v. 3, 10.
[88] Cardwell, 'Royal Navy Surgeons', 56.
[89] Wilson, *A Social History of British Naval Officers*, 76-78, 141.

for an unmarried man.[90] However, a half-pay retirement was only available for a minority of senior surgeons prior to the 1805 reforms.[91] During the first decade of the French Wars, a surgeon's employment in the Navy was more precarious. In fact, it was the sudden demobilisation in 1802 after the Peace of Amiens, leaving hundreds of surgeons suddenly unemployed and without pay, that spurred on reforms to half-pay provisions in 1805; we will return to these below.

Once admitted into service after examination at the Company of Surgeons, a surgeon began his career as an assistant surgeon on a small vessel, gradually making his way up, getting 'promoted' to higher-ranking vessels due to on a unique combination of patronage and skill.[92] However, the transition from assistant to surgeon possibly entailed retaking an exam at the Company of Surgeons. Peter Cullen, initially a first-rank assistant surgeon on a small frigate, 'could only hold that of 2nd Assistant in a line-of-battle ship'; this was short-lived as he was able to take the exam to become a surgeon and was subsequently placed as first-rank assistant on a gunship.[93] While Cullen seemed quite pleased by the promotion in his memoir, it is worth noting that passing the exam for surgeon did not immediately place you as surgeon on your next posting, nor is it clear if passing the exam was always a requirement for promotion.

Like much of the eighteenth-century world, the employment system was aided by a system of patronage.[94] Networking and building relationships with the captains one served was just as important as one's skill as a medical practitioner. Letters of reference featured as part of this promotion system. The Admiralty's *Regulations and Instructions* for 1787 specifically provided regulations for captains to write character references for surgeons at the end of their warrant. These 'Certificates' were intended for the 'the Surgeons, and Surgeons' Mates, who serve under them, setting forth therein their Characters and Experience in their Profession, so far as they [i.e. the captain] can possibly judge thereof'.[95] As the following chapters will explore in more detail, the relationship between the surgeon and his captain was a dominating feature of the journals. A positive relationship, often defined by surgeons as one in which the

[90] Brockliss et al. *Nelson's Surgeon*, 31. The National Archives 'Currency Converter: 1270-2017' online calculator: www.nationalarchives.gov.uk/currency-converter.
[91] Lloyd and Coulter, *Medicine and the Navy*, v. 3, 31.
[92] Brockliss et al., *Nelson's Surgeon*, 26-30.
[93] Cullen, 'Memoirs of Peter Cullen', 68.
[94] For the Navy specifically, see Catherine Beck, 'Patronage and the Royal Navy, 1775–1815' (unpublished PhD thesis, University College London, 2017).
[95] Admiralty, *Regulations and Instructions Relating to His Majesty's Service at Sea* (London: 1787), 216-217.

captains listened to their medical advice, was viewed as hugely impactful on the ability of the surgeon to keep the crew in good health. However, a tense or fraught relationship could be disastrous for the surgeons who were trying to manage the crew's health aboard ship. The captain's unilateral authority over his ship also made this a personal issue when interpersonal relationships were strained, as it could have real implications for the surgeon's professional career in the Navy. In a society structured around patronage, a negative recommendation could render a surgeon unemployable in the service.

Such a case was recorded in Thomas Simpson's medical journal for HMS *Arethusa*, in which the surgeon was required to seek the Admiral's intervention in an intolerably toxic work relationship. At the end of his journal, in an entry dated 13 June 1806 at Port Royal Jamaica, Simpson described 'the deep sense of injurious wrongs done to him' by his captain.[96] Simpson explained that he had had been dining in the captain's cabin on 30 April 1806, when he was arrested and 'remained a close prisoner' before his court martial for a 'a charge of as odious, inconsistent and uncandid a nature as ever was exhibited against any man in any court', though he does not elaborate on the nature of the accusation. The location of his confinement was not specified, but he wrote that this month in confinement gravely affected his health. The court martial, which took place on the 29 May on the quarterdeck of the ship resulted in Simpson's acquittal, rendering the captain so enraged that he 'grew black in the face' and 'did not or could not speak to any one member of the Court'. Simpson's return to liberty was only partial, and 'the most barbarous and illiberal treatment from [his] quondam friend, Captain Brisbane' further impacted his recovery.[97] Incensed by the acquittal, Brisbane refused to allow his surgeon to take fresh air, which led to a further degradation of Simpson's health. Simpson managed to get a letter to the Admiral, reluctantly forwarded by Captain Brisbane, in which Simpson related his poor health and the inhumane treatment from his captain. A Dr. Blair, likely the physician of the squadron at Jamaica by the same name, was sent to inspect Simpson.[98] The sympathetic doctor took pity on Simpson and promised to 'advise the Admiral to give [Simpson] leave

[96] TNA, ADM 101/86/1, f. 24, HMS *Arethusa*, 1805–1806.
[97] J. K. Laughton and Andrew Lambert, 'Brisbane, Sir Charles (1769?–1860)', Oxford Dictionary of National Biography, 23 Sep 2004.
[98] Cori Convertito, 'The Health of British Seamen in the West Indies, 1770–1806' (unpublished PhD thesis, University of Exeter, 2011), 155.

directly' through back channels. The doctor also advised Simpson to request a full transfer to a new ship given the irreconcilable breakdown of the relationship between himself and his captain.

In response to Simpson's letter and upon the recommendation of Dr. Blair, the Admiral granted the surgeon temporary leave.[99] Troubled by the entire situation, the Admiral also ordered the court martial minutes be sent to him. Upon reading these case records, he decided that surgeon Simpson should be transferred to a new ship entirely given the nature of the accusation and the irreparable damage to the working relationship. On the 13 June, the date of the note in his journal, Simpson retuned from his leave and was given a warrant to serve on *Heracule*. He was escorted by the newly appointed surgeon of *Arethusa* to collect his belongings and hand over his service, which afforded him the opportunity to record this sordid tale in *Arethusa*'s medical journal. He explained in the note to the Board that Captain Brisbane refused to interact with him or sign his certificates and discharge papers. This case reveals the precarious position that surgeons, alongside other officers and the crew, could be placed under when the captain's power was so frequently the defining feature of a ship's working culture. While the Admiral's intercession benefited Simpson's short-term health, Simpson clearly feared that the lack of signed certificates would impact his career. He used the ship's medical journal to communicate with the Board and set the record straight.

The surgeons' relationships with other medical officers on board likewise impacted their working lives. In his memoir, Peter Cullen described his supervising surgeon and fellow assistants as his greatest friends and mentors; he wrote of the deep sadness he felt when his supervising surgeon left the ship.[100] However, not all working relations were so constructive. Returning to surgeon Whyte of HMS *Atlas* (1800) provides further insight in terms of how team dynamics within the medical crew could play a significant role in workplace dynamics. In some of the later pages of his journal, Whyte explains that the poor picture of health presented in the journal was because he 'had no assistant of suitable qualifications' after his previous first mate received promotion to a new ship. [101] It is in this context that Whyte had disparaged the

[99] TNA, ADM 101/86/1, f. 24, HMS *Arethusa*, 1805–1806.
[100] Cullen, 'Memoirs of Peter Cullen', 65.
[101] TNA, ADM 101/88/4, HMS *Atlas*, 1800.

education and training of his first, second, and third mates, as described above. It is easy to sympathise with Whyte's management plight and the onus this placed on him to fill in the gaps of medical practice and manage his assistants. However, what is most interesting about these disparagements is not the question of whether or not his assistants knew Latin, but how they worked together.

Surgeon Whyte's scathing critique of his assistants hinged not only on their lack of education and training, but also their temperaments. Whyte explains that the third mate, Mr. Cochran, was a 'willing and zealous' assistant 'so long as he entertained the hope of becoming first mate'.[102] It was only after the first mate, Mr. Newton, returned from leave that Cochran became 'extremely neglectful of his duty' and 'on several occasions' demonstrated 'a disposition to be insolent and disobedient'. Whyte admitted that Newton was 'painful' to employ because he was 'incompetent for the performance of most duties'. The transformation in Cochran's temperament from 'willing and zealous' to 'insolent and disobedient' offers some insight into the interpersonal challenges faced by surgeons on larger ships with multiple medical officers. Cochran was clearly willing and able to perform his duties, but resented being placed under the incompetent Newton within this organisational hierarchy. As first mate, Newton would have earned more and had more potential for promotion, which understandably frustrated Cochran who saw him as incompetent. The uneven ranking system of these medical officers could lead to interpersonal disputes among the medical officers when ranking did not align with merit, antagonising these working relationships.

The unique working culture in the Navy relied on strong interpersonal connections with captains, supervising medical officers, and fellow surgeons' mates. Surgeons held little control over these working relationships and their potential to be transferred between ships often meant that these relationships were fleeting. However, their journals offered one space for them to take control of the narrative. In his disparagement of his assistants Whyte expressed dismay that 'the fate of Britain's warriors' depended on the childish 'personal animosity' he witnessed. He added: 'I fear for the honor [sic] of my corps and the welfare of my countrymen' should these assistants ever be promoted.[103] 'As passive agents their utility is problematical', Whyte

[102] TNA, ADM 101/88/4, HMS *Atlas*, 1800.
[103] TNA, ADM 101/88/4, HMS *Atlas*, 1800.

warned, but 'as active managers they might do infinite mischief'. Whyte used his journal to communicate to the Board that these men should not be 'promoted to situation of importance and responsibility'. Whyte himself was taking a leave of absence due to his poor health and sought to communicate his recommendation, or lack thereof, to the Board directly through the journal. This is not dissimilar to how Simpson of the *Arethusa* had taken the time to write up his side of the case against Captain Brisbane on the day of his transfer. In these two cases, we can see how the journals were used as tools to communicate employment matters to the Board.

The role and purview of the surgeon on ship was laid out in the Admiralty's *Regulations and Instructions relating to His Majesty's Service at Sea*. The chapter devoted to surgeons in the 1787 *Regulations and Instructions* included only nine articles, with very little guidance about how they should perform their duties. These duties broadly encompassed: ensuring that medical stores were sufficiently stocked, visiting the sick twice daily, reporting daily to the captain, keeping Sick/Smart Tickets (for medical discharge and invalidation), providing frontline first aid during battle, and maintaining medical and surgical journals of the cases dealt with on board.[104] Assistants were given more menial tasks, such as emptying buckets, making gruel, washing towels, and applying plasters and bandages.[105]

The 1808 *Regulations and Instructions* had expanded to thirty-seven articles, outlining the surgeon's jurisdiction over the sick berth, where he supervised and administered to the sick.[106] Maintaining hygiene of the sick berth, caring for the sick, and control over the sick diet remained central features, but new medical findings were also integrated, including novel hygiene techniques, such as fumigation, and smallpox vaccination, which the Navy was one of the first major adopters. Updates to medical provisioning and supplies as a result of the reforms of 1796 and 1805, which will be discussed in the section below, were also included. The surgeon's administrative duties were also expanded, including more guidance on reports and record-keeping, and a more rigorous attention to the inspection of new recruits as well as the medical assessment of patients for medical discharge and invalidation. Altogether, the

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104 Admiralty, *Regulations and Instructions Relating to His Majesty's Service at Sea* (London: 1787), 131-134. See also Lloyd and Coulter, *Medicine and the Navy*, v. 3, 21-23.
105 R. Allison, 'Sea Surgeons', *Journal of the Royal Naval Medical Service* 27 (1941): 125-137.
106 Admiralty, *Regulations and Instructions relating to His Majesty's Service at Sea* (London: W Winchester and Son, 1808), 265-286.

regulations reflect the surgeons' increased purview over health management—a phenomenon echoed in contemporary medical manuals and treatises.[107]

Despite their training as surgeons, most surgeons actually played a role more akin to a physician or surgeon-apothecary. Michael Crumplin's study of surgical procedures during the French Revolutionary and Napoleonic Wars, claims that procedures were largely first aid, including splints for fractures, bandaging wounds, and ligatures or sutures to prevent heavy loss of blood. Occasionally amputations and bullet or splinter removal was required, but these carried high infection rates.[108] Instead, mitigating disease played a much larger role in the surgeon's daily medical practice than surgery. The mortality figures for the Royal Navy during the French Wars reveal that only 1.5 percent of deaths were at enemy hands, 12 percent by disasters at sea, around 20 percent by accidents, and 65 percent by disease,[109] though Crumplin has recently argued that death by battle was likely closer to 7.2 percent.[110] Fatalities cannot provide a complete picture of health aboard ship, but they do provide some insight into the kinds of illnesses and injuries that surgeons were up against on a daily basis. This is why surgeon Robert Young of the *Ardent*, who opened our chapter, labelled himself as 'a man who is at once physician, surgeon and apothecary'.[111] Measures to prevent the emergence of diseases through hygiene, good diet, and proper discipline became increasingly part of the surgeon's practice during the French Wars, though there were limitations to this, as we will explore in the following chapters.[112]

It is nevertheless in Young's journal that we find one of the rare descriptions of battle surgery in ADM 101. During the Battle of Camperdown on 11 October 1797, Young described being left on his own to triage and treat ninety men, of whom sixteen were mortally wounded. He stayed up past four in the morning: 'so great was my fatigue that I began several amputations under the dread of sinking'. Among his vivid descriptions included a 'right thigh taken off by a cannon shot close to the pelvis' and an 'arm shot to pieces', stumps and haemorrhaging femoral arteries, 'mangled flesh', and the 'piteous moans and bewailing from pain and despair' accompanying his

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[107] Lawrence, 'Disciplining Disease'.
[108] Crumplin, 'Surgery in the Royal Navy during the Republican and Napoleonic Wars (1793–1815)' and Crumplin, *Men of Steel*.
[109] Dudley Pope, *Life in Nelson's Navy*, (London: Chatham Publishing, 1997), 131; Nicholas Blake and Richard Lawrence, *The Illustrated Companion to Nelson's Navy* (London: Chatham Publishing, 1999), 94.
[110] Crumplin, 'Surgery in the Royal Navy', 64.
[111] TNA, ADM 101/85/7 f. 22-25, HMS *Ardent*, 1797–1798.
[112] Lawrence, 'Disciplining Disease'.

operations. He commended those patients who endured amputation 'without a groan' and was sometimes able to conjure a smile 'from the mangled sufferers'. However, he chastised the lesser-injured men who were often 'the most vociferous for [his] assistance'. Young's description of battle also provides rare insight into the surgeons' working space, which was the context for his request to the Board. He explained that the wounded covered every surface of the 'whole cockpit deck, cabins, wing berths' waiting for operation or death.

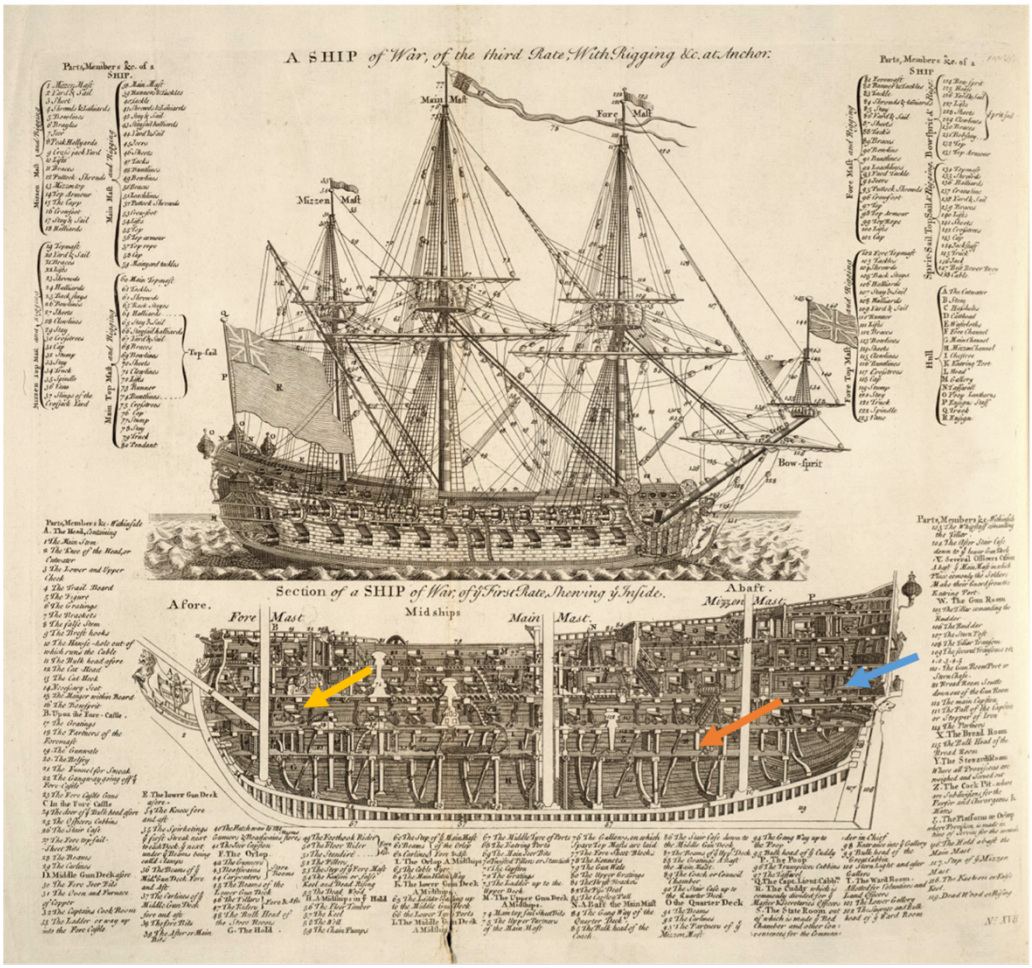

Figure 5. Print of third-rate ship of war from Ephraim Chambers, *Cyclopædia, or an Universal Dictionary of Arts and Sciences*, (1728). On this ship, the surgeon is noted to have space in the cockpit marked by the orange arrow. The forecastle, where the sick berth was increasingly located at the end of the century, is indicated with a yellow arrow, and the wardoom, a blue arrow.

The surgeons' medical practice largely occurred in the sick berth or the cockpit.[113] For much of the eighteenth century, the sick berth was a temporary and movable structure with walls fashioned out of canvas, separating the space from the rest of the ship. The sick berth could be placed anywhere on the ship at the captain's command, but in the last decade of the eighteenth century it was generally located under the forecastle (yellow arrow in **Figure 5**) between the guns where there was increased ventilation. However, this was also the most exposed part of the ship during battle. Therefore, it would be moved to the dark and ill-ventilated orlop deck (orange arrow in **Figure 5**), underneath a hatchway for easy access and some light, where it was then called a cockpit. This was where frontline surgery was conducted below the waterline, as described by Young. Other emergency platforms for surgery were also erected on platforms wherever space was available.

Despite being without any assistants on the *Ardent*, Young explained that appropriate space and storage 'would be more to a surgeon in a large ship than one of his three or four Mates'.[114] Among the crowded havoc of the cockpit, Young described the limitations of the space. The operating area he had cleared before battle was now 'covered over with bodies and blood' and the storeroom, which granted him access to his medications and supplies, was blocked by bodies. He proposed that 'every ship of war' ought to ensure 'a large storeroom was allotted to the surgeon' with 'a well contrived dispensatory fitted up on such a plan such as the Board might choose to adopt'. Young suggested 'a counter with drawers below and smaller drawers and guarded shelves for bottles, etc.'. Young concluded these remarks, 'I beg leave with earnestness to solicit the attention of the Board to this circumstance which I am sure is of very great importance'. This professional advocacy will be covered in more depth in chapter two, where we will explore how surgeons used their journals to express concerns, complaints, and suggestions to the Sick and Hurt Board.

Accommodations began to change after 1800 when a new design was adopted based on the sick berth of the *Centaur*, which had been adjusted by Admiral Markham when he was captain of the ship.[115] Trotter praised this new design, after which it was copied by many ships in the fleet and properly integrated into the design of the

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[113] The following discussion draws upon Crumplin, 'Surgery in the Royal Navy', 77-79 and Lloyd and Coulter, *Medicine and the Navy,* v. 3, 57-66.
[114] TNA, ADM 101/85/7 f. 25, HMS *Ardent*, 1797–1798.
[115] Lloyd and Coulter, *Medicine and the Navy*, v. 3, 65-66.

flagship, *Ville de Paris*.[116] Trotter's third volume of *Medicina Nautica* included a sketch of the Markham sick-berth, which he described as being located under the fore-castle with additional windows and a skylight for ventilation. One will also note from the sketch that the dispensary included drawers, which one can imagine would have delighted Robert Young (**Figure 6**).[117] By 1801 the First Lord of the Admiralty issued an order for all ships to follow the new design for sick berths, and the revised 1808 *Regulations and Instructions* directly stipulated that the captain's duty was to ensure that the sick berth was located in a well-ventilated space and kept clean.[118]

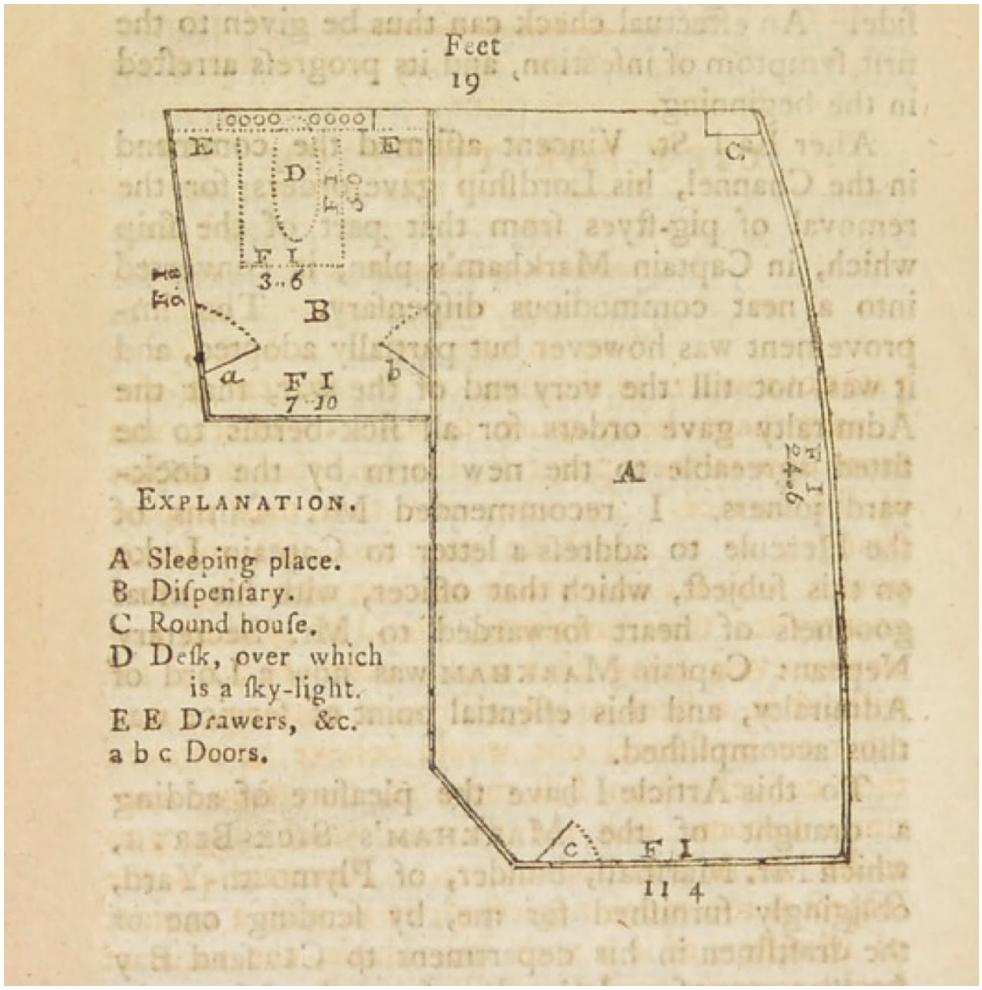

Figure 6. The Markham Sick Berth from Trotter's *Medicina Nautica*, v. 3 (1803). Source: Public Domain, Wellcome Collection.

[116] Trotter, *Medicina Nautica*, v. 3, 442-446.
[117] Trotter, *Medicina Nautica*, v. 3, 446.
[118] Lloyd and Coulter, *Medicine and the Navy*, v. 3, 65-66.

When not at work in the sick berth, surgeons were granted mess in the wardroom (blue arrow in **Figure 5**) alongside commissioned officers and other warrant officers 'of wardroom rank', such as the chaplain and purser, while assistants were allocated to the midshipmen's mess alongside the captain's clerks.[119] In his memoir, Peter Cullen described the wardroom as 'an extensive part of the ship—under the main deck, under the admiral's or captain's cabins and allotted to these officers as a mess-room and common sitting-room, with small private cabins, on each side appropriated one to each individual, as his own private apartment, or bedroom'.[120] Cullen describes a jovial yet disciplined mess of officers in which 'the most truly gentlemanly conduct' was 'inculcated and enforced' leading to 'the greatest harmony' among the officers of the ship.[121] The culture of gentility and sociability that permeated the wardroom also meant that participation in this culture was performative.[122]

The importance of sociability and status was expressed by another reformer, Gilbert Blane (1749–1834), who argued that the surgeons' perceived status on ship was just as important as the pay increases suggested by Trotter, if not more so. Blane was an Edinburgh- and Glasgow-trained physician who entered into the Navy as a personal physician to Admiral George Rodney, whom Blane followed to service in the West Indies from 1779 to the conclusion of the American Revolutionary War in 1783. After three years of service in the West Indies under Admiral Rodney, Blane was made Physician of the West Indies Fleet (1780). With decades of experience in the Navy, complimented by numerous publications, Blane was an authoritative voice, known for his work developing the use of medical statistics to guide medical strategy.[123] He was appointed as commissioner to the Sick and Hurt Board in 1795, where he worked to reform the medical offices of the Navy until the peace of Amiens in 1802.

In the third edition of his *Observations on the Diseases Incident to Seamen* (pub. 1785, ed. 1799), reprinted while he was acting as a commissioner on the Sick and Hurt Board, Blane provided a different perspective to the recruitment of naval surgeons. Though he argued that naval surgeons were 'perhaps more regarded in our service than in that

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[119] Lloyd and Coulter, *Medicine and the Navy*, v. 3, 15, 34. Assistants did not have as large of a socialising common room, nor private sleeping cabins. Cullen, 'Memoirs of Peter Cullen', 58.
[120] Cullen, 'Memoirs of Peter Cullen', 58.
[121] Cullen, 'Memoirs of Peter Cullen', 58-59.
[122] Wilson, *A Social History of British Naval Officers,* 83-104.
[123] J. Wallace, 'Blane, Sir Gilbert, First Baronet (1749–1834), Physician', Oxford Dictionary of National Biography, 23 Sep 2004. See also, R. D. Leach, 'Sir Gilbert Blane MD, FRS', *Annals of the Royal College of Surgeons of England* 62 (1980), 232-239.

of other nations […] it would be for the public benefit if they were still more respected and encouraged', recognising their diminished status compared to other medical professionals. Blane categorised naval surgeons as, generally, 'men of liberal education and sentiments' and thus he argued that the 'most effectual inducements for them to enter the service, and to do their duty there' was less about increasing 'pecuniary emoluments' and more about garnering the 'flattering attentions and a certain degree of estimation in the eyes of other officers'.[124] It is important not to downplay just how important the social experience of the ship was to these medical officers when their lives were spent co-mingling with the same colleagues at sea for months at a time. According to Blane, this was not just a recruitment issue as argued by Trotter and Turnbull, but also a retention issue due to status.

Unlike other officers of the wardroom, surgeons did not have specific uniforms to mark out their position within the ranks of the ship. In a culture that prized social status, these slights were taken seriously and later became a feature of reform in 1805, suggesting just how important surgeons' status within the shipboard hierarchy was to them.[125] The recruitment issues described above were not only about the external medical perception of naval surgeons, but also the inner social status of the surgeon within the ship hierarchy. In a world where gentility could be constructed rather than bred, we should not dismiss the importance of these status symbols to naval surgeons. Improved status granted access into new social and intellectual circles and patronage networks, which were crucial for professional advancement. As we will see, status was as much part of the conversation around reform as pay.

Reforming the Naval Medical Branch

Scholars have described the 1795–1796 and 1805 reforms to naval medicine as the result of the guiding hand of enlightened physicians and bureaucrats who were able to course-correct a stale bureaucracy.[126] The roles of Thomas Trotter, physician at the Royal Naval Hospital at Haslar and, later, Physician of the Channel Fleet, and Gilbert Blane, naval physician and commissioner of the Sick and Hurt Board, are undoubtedly

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124 Gilbert Blane, *Observations on the Diseases Incident to Seamen*, third edition (London: Murray & Highley, 1799), ix.

125 Lloyd and Coulter, *Medicine and the Navy*, v. 3, 15, 34.

126 This sort of analysis is present in Lloyd and Coulter's *Medicine and the Navy*, v. 3; Brockliss et al., *Nelson's Surgeon*; Vale and Edwards, *Physician to the Fleet*; Lloyd, ed. *The Health of Seamen*, 133.

pivotal. Thomas Trotter had been advocating for reform to provisioning and pay since 1790; when this was not accomplished in the first set of reforms in 1795–1796, he continued to advocate for naval surgeons until these reforms were effectuated in 1805.[127] But these eminent physicians were not the only voices seeking reform. As we will see, the journals reveal that many ordinary naval surgeons had equally strong opinions on the naval medical branch, its operations, and its research. In what follows, I outline the major reforms that occurred during the French Wars as context for the surgeons' journals analysed in the following chapters.

The reforms in 1795–1796 and then 1805 were the result of significant external and internal pressure on the Navy to negotiate change. The proposed reforms would cost the Navy a considerable amount of money and relied on parliamentary support for the wartime expenses levied through taxation. Physicians of the Navy often pitched reform as an opportunity for further financial savings to the Admiralty. Back in the 1760s, James Lind had suggested that reforming the medical offices would improve management, thus providing long-term financial savings.[128] Trotter echoed these thoughts decades later, when he proposed that reforming the ship's stores could lead to financial savings that could to fund naval apothecaries.[129] As will be described in chapter two, surgeons also frequently attached financial rationales to their petitions for alterations in provisioning and management. It is also notable that both sets of reforms were enacted after two years of renewed warfare, indicating that the reforms were responding to real-time concerns within the medical offices.

Trotter believed that Britain's victory over France at the Battle of Ushant on 1 June 1794 was pivotal in mustering popular support for the Navy, which often translated to financial support from the government.[130] In the aftermath of victory, 'the abilities of the surgeons were generally noticed', and 'fresh support' was found 'for renewing their claims for a further extent of the bounty of government'. [131] Trotter, newly placed as Physician of the Fleet, began to act as a sort of union representative

[127] Trotter, 'A Review of the Medical Department of the British Navy with a Method of Reform Proposed', 974. Trotter's pivotal role in the reforms is recounted by Turnbull in *The Naval Surgeon*, viii-ix.
[128] James Lind, *An Essay on the Most Effectual means of Preserving the Health of Seamen in the Royal Navy* (London: D. Wilson, 1762), xii.
[129] Trotter, *Medicina Nautica*, v. 1, 19-21.
[130] Trotter, *Medicina Nautica*, v. 1, 16.
[131] Trotter, *Medicina Nautica*, v. 1, 16-17.

for naval surgeons: 'it became [his] official duty to mention to the Admiral and Captain of the fleet, the meritorious conduct of these gentlemen'. After an audience with both the Admiral and Captain of the Fleet, Trotter 'was made to understand that the commander in chief would most cordially support any application the surgeons might make to the lords commissioners of the admiralty, as testimony of his approbation of their recent services'.[132] Trotter notified a Mr. Peter Smith, Mr. Stephenson, and Mr. Glegg, presumably naval surgeons themselves, to convene surgeons and draw up a petition for reform. 'A general meeting of the surgeons took place,' Trotter related, 'and a short but impressive petition was transmitted to the secretary of the admiralty, to be laid before their lordships'.[133] Though the commissioners were evidently 'pleased to order the necessary information to be laid before them', Trotter explained that 'very considerable changes took place at the admiralty' before 'definitive arrangements' were made, implying that the reforms that did pass were not what he or the collective of surgeons had hoped for.[134]

The result of the petition was an increase not in base pay, but in 'emoluments', or bonuses. In August 1795, surgeons were given a flat sum of £5 per hundred men to help cover medication costs for venereal disease.[135] This was alongside the continued bonuses of 2*d* per head charge, and other prize bonuses. Assistant surgeons received the biggest change with a £1 per month increase to their base pay and a £5 bonus for all assistants with a full set of instruments. Half-pay, which had previously only been available to just over a hundred more senior surgeons, was now extended to anyone with five years of experience. This gain was not insubstantial as it now made over three hundred surgeons eligible for retirement pay.

The fact that surgeons were proactively meeting to discuss these issues and petitioning for pay raises has been somewhat neglected in the literature on these reforms, which have largely attributed the success of these measures to key figures such as Trotter. There is no doubt that Trotter's voice in these debates, disseminated through these texts, was a significant boon to these requests, but the surgeons themselves were clearly active in these reforms as well. Trotter would later receive a golden snuff box from a group of surgeons, thanking him for his 'unceasing labours'

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132 Trotter, *Medicina Nautica*, v. 1, 16.
133 Trotter, *Medicina Nautica*, v. 1, 17.
134 Trotter, *Medicina Nautica*, v. 1, 17.
135 A summary of these changes can be found in Vale and Edwards, *Physician of the Fleet*, 106.

towards the 'considerable improvement' of the medical officers, demonstrating a clear investment amongst a broader class of surgeons in these debates.[136]

The 1795–1796 reforms also led to a consolidation of power within the naval medical offices. In 1795, medical practitioners were appointed to the Sick and Hurt Board, which was a significant departure from the previous composition of the board, which had consisted of lords with no medical background through most of the eighteenth century. Now, among its members it included physicians, such as Gilbert Blane who served from 1795 to 1802.[137] These reforms transferred the appointment of surgeons from the Navy Board to the physicians within the Sick and Hurt Board.[138] At the time of his writing of the first volume of *Medicina Nautica* (pub. 1797), the 'new privileges' granted to this board had not yet been drawn out, though Trotter anticipated that the Board would 'of course be invested with power to act, in all cases of emergency'. Trotter was not a commissioner himself, but an avid reformer and a Physician of the Fleet, respected by the Admiralty's highest offices. He commented on the 'progressive plan of improvement' put to action by the Board 'from our suggestions', implying these conversations were broader than just the newly elected commissioners and may have included not only himself, but a collective of naval surgeons.[139] After decades of woeful ineptitude and corruption, the Sick and Hurt Board was a new locus of reform.

The reforms that took place over 1795–1796 were also angled towards more effective management of ship health. In June 1795, the Sick and Hurt Board began to provide lemon juice on an *ad hoc* and curative basis, and commanding officers increasingly sent in requests for large supplies of lemon juice.[140] As we will see in chapter two, it is not inconceivable that surgeons were actually behind some of these requests, working back channels through their captains. With this increased demand for citrus juices, the Board submitted a proposal to the Admiralty in January 1796, outlining the costs associated with provisioning the entire fleet with a preventative supply of citrus juice, an estimate amounting to an eye-watering £112,429 annually.[141] The biggest problem, however, was that Britain could most certainly not grow and

[136] Trotter, *Medicina Nautica*, v. 2, 7-9, quote from 8.
[137] Trotter, *Medicina Nautica*, v. 1, 12, 18; Lloyd, ed., *The Health of Seamen*, 133.
[138] Trotter, *Medicina Nautica*, v. 1, 12; Crimmin, 'The Sick and Hurt Board: Fit for Purpose?', 102-104.
[139] Trotter, *Medicina Nautica*, v. 1, 6.
[140] Vale and Edwards, *Physicians to the Fleet*, 119.
[141] Vale and Edwards, *Physicians to the Fleet*, 120.

supply citrus fruits at that rate. The policy fell through while the Board increased its stock of citrus fruits from Portugal and the West Indies. It was not until 1800 that a universal preventative supply was realised under the new First Admiral, Lord St Vincent.[142] The Board also coordinated a series of trials of nitrous fumigation as a hygiene mechanism for defeating contagion in 1795.[143] These measures clearly mark a shift in the Navy's prioritisation of preventative health financed by them.

These preventative measures, and how much they aided surgeons materially in their management of ship health, will be discussed in more depth in chapter two. However, if Robert Young's plea in 1797 is any indication, surgeons were not entirely satisfied by these provisions. While he acknowledged the 'very liberal and abundant supplies now allotted by Government for the use of the sick', appropriate space and storage remained an issue as we explored above.[144] Young, and many of the surgeons we will return to in subsequent chapters, used their journals to communicate ideas for reform to the Board.

The centralisation of medical authority within the Sick and Hurt Board merely offered a focus for what Trotter 'deemed objects of reformation' in the publication of *Medicina Nautica* from 1797–1803.[145] Trotter argued that 'the supply of medicines to His Majesty's ships, can only be effectually done at government expense, and under the control of the Medical Board'. Trotter proposed an entire system of naval dispensaries in the major dockyards of Chatham, Portsmouth, and Plymouth, with branches in the overseas ports of Kinsale, Gibraltar, Madras, Calcutta, Antigua, Jamaica, and Halifax. He also suggested provisioning medical chests, pre-supplied with the most useful medicines according to service location, alongside a sum for surgeons to furnish instruments.[146] With the advent of a medical board, Trotter also expressed hope for the creation of a further scientific board to oversee surgeons and 'stimulate genius and industry' in the field of medical science.[147] This was complemented by a suggestion in the second volume of *Medicina Nautica* (1799) to create a medical library at Haslar for all practitioners to use.[148] Though Trotter was proposing more centralised

[142] Vale and Edwards, *Physicians to the Fleet*, 121.
[143] Vale and Edwards, *Physicians to the Fleet*, 121.
[144] TNA, ADM 101/85/7 f. 24, HMS *Ardent*, 1797–1798.
[145] Trotter, *Medicina Nautica*, v. 1, 5.
[146] Trotter, *Medicina Nautica*, v. 1, 19-20.
[147] Trotter, *Medicina Nautica*, v. 1, 22-23.
[148] Trotter, *Medicina Nautica*, v. 2, 4-5.

and institutionalised forms of scientific trialling and experimentation through a designated board, this new scientific culture had already permeated the medical branches of the Navy. As will be discussed in chapter four, a selection of enterprising surgeons also positioned themselves as active participants in this community.

The first set of reforms were crucial in expanding the Sick and Hurt Board's management, but the surgeons' base pay did not budge despite the efforts of Trotter and other surgeons. Trotter continued to push for reform to base pay on their behalf, convinced that 'the pay of the individual, and the interest of the public service, in this department, are so inseparably connected' that 'improvements in one, can only take place with an increase of the other'.[149] In short, if the Admiralty wanted an improved medical service, they needed to increase the pay of their practitioners.

What is perhaps more surprising is that two years later, when the entire Navy was shaken by collective action, surgeons were one of the few groups not to receive pay increases. The Great Mutinies of 1797, signposted by historians as a catalysing moment in seamen's collective action for improved working conditions, took place at Spithead, Nore, and Yarmouth, and were led by a conglomeration of seamen from various ship crews.[150] The first and largest mutiny at Spithead was led by designated delegates who met on board HMS *Queen Charlotte* and drafted a petition to the Admiralty, outlining their discontent and further demands. Excessively low wages were the primary grievance laid down by the seamen, alongside requests for better victualling, including demands for increased vegetables, improved provisioning of medical necessaries to facilitate health aboard ship, and maintenance of shore leave.[151] While the peaceful action at Spithead was a relative success, resulting in increased pay for seamen, it had little effect on medical officers: a negligible flat rate increase was accorded to surgeons' mates but not surgeons. Then, in 1802, all warrant officers *except* for surgeons were given a pay rise.[152]

This sustained pay dispute continued to occupy Trotter's efforts. In the third volume of Trotter's *Medicina Nautica* (1803), Trotter once again pleaded:

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149 Trotter, *Medicina Nautica*, v. 1, 17-18.
150 For more on the mutinies, see Ann Veronica Coats and Philip MacDougall, eds. *The Naval Mutinies of 1797: Unity and Perseverance* (Woodbridge, UK: Boydell Press, 2011); James Davey, *Tempest: The Royal Navy and the Age of Revolutions* (New Haven, CT: Yale University Press, 2023).
151 A copy of this petition can be found in Appendix II of G.E. Manwaring and Bonamy Dobrée, *The Floating Republic* (London: Frank Cass & Co. Ltd., 1966), 265-266.
152 Crimmin, 'The Sick and Hurt Board: Fit for Purpose?', 104.

> Provisions must be made for the officers of the navy on half-pay. Let not men, educated in high notions of professional dignity, from the applause that has followed all naval operations during the late war, be confined to obscurity by the peace for which they have bled.[153]

Here, Trotter was not discussing active pay, which was still very much an issue for proposed reform, but rather half-pay, which was an issue he had initially brought up in volume one of *Medicina Nautica* (1797).[154] Half-pay was the pay received by officers in service during times of peace. Active or full pay was largely the focus of dispute during the French Revolutionary War (1793–1802), but it is unsurprising that half-pay then became a growing concern after the Peace of Amiens in 1802, when hundreds of surgeons were no longer needed on active service despite being employees of the Navy. Under the existing pay scales, revised from 1795, only a few hundred of surgeons received half-pay, which allowed them some financial stability during peace time. The remaining surgeons and their assistants, particularly the newly recruited, found themselves in a precarious financial position during times of peace, which did not encourage loyalty to the Navy, and indeed it actively discouraged recruits, both new and old, from rejoining the service in 1803 at the onset of the Napoleonic Wars.

Renewed warfare in 1803 revitalised reform. Sustained recruitment issues forced the Sick and Hurt Board to reconsider what it could offer prospective candidates. In 1804, the Board assembled an estimate of £41,727 to increase pay, cover all medicines, and provide a uniform to surgeons, which was presented to Parliament and enacted in Council in 1805.[155] The Navy's subsidisation of medicines also served to standardise the medicines brought on ship. Surgeons were allowed 'to wear a distinguishing uniform during the time of their actually being employed' in order to give them 'a comparative rank in the service suitable to their situation'. The Board explained this to Parliament as something to which surgeons 'attach[ed] much importance', since their Army counterparts were 'allowed to rank with Captains, and their Assistants with subaltern officers'.[156] The wording of this Parliamentary request highlights the importance of uniform and rank to the surgeons. Surgeons' mates and their various rankings were abolished in favour of a unilateral designation as 'Assistant

[153] Trotter, *Medicina Nautica*, v. 3, 8-9.
[154] Trotter, *Medicina Nautica*, v. 1, 16.
[155] Lloyd and Coulter, *Medicine and the Navy,* v. 3, 32-34.
[156] Lloyd and Coulter, *Medicine and the Navy,* v. 3, 33.

Surgeon', though these assistants were excluded from wearing the uniform given to surgeons.

Pay was the biggest transformation. These improvements included pay increases based on seniority of service—a sliding scale that incentivised building a career within the Navy. Surgeons were granted 10*s* a day during active duty, with those claiming ten years of service gaining 14*s*, and twenty years of service, 18*s*.[157] This amounted to £15-£25 per month, or £180-£300 a year, a considerable increase from their previous £5 monthly/ £60 annual rate. In contrast, lieutenants, who previously had out-earned surgeons at £7 a month, now lagged behind at £8-£9.[158] Compared to civilian wages in Britain, naval surgeons were now paid at a far more compatible rate with civilian practitioners, who averaged £217, whereas many skilled tradesmen remained around the £50 mark.[159] Thus, this substantial pay increase after 1805 reflects the financial elevation of naval surgeons from a skilled trade income towards a comfortable professional income. Further, revised half-pay for surgeons was 6*s* a day with a sliding scale of retirement pay: 6*s* a day after twenty years and 15*s* a day after thirty years.[160] With such a sum, a surgeon could retire on half pay, making £100-£275 a year; even at the minimum half-pay rate of £100, surgeons were still earning double the annual wages of many skilled tradesmen. Assistant surgeons also benefited from these pay reforms. They were now granted 6*s* 6*d* a day (approximately £120 a year), and now they also qualified for half-pay of 2*s*-3*s* per day during times of peace as well as 15*s* a day on retirement after 30 years in service.[161] These pay rises for assistant surgeons represent a four-fold increase in their income compared to that before the reform.

Contemporary accounts by naval surgeons recognised the significance of these reforms. Commenting on the recent reform, Turnbull wrote: 'the rank of the Surgeons was fixed on respectable footing, and their emoluments augmented in a similar proportion'.[162] Peter Cullen's memoirs likewise cited 1805 as a turning point in recognising the importance of recruiting 'surgeons of character and abilities […] by giving them by giving them degrees of rank and emolument suitable to their conditions

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157 Turnbull, *The Naval Surgeon,* x-xiii. Brockliss et al. *Nelson's Surgeon,* table 1, 16.
158 Rodger*, Command of the Ocean*, 626.
159 Mokyr, *The Economics of the Industrial Revolution*, 180.
160 Turnbull, *The Naval Surgeon,* x-xiii. Brockliss et al., *Nelson's Surgeon,* table 1, 16.
161 Brockliss et al., *Nelson's Surgeon,* table 1, 16; Rodger, *Command of the Ocean*, 626.
162 Turnbull, *The Naval Surgeon,* ix.

in life on shore'.[163] Cullen explained the effects of these reforms on the status of these medical professionals: 'a class of Physicians to the Fleet' now 'holding rank with Commanders in the Navy or Majors in the Army', followed by a class of 'surgeons holding rank with Lieutenants of the Navy or Captains in the Army, and the third class was Assistants holding rank with the Mates and Midshipmen'. He added:

> The pay of each class was made suitable to its rank—and all entitled to half-pay according to their period of service. There is now great encouragement for excellent medical men to enter H. M. Navy, and many eminent persons of that description are men ornament to it.[164]

The hierarchy set out by Cullen illustrates how surgeons conceived of their professional position both within the ship hierarchy and correlated to the Army. These parallels suggest that Trotter's constant comparisons with Army pay were in fact addressing real concerns among surgeons. The issue with recruitment was not merely about pay in contrast to civilian practice but clearly about status and how they were perceived in their work environment within the military branches. Recognition of rank and the visual symbol of a uniform was crucial; both Turnbull and Cullen classify rank and pay as separate, but inextricably correlated, issues—both were central to the professional identity and status of these naval practitioners.

Conclusion

This chapter examined the naval surgeon's professional status and reputation at the close of the eighteenth century and his role within the naval bureaucracy. Sustained warfare during the French Wars underscored the administrative insufficiencies of the Sick and Hurt Board and the dire need to recruit and retain capable naval medical officers. The naval medical reforms of 1795–1796 and 1805 aimed to incentivise service through improved pay and status, increase bureaucratic efficiency, and facilitate the preventative management of troop health. These reforms consolidated medical power within the Sick and Hurt Board, leading to increased oversight in the regulation of medical practice and the professional lives of the surgeons. Thus, if the Seven Years' War fostered a burgeoning imperial medical bureaucracy, as described by Erica

[163] Cullen, 'Memoirs of Peter Cullen', 54-55.
[164] Cullen, 'Memoirs of Peter Cullen', 54-55.

Charters, then it was the French Revolutionary and Napoleonic Wars that consolidated power within the naval medical offices.[165]

Though spearheaded by a few key figures in the medical hierarchy, most notably Thomas Trotter, it would be unwise to think of these reforms as solely the product of elite physicians in positions of power. These reforms affected a collective class of middling surgeons who made up the ranks of this vast bureaucracy. These voices were not always recorded in the administrative records of the Sick and Hurt Board or in published medical texts by figures such as Trotter. As illustrated by Robert Young's quote, which opened this chapter, surgeons used their journals to communicate directly with the Sick and Hurt Board. Examining the surgeons' medical journals reveals that they very much believed they were a part of this bureaucracy and held a claim in these discussions. As we will see in chapter two, on preventative practice, surgeons positioned themselves as key stakeholders in health management within the ship œconomy.

[165] Charters, *Disease, War, and the Imperial State.*

2. Prevention in Practice: Negotiating Jurisdiction in the Ship Œconomy

In the East Indies, aboard HMS *Terpsichore* in November of 1803, surgeon John Collum became a baker. In the margins of his journal, Collum noted the difference in flour provided in the East Indies, which 'does not rise so well with leaven as the European flour, perhaps from a mixture of rice, therefore does not answer so well for making rolls'. In fresh ink added at a later date, the surgeon noted: 'since my writing the above, I have succeeded much better than formerly in making rolls, by having the sponge prepared with Toddy (or that spontaneous exudation from the Palma India and Cocoa nut) in place of leven [sic], the former being a fluid very strongly disposed to forment [sic]'.[1] Not only was the *Terpsichore*'s surgeon doing the baking, but he was actively experimenting with different local ingredients, such as coconut, to get the best rise out of his rolls. Collum's culinary exploits were unique in the journals, but the general sentiment that it fell to him to make a difference in the diet and provisioning on board ship would have been relatable to many surgeons in the service. Diet was perceived as one of the most important preventative measures, but surgeons had limited purview to proactively manage the seamen's diet since provisioning was under the control of the purser and captain. Some more enterprising surgeons, like John Collum, found creative ways to intercede, while others made use of existing systems or advocated for systemic changes to allow more preventative measures to be taken. This chapter will examine how naval surgeons navigated these jurisdictions to carve out their own roles in practice.

Since provisioning and victualing was under the control of the Navy's Victualing Board rather than the Sick and Hurt Board, it is impossible to study diet without also examining the intersect jurisdictional boundaries of these twin subsidiaries to the Navy Board. Victualing during the French Wars has been addressed in an excellent study by Roger Knight and Martin Wilcox, describing the development of the 'contractor state' within an imperial context. This top-down study focuses on the Victualling Board, which they describe as an effective and efficient administrative system relying primarily on private contractors within the national economy to supply

[1] TNA, ADM 101/122/4 [journal 4], f. 9, HMS *Terpsichore*, 1803–1804.

the complex global machine of the Royal Navy.[2] Janet MacDonald's study of the internal management of victualing provides a different view of the provisioning systems in place, highlighting its inefficiencies.[3] However, both studies neglect the surgeon as key stakeholder. This chapter is not interested in interceding in the debate about how effective this provisioning system was but rather investigates how the surgeon managed provisioning issues when they coincided with his duties to maintain health aboard ship. As such, the following cases tend to highlight the problems that occurred within the system, thus meriting commentary in the surgeons' own journals.

Historians of military medicine have identified a transition from responsive to preventative medicine due to the high rates of disease experienced within the mobile units of the military in the eighteenth century.[4] The treatment of scurvy has received considerable attention among scholars, who have elucidated how the multifactorial disease model, which stressed the varied aetiologies of the disease, combined with chronic issues of finance, storage, and supply, delayed improvements.[5] Attention to hygiene and ventilation has likewise served as a topic of discussion among historians seeking to connect the hygienic measures developed in the military to the broader development of environmental hygiene that emerged in the nineteenth century.[6]

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[2] Roger Knight and Martin Wilcox, *Sustaining the Fleet, 1793–1815: War, the British Navy, and the Contractor State* (Woodbridge, UK: The Boydell Press, 2010). See also a study of the Baltic fleet: James Davey, *The Transformation of British Naval Strategy: Seapower and Supply in Northern Europe, 1808–1812* (Woodbridge, UK: Boydell Press, 2012).

[3] Janet MacDonald, *The British Navy's Victualling Board, 1793–1815: Management Competence and Incompetence*, (Woodbridge, UK: The Boydell Press, 2010).

[4] Christopher Lawrence, 'Disciplining Disease: Scurvy, the Navy and Imperial Expansion, 1750–1820', in *Visions of Empire: Voyages, Botany, and Representations of Nature*, David Phillip Miller and Peter Hans Reill, eds. (Cambridge: Cambridge University Press, 1996), 80-106; J. D. Alsop, 'Warfare and the Creation of British Imperial Medicine, 1600–1800', 23-50, and Paul E. Kopperman, 'The British Army in North America and the West Indies, 1755–83: A Medical Perspective', 51-86 in *British Military and Naval Medicine, 1600–1830*, G. L. Hudson, ed. (Amsterdam: Rodopi, 2007); Mark Harrison, *Medicine in an Age of Commerce and Empire: Britain and its Tropical Colonies, 1660–1830* (Oxford: Oxford University Press, 2010); Catherine Kelly, *War and the Militarization of British Army Medicine, 1793–1830,* (London: Pickering and Chatto, 2011); 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).

[5] Mark Harrison, 'Scurvy on Sea and Land: Political Economy and Natural History, c. 1780–c. 1850', *Journal for Maritime Research* 15, n. 1 (2014): 7-25; Erica Charters, '"The Intention is Certain Noble": The West Squadron, Medical Trials, and the Sick and Hurt Board during the Seven Years' War (1756–63)', in *Health and Medicine at Sea, 1700–1900,* David Boyd Haycock and Sally Archer, eds. (Woodbridge, UK: Boydell Press, 2009), 19-37; Erica Charters, 'Disease, Wilderness Warfare, and Imperial Relations: The Battle for Quebec, 1759–1760', *War in History* 16, n. 1 (2009): 1-24; Brian Vale and Griffith Edwards, *Physician to the Fleet: The Life and Times of Thomas Trotter, 1760–1832* (Woodbridge, UK: Boydell Press, 2011), 110-123.

[6] Elise Judza Smith, '"Cleanse or Die": British Naval Hygiene in the Age of Steam, 1840–1900', *Medical History* 62, n. 2 (2018): 177-198; J. V. Pickstone, 'Dearth, Dirt and Fever Epidemics: Rewriting the

The shift towards implementing a preventative health policy in the Navy has received sustained attention from scholars. Guenter Risse's analysis of patient records at Edinburgh Royal Infirmary—a hospital contracted by the Royal Navy during the wars—confirmed that major improvements in diet and hygiene can be seen in the seamen's health from 1791 to 1800.[7] Christopher Lawrence has argued that naval surgeons in the late eighteenth century became 'a new managerial class' over health, harnessing new environmental and social models of disease that increased their control over both the preventative management of diet and hygiene, and moral and social order through medical discipline.[8] Drawing on the published works of esteemed naval physicians, Lawrence argued that this preventative model was enabled by a shift from paternalism and collective management to institutional, authoritarian management of labour through a divisional system, fully instituted by the 1790s. This shift towards a divisional system, where the crew was divided into teams and managed by midshipmen, resulted in a greater emphasis on discipline and order, which Lawrence argued extended into the medical realm.[9] However, more recently, historians have disputed the loss of paternalism in the Navy during the French Wars.[10] Further, the existence of preventative health policies motivated by practical yet paternalistic care for troop welfare in the Army and Navy existed as early as the Seven Years' War (1756–1763).[11]

In this chapter, I examine the descriptive records of surgeons' medical practice to examine both the extent to which this preventive health policy was inculcated into shipboard medical practice and the surgeon's role in effecting this policy. I argue that surgeons played a negotiatory role with a surviving system of decentralised paternalism rather than authoritarian institutionalisation. This chapter, which covers provisioning and hygiene, and the following chapter on behaviour and discipline, will examine the

History of British "Public Health", 1780–1850', in *Epidemics and Ideas, Essays on the Historical Perception of Pestilence*, T. Ranger and P. Slack, eds., (Cambridge: Cambridge University Press, 1992), 125-148; James Riley, *The Eighteenth-Century Campaign to Avoid Disease* (London: St. Martin's, 1987).

[7] Guenter B. Risse, 'Britannia Rules the Seas: The Health of Seamen, Edinburgh, 1791–1800', *Journal of the History of Medicine and Allied Sciences*, 43, n. 4 (1988): 426-446.

[8] Lawrence, 'Disciplining Disease', 93.

[9] This transition to a divisional system and its implications was initially made by N. A. M. Rodger, *The Wooden World: An Anatomy of the Georgian Navy* (London: Fontana Press, 1988), 205-211.

[10] On the continued roll of paternalism in ship management, see Roger Moriss, 'Crew Management and Mutiny: The Case of Minerve, 1796–1802', in *The Naval Mutinies of 1797: Unity and Perseverance*, Ann Veronica Coats and Philip MacDougall, eds. (Woodbridge, UK: Boydell Press, 2011), 107-119 and Catherine Beck, 'Patronage and the Royal Navy, 1775–1815' (unpublished PhD thesis, University College London, 2017).

[11] Erica Charters, *Disease, War, and the Imperial State.*

extent to which surgeons gained managerial control over these preventative health measures. While the next chapter will examine the patient case notes themselves, this chapter examines the marginal 'remarks' that accompanied the patients' records or the 'general remarks' at the end of the journal. These marginal and concluding remarks tell us about the surgeons' agency in ship-wide health management, and how they used their journals to communicate challenges and suggestions to the Sick and Hurt Board. By analysing the roles they played in health management, I also explore the professional identities they assumed in their practice. While practitioners operating in provincial Britain were still operating with a culture of 'medico-gentility', I demonstrate how the Navy—as an early adherent to universalised, preventative, applicable medicine—provided an institutional culture that facilitated a reformative medical identity.[12] Operating as stakeholders to health management, naval surgeons wielded their medical expertise to negotiate for improvements to the health and welfare of the social body.

In the first section, I introduce the various theories of disease at the close of the eighteenth century, which stressed external and internal factors in bodily health, and informed the surgeons' medical practice. The second section examines how and when surgeons involved themselves in ship-wide hygiene measures to determine the extent of their preventative control. The third section turns to the surgeons' involvement in provisioning, which impacted their management of diet. Altogether, I demonstrate how overlapping jurisdiction and the unique variabilities of practising medicine on ship restricted the implementation of an authoritarian top-down preventative policy. I argue that a surgeon's practice was implicitly reactive and negotiatory, responding to the environment and crew, provisioning issues, and ship management. Their medical authority was reflected in their ability to respond creatively, swiftly, and collaboratively *in situ* to the unique variables of practising medicine on the ship. Surgeons can best be described as negotiators, not managers, of shipboard health, and their successful disease management relied on their ability to persuade other stakeholders, such as captains, officers, and crewmembers, to invest in preventative management. However, in some cases, enterprising surgeons cast themselves in more proactive and reformative roles within the naval bureaucracy by

[12] Michael Brown, *Performing Medicine: Medical Culture and Identity in Provincial England, c. 1760–1850* (Manchester: Manchester University Press, 2011).

proposing new systems that were better suited to the needs of the ship based on their practical experience.

What becomes apparent in these journals is how environmentally permeable and connected the ship space was to the outside world. And yet, ships were simultaneously cramped ill-ventilated spaces that fostered diseases among the crew, especially on long voyages in which ships were isolated and disconnected, unable to secure suitable provisions. As we will see, these same tensions of connectivity, permeability, and disconnection are reified in the medical theories that circulated during the eighteenth century. Foucault initially noticed the seemingly contradictory spatial experience of ships. The 'mixed, joint experience' of what he called 'heterotopias', or counter-sites, meant that these spaces contained multi-layered, and sometimes contradictory, meanings.[13] This concept will appear throughout the remainder of my thesis in myriad ways, but here I highlight how this idea can be used to understand the surgeons' health management of the ship and crew.

Theories of Disease

Aboard HMS *Colossus* in 1804, the surgeon lamented that, despite 'the most excellent œconomy of the ship', which included 'cleanliness, dryness, and the comforts of the men', a contagion still took hold.[14] The application of this Greek term 'œconomy' (*oikonomía*) to the ship reveals how some surgeons viewed themselves within this ship society. Originally implying the management of household affairs, the term 'œconomy' was expanded and applied to a variety of different contexts in the eighteenth century to refer to achieving balance and harmony; this could refer to the domestic sphere, national economy, politics, and even bodily health.[15] Part of the ship's œconomy was

[13] Michel Foucault, 'Of Other Spaces', trans. Jay Miskowiec, *Diacritics* 16, n. 1 (1986): 24, 27; see also Matthew Ylitalo and Sarah Easterby-Smith, 'Ships', in *Doing Spatial History*, Ricardo Bravaj, Konrad Lawson, and Bernhard Struck, eds. (London: Routledge, 2021), 121-138; Martin Dusinberre and Roland Wenzlhuemer, 'Editorial—being in transit: ships and global incompatibilities', *Journal of Global History* 11 (2016): 144-162.

[14] TNA, ADM 101/94/4, f. 48, HMS *Colossus*, 1804.

[15] Hannah Wills, 'The Diary of Charles Blagden: Information Management and the Gentleman of Science in Eighteenth-Century Britain' (unpublished PhD thesis, UCL, 2019), 98-102; for more see: Lissa Roberts, 'Practicing Oceonomy During the Second Half of the Long Eighteenth Century: An Introduction', *History and Technology* 30, n. 3 (2014): 133-48.

a holistic view of ship health, in which the surgeon and his assistants played a crucial role managing medical care and administration.

To better understand the preventative measures taken aboard ship, it is first important to understand what medical theories dictated the surgeons' practice. In the eighteenth century, health was established through the precarious balancing of internal and external factors—a system inherited from the ancient Greek theory of bodily humours (blood, phlegm, black and yellow bile).[16] The body was seen as permeable, existing in flux with the external environment; excessive heat, moisture, cold, or air could disrupt the internal balance of the body, as could an unbalanced diet. This informed medical theories of putrefaction and miasma (literally, 'bad air') in which vapours, water, and organic substances released noxious air that could have a negative impact on health. For example, on ship, putrefaction could occur in the air due to improper ventilation, fumigation, and washing, but also in the body, giving rise to 'putrid diseases' such as scurvy.[17]

From the 1780s, a new theory emerged that stressed the dysregulation of the nervous system as a cause of poor health.[18] This dysregulation could occur though 'exciting' causes, such as poor diet and weather, or 'predisposing' causes such as indolence, lack of exercise, or fatigue. By ensuring a proper diet, exercise, and discipline, one could avoid 'nervous debility'. Taken together, these overlapping theories of putrefaction and dysregulation formed what Mark Harrison has termed a multi-factoral model of disease, which persisted until the mid-nineteenth century.[19] Clean air, proper diet, good discipline, and hygiene were all seen to affect an individual's 'habit' or 'constitution', and the measures taken aboard ship by the surgeon to prevent disease or treat illnesses were fundamentally based on rectifying internal or external imbalances to foster a healthy ship and healthy crew.

A patient's 'habit' was used to describe an individual's internal balance through repetitive action.[20] In their journals, the surgeons appear to use constitution and habit

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[16] The following is summarised from Harrison, 'Scurvy on Sea and Land', 7-10.
[17] Smith, ""Cleanse or Die""; Harrison, 'Scurvy on Sea and Land'.
[18] The following is summarised from Harrison, 'Scurvy on Sea and Land', 7-10; Harrison, *Medicine in an Age of Commerce and Empire*, 227-236.
[19] Harrison, 'Scurvy on Sea and Land', 9-10.
[20] John P. Wright 'Custom and Habit in Physiology and the Science of Human Nature in the British Enlightenment', *Early Science and Medicine* 22 (2017): 183-207; Steven Shapin, 'Why Was "Custom a Second Nature" in Early Modern Medicine?', *Bulletin of the History of Medicine* 93 (2019): 1-26, esp. 3-5.

interchangeably, but 'habit' is more often distinguished by a patient's agency over actionable change. Within this construct, individuation and agency over one's health, though ill-defined, was possible. One could develop a 'scorbutic habit', which reflected a body's susceptibility to recurrent episodes of scurvy. For example, the surgeon of *La Nymphe* described one patient whose 'habit has been rendered scorbutic by very bad diet, and confinement, together with very dirty cloathing [sic].'[21] Persistent issues with poor diet, bad air flow, and poor levels of cleanliness was believed to render the patient's 'habit' prone to the disease of scurvy. As will be explored in chapter three, excessive or repetitive actions were seen to unbalance a patient's habit and make them more prone to disease or even 'addicted' to certain behaviours.

The concept of bodily 'constitutions' underpinned climate-based medical theories in which a patient's susceptibility to specific diseases was based on their geographic and climatic background and experiences.[22] For example, travel to a new location with new diseases would be followed by a period of acclimatisation in which the patient would adjust to the new disease environment after an initial period of illness. This guided whether individuals would be suited to different climates—largely within the binary of temperate/northern climates and tropical climates. An individual's constitution was also seen to guide what foods they should eat and how much labour they could endure—a particularly pernicious idea that gave way to false reasoning concerning African labour in the Americas and elsewhere.[23] The Admiralty suggested preventative measures for the surgeon to deal with different climates; for example, in tropical climates, surgeons were to provide Peruvian Bark (cinchona) and wine to prevent 'sickness and mortality' among those sent to shore.[24]

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[21] TNA, ADM 101/110/4B, f. 15, HMS *La Nymphe*, 1797.

[22] Mark Harrison, *Climates and Constitutions: Health, Race, Environment and British Imperialism in India, 1600–1850* (Oxford: Oxford University Press, 1999); Suman Seth, *Difference and Disease: Medicine, Race, and the Eighteenth-Century British Empire* (Cambridge: Cambridge University Press, 2018).

[23] Erica Charters, 'Making Bodies Modern: Race, Medicine, and the Colonial Soldier in the Mid-Eighteenth Century', *Patterns of Prejudice* 46, n. 3-4 (2012): 230; Michael Joseph, 'Military Officers, Tropical Medicine, and Racial Thought in the Formation of the West India Regiments, 1793–1802', *Journal of The History of Medicine and Allied Sciences* 72, no. 2 (2017): 152; Tim Lockley, *Military Medicine and the Making of Race: Life and Death in the West India Regiments, 1795–1874* (Cambridge: Cambridge University Press, 2020).

[24] Admiralty, *Regulations and Instructions Relating to His Majesty's Service at Sea* (London: W Winchester and Son, 1808), 277. For more on chinchona, see Stefanie Gänger, *A Singular Remedy: Cinchona Across the Atlantic World, 1751–1820* (Cambridge: Cambridge University Press, 2020).

The surgeons' journals demonstrate some of the ways these theories were drawn on in practice. Climate played a particularly strong role in surgeons' analyses of disease in their journals. Thomas Tappen of HMS *Arab*, stationed in the West Indies (1798–1799) relied on climate-based medical theories to explain why ulcers in the West Indies were so easy to contract and difficult to cure. He believed it to be 'owing to the high rarified [*sic*] state of the humours', which weakened the fibres of the body's tissue in this climate.[25] Though diseases experienced in tropical regions were frequently seen to be more aggressive or severe, temperate climates also had their own subset of illnesses attributed to the cold air. The surgeons of both HMS *Swiftsure* and HMS *Shannon* remarked on increased rates of pulmonic inflammation in temperate climates.[26] Cruising around the coast of North America from Newfoundland to Bermuda, the surgeon of the *Shannon* concluded that the sixteen cases of pulmonic inflammation were 'caused by the extremes of temperature in the atmosphere'.[27] Providing a chronological account of the ship's location in the general remarks of the journal, he correlated weather to the rates of disease, from which he concluded the leaky, damp ship compounded the ill-effects of the cold weather in Halifax, Nova Scotia.

A patient's role or task on ship was also considered a defining feature of susceptibility. For example, surgeon Outram of *La Nymphe* remarked that it was night watch marines who were most affected by fever due to their long supervisory stints in the cold night air: 'The number of marines affected with the fever is greater in proportion than of the seamen, occasioned probably by their being much more exposed to the unwholesome cold night air, while standing on the gangway etc. as centinels [sic]'.[28] A drunken armourer became susceptible to rheumatic fever not only due to their liberal drinking habits, but also from 'standing in a draft of wind when perspiring after working at the forge, bringing on the rheumatic fever'.[29] Though both these cases include climactic underpinnings in line with concurrent medical theories, they also demonstrate a belief that one's level of activity or ascribed task on board could affect health.

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[25] TNA, ADM 101/85/4A, f. 25, HMS *Arab*, 1798–1799.
[26] TNA, ADM 101/121/3B, f. 38, HMS *Swiftsure*, 1798–1799.
[27] TNA, ADM 101/120/3, f. 24, HMS *Shannon*, 1812–1813.
[28] TNA, ADM 101/110/4B, f. 21, HMS *La Nymphe*, 1797.
[29] TNA, ADM 101/80/5A, f. 19-21, HMS *Adventure*, 1799–1800.

Medical theories of environmental permeability worked together with observations of labour and activity, affecting internal balance. Attention to behaviour and how it could affect disease susceptibility was a causal relationship that surgeons were able to explore due to their unique positionality on board ship. Occupational hazard, therefore, was considered a precedent for disease. Indeed, rheumatism was often associated with old seamen and a diagnosis of 'rheumatism and old age' was ubiquitous throughout the journals. This was a logical manifestation of occupational health: an inflammatory disease focused on the joints is not entirely surprising after an arduous, physically demanding career at sea. Given that these ship communities were also spaces of labour, the surgeons' correlations were often fuelled by their direct engagement with their patients as labourers. Living and working together within the ship space afforded surgeons the opportunity to observe patients in all aspects of their life, which, in turn, influenced their medical reasoning.

Surgeons also observed that certain patient demographics were more susceptible to certain ailments, forming generalisations among different kinds of patient groups, frequently correlated to 'habit'. For example, ulcers were subject to much debate, and a few surgeons included full treatises or letters to the Sick and Hurt Board remarking on their pernicious nature. Surgeon Warner of HMS *Ville de Paris* noted that ulcers predominantly affected two classes of people: 'the ulcer attacks the younger and plethoric men, but especially those who are lately raised [i.e. impressed]' as well as 'the foreigners taken from prisons, men dirty in their persons and indolent in their habits'.[30] Thus, Warner associated increased susceptibility to ulcers to young, sickly men pressed into service against their volition and unclean and indolent prisoners of war. In the back of the journal for HMS *Fisgard*, an extract of a letter was copied in by the surgeon. The letter, originally written by Mr. Maginess, surgeon of the Prisoners of War at Norman Cross remarked that prisoners seemed more susceptible to ulcers.[31] In these cases, those most afflicted by ulcers were all those deemed least useful to a militarised labouring force: sickly young men unacclimated to foreign stations; the lazy and indolent, unlikely to pull their weight on ship; or prisoners of war, who represented more mouths to feed and a severe threat of contagion.

[30] TNA, ADM 101/125/3, f. 43, HMS *Ville de Paris*, 1813–1814.
[31] TNA, ADM 101/100/3, f. 50-52, HMS *Fisgard*, 1805–1806.

Generalising and categorising patient groups facilitated surgeons' own medical practice by correlating these traits to diagnoses. When one surgeon, sometimes with the help of a few assistant surgeons, was in charge of maintaining the health of hundreds of men, this reliance on broad trends allowed them to synthesise their findings. The requirements of medical practice in an institution such as the Navy encouraged broad-brush analyses based on categorical biases. Categorising patients by certain defining characteristics in their temperaments and characters also provides insight into certain medical biases embedded in these assessments, which we will explore in more depth in chapter three. Scholars have rightly examined how race was constructed through medical understandings of bodies, but there remain numerous other social and cultural biases, embedded in military medicine, that require similar interrogation.

The Admiralty's *Regulations and Instructions* (1808) offer insight into the actual purview granted to the surgeon. The *Regulations and Instructions* prior to the revisions in 1808 give little guidance on surgeons' practice outside of administrative requirements. Therefore, the revised regulations will be used in this chapter to describe the standard prescriptive purview of the surgeon during the French Wars, as these were likely representative of roles already in practice, rather than a significant shift in medical practice after 1808. The 1808 regulations asserted that infections, accidents, and wounds on board ship largely occurred due to the 'crouded [sic] accommodations, the nature of [the sailors'] diet, and the varieties of weather and climate'.[32] The surgeon was expected to prevent cases of illness and injuries to the best of his abilities: 'the guarding against and counteracting these evils will depend very materially on [the surgeon's] own resources and promptitude in applying the most speedy remedies according to circumstances'.[33] Thus, a surgeon's preparedness and swift action were seen as the best qualities to ensure a healthy voyage, as well as the material resources he was able to wield. These regulations established clear boundaries of the surgeon's jurisdiction in the sick berth, including examining patients, providing them with proper treatment and diet, managing requisite supplies, and ensuring that standards of hygiene were maintained.[34] The surgeon answered directly to the captain, providing him with

[32] Admiralty, *Regulations and Instructions* (1808), 283.
[33] Admiralty, *Regulations and Instructions* (1808), 284.
[34] Admiralty, *Regulations and Instructions* (1808), 265-286.

regular reports on the sick; requests for supplies, food, and fumigation all went through the captain. This relationship was reciprocal and relied on the surgeon's knowledge, as the medical officer, to request supplies and health measures when necessary.

Hygiene: Prevention and its Limitations

This section explores the intersection between theory and practice in the surgeons' own journals and discusses how surgeons effectively managed ship health in collaboration with the captain. If one takes the Admiralty's prescriptive regulations at face value, the surgeon's authority over ship-wide health was actually quite minimal. In contrast, the published medical texts by naval practitioners describe a proactive, managerial officer with control over all aspects of hygiene and discipline. The reality was a careful negotiation of both, which depended as much on the captain, the crew, and a variety of external factors as it did the surgeon's assertion of his own medical authority. This section will outline the theory and practice of preventative measures, first with regard to the seamen's bodies and second in terms of the ship environment. I conclude with a discussion of the limitations to prevention when contagion took hold in the ship.

A major challenge to hygiene was the permeability of the ship environment. In the eighteenth and early nineteenth century, wooden ships were densely-crowded spaces: a first-rate gun ship holding up to 900 men and a third-rate ship—the most common model—containing 600 men.[35] Sanitation of a ship's environment was a crucial measure against the emergence and spread of disease from these cramped, ill-ventilated accommodations. As we will return to below, the surgeons' journals frequently expressed concern over excess moisture and damp, as well as climates that were either too hot or too cold. This permeability was not only around the environment, but also the porosity of the ship to visitors or new recruits. Dirty clothing was frequently labelled a vector for disease, as was clothing made from the wrong material, which was seen to unbalance the body's internal system.

[35] Lloyd and Coulter, *Medicine and the Navy*, v. 3, 70.

Prevention among the Crew

Despite being targeted by contemporary medical practitioners as a method to manage health, surgeons held little authority over the clothing and cleanliness of the crew. By the early nineteenth century, publications seem to suggest that seamen themselves had more opportunities to incorporate hygiene in their routines: William Turnbull's *Naval Surgeon* (1806) and C. F. Vandeburgh's *Mariner's Medical Guide* (1819) both recommended that seamen regularly bathe and wash their bed linens in order to avoid any sort of dampness and moisture.[36] However, the extent to which surgeons could actually control these factors is unclear. The Admiralty's *Regulations* (1808) only stipulated that surgeons had control over the clothing, bedding, and linens within the sick berth, and they were guided to sanitise the linens of feverish patients with warm or boiling water and soap.[37] Thus, while preventative practice was certainly becoming the norm, with contemporary medical theories integrated into institutional practice, this did not necessarily mean that the ship surgeons increased their control and oversight over these measures.

In their publications, contemporary physicians, such as Thomas Trotter and Gilbert Blane, also debated which material was best for different climates and activities due to the correlation of temperature and moisture with disease. Linen, cotton, flannel, and woollen clothing were all suggested for their moisture-wicking capacities depending on the climate, but the authors were not in total agreement about which was most suitable and when.[38] For example, Thomas Trotter disagreed with standard approaches to layering flannel directly against the skin due to its capacity to lead to perspiration, thus unbalancing the system and leading to illness.[39] Nevertheless, this remained a common practice on ships in the early nineteenth century, as remarked in the surgeons' journals.[40]

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[36] William Turnbull, *The Naval Surgeon; Comprising the Entire Duties of Professional Men at Sea* (London: Richard Phillips, 1806), 16-17; C. F. Vandeburgh, *The Mariner's Medical Guide* (London: Baldwin, Cradock, and Joy, 1819), 25-28.
[37] Admiralty, *Regulations and Instructions*, (1808), 270-271. On the introduction of soap: Lloyd and Coulter, *Medicine and the Navy*, v. 3, 79.
[38] Turnbull, *The Naval Surgeon,* 18-21; Gilbert Blane, *Observations on the Diseases Incident to Seamen* (London: Joseph Cooper, 1785), 315-318; Thomas Trotter, *Medicina Nautica: An Essay on the Diseases of Seamen*, v. 1 (London: Cadell & Davies, 1797), 93.
[39] Trotter, *Medicina Nautica*, v. 1, 93.
[40] TNA, ADM 101/121/3C, f. 5, HMS *Swiftsure*, 1799–1800; TNA, ADM 101/107/2A, f. 35-36, HMS *London*, 1800–1801; TNA, ADM 101/91/4, f. 49, HMS *Bombay*, 1808–1809.

The *Regulations and Instructions* themselves offered little additional clarity. The most specific medical guidance provided on clothing material was that, in cool and wet climates, the surgeon was to ask the captain to supply an 'adequate stock of suitable clothing' to combat 'rheumatic and pulmonic complaints' caused by 'a deficiency of warm clothing'.[41] Not only was the guidance open-ended as to what type of material was best, but the authority for action was in the hands of the captain. We can assume that the surgeons' expertise would guide this action, but this depended upon the relationship between captain and surgeon rather than there being clear prescriptive guidance. For example, when the crew of HMS *Redpole* was suffering from catarrhal in January 1815 off the coast of England, the surgeon noted in his journal that he 'freely requested the captain to issue an order that every man be supplied with flannel drawers and waistcoats and that they be obliged constantly during the winter season to wear them'.[42] The captain agreed, and within ten days the complaints vanished. The surgeons of HMS *Arachne* and HMS *Ville de Paris* likewise mention that flannel waistcoats were especially helpful to the patients suffering pulmonic complains.[43]

Sailing to new climates also seemed to incentivise a change in clothing. When HMS *Arethusa* had entered into the tropics while sailing to the West Indies, the captain had the crew's clothing replaced with linen jackets and trousers better suited to the climate. This was also in response to potential contact with smallpox. As a preventative measure, the captain ordered all the 'old ragged woollen clothing', the feared vector, to be 'collected and thrown overboard', before replacing the crew's clothing with linens. However, each man had the right to keep: 'one good jacket and trousers of woollen [sic] for night watches' and the clothing that was 'fit to keep' was 'carefully packed and stowed away for them' until their return to Europe.[44] In the case of HMS *Bombay,* then stationed in the Channel, the surgeon noted that 'particular attention was paid to the article of clothing' and 'every man [was] obliged to wear flannel next to his skin' in order to keep warm.[45] This was because the ship's company was largely comprised of recruits who had just terminated service in the West Indies and were thus seen to be habituated to tropical climates. These two cases reveal that the captain,

[41] Admiralty, *Regulations and Instructions* (1808), 278.
[42] TNA, ADM 101/117/1, f. 13, HMS *Redpole*, 1814–1815.
[43] TNA, ADM 101/85/5C, f. 13, HMS *Arachne*, 1813–1814; TNA, ADM 101/125/3, f. 7, HMS *Ville de Paris*, 1813–1814.
[44] TNA, ADM 101/86/1, f. 11, TNA, HMS *Arethusa*, 1805–1806.
[45] TNA, ADM 101/91/4, f. 28, HMS *Bombay*, 1808–1809.

as much as the surgeon, was aware of contemporary medical theories about clothing and climate, and the surgeons frequently relied on the captain's authority to dictate how the crew dressed. In other words, the surgeon's scope for prevention was dependent on how responsive the captain was to the surgeon's medical expertise.

Contemporary publications also correlated dirty clothing and disease with the transfer of impressed or coerced men onto a ship.[46] When HMS *Kite* received a transfer of 'supernumerary' men from three other ships in 1802, the surgeon was shocked to find that 'most of these men were in a very dirty state and very badly clothed', which seemed to explain the spread of contagion shortly after.[47] The surgeon noted that the *Kite*'s own ship company was in perfect health before these men boarded, and 'everything was immediately put in practice that was thought could have any effect in eradicating contagion, or arresting its further progress', with the whole crew enlisted to wash decks, bedding, clothes, and ensure ventilation. Despite the institution of these preventative measures, thirty-three men succumbed to the fever.[48] Nevertheless, here we have a clear instance of the surgeon instituting preventative hygienic protocols with the help of the ship's company when he noticed the poorly-clothed men.

Prevention in the Ship Environment

Since contemporary medical theory highlighted the permeability of the body and the environment, preventing putrefaction and the spread of illness in the damp, cramped ship space was of prime importance. The Admiralty's *Regulations* advised surgeons to encourage the captain to conduct routine washing, ventilation, and fumigation of the whole ship, but the surgeon's authority was only around the sick berth.[49] Surgeons were tasked with washing the sick berth with vinegar and keeping 'a stove with clear-burning cinders' alight in the sick berth 'to prevent dampness and purify the air'.[50] This practice, known as fumigation, arose out of miasmatic theory, which conceived of disease as borne from 'foul' or 'bad air'; the practice of fumigation was thought to dry and sanitise the air.[51]

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[46] Blane, *Observations on the Diseases Incident to Seamen*, 226, 310. Trotter, *Medicina Nautica,* v. 1, 44.
[47] TNA, ADM 101/105/7B, f. 11, HMS *Kite*, 1802–1803.
[48] TNA, ADM 101/105/7B, f. 12, HMS *Kite*, 1802–1803.
[49] Admiralty, *Regulations and Instructions* (1808), 276-277.
[50] Admiralty, *Regulations and Instructions* (1808), 270, 275.
[51] Smith, "'Cleanse or Die'".

Contemporary published medical texts stressed the importance of a clean and dry ship, but they offered differing suggestions on how to achieve this. For example, instead of washing with vinegar, as requested by the Admiralty, James Lind and Gilbert Blane both favoured using hot sand to scrub the ship, since they feared vinegar would increase moisture on board ship and, consequently, infection.[52] Such variances of opinion also existed for the practice of fumigation, which offers a good opportunity to see how naval surgeons navigated different medical opinions. Initially popularised by Lind, fumigation relied on the burning of brimstone, charcoal, sulphur, tobacco, and even gunpowder and tar to eradicate the bad air.[53] However, not all physicians were disciples of this technique. Thomas Trotter had 'nothing to say in praise' of fumigation, arguing instead that it was both ineffective and that regular exposure to smoke was dangerous to health.[54] With such variation in guidance—sometimes at odds with the *Regulations* themselves—the journals provide opportunities to examine the surgeon's own agency and medical decision-making.

The journals offer a few examples of ship hygiene in practice. When a leak aboard HMS *Swiftsure* (Channel Service, 1798–1799) led to a 'great dampness', the surgeon followed up by 'cleaning and drying the decks and having fires wherever it was possible'.[55] Writing over a decade later, the surgeon of HMS *Shannon* noted that the severe weather of Halifax, Nova Scotia, caused a great many medical complaints related to the wet and cold conditions; 'the constant practice […] of bringing down hanging stoves between decks' was cited as 'what most conduced towards the general health of the crew'.[56] Thus, in these colder, wetter environments, stoves were commonly used to dry and heat the air and ship, which was seen to prevent putrefaction and miasma by balancing out the extremes to temperatures and moisture.

Fumigation was also a popular method to purify the air through the burning of specific chemicals and substances. In the final years of the eighteenth century, fumigation with nitrous gas or acid was becoming especially popular after a series of medical trials conducted by Dr. James Carmichael Smyth with the help of naval surgeons, supported by the Sick and Hurt Board. It was believed that nitrous

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[52] Lloyd and Coulter, *Medicine and the Navy*, v. 3, 75.
[53] Lloyd and Coulter, *Medicine and the Navy*, v. 3, 76.
[54] Trotter, *Medicina Nautica*, v. 1, 222-223.
[55] TNA, ADM 101/121/3B, f. 38, HMS *Swiftsure*, 1798–1799.
[56] TNA, ADM 101/120/3, f. 24, HMS *Shannon*, 1812–1813.

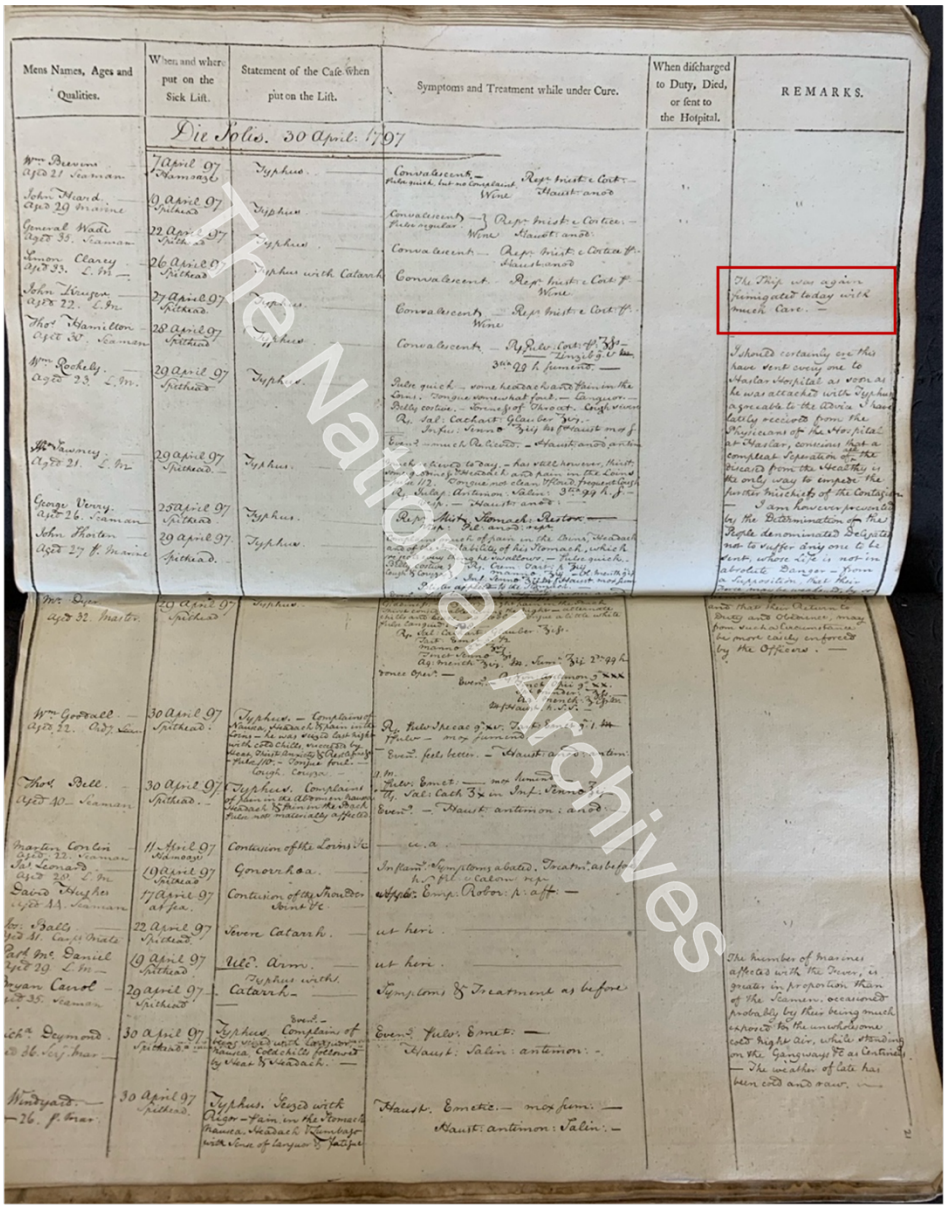

Figure 7. TNA, ADM 101/110/4B, HMS *La Nymphe*, 1797–1798. Marginal remarks provide commentary on general ship-wide practice. Reproduced with the permission of The National Archives.

fumigation protected against putrefaction through the chemical release of oxygen through the burning nitric acid. The results of these trials from the *Union* hospital frigate were published in 1796 and again in 1799, swiftly becoming mainstream practice

in the Navy.[57] The journals for HMS *La Nymphe* (1797–1798), HMS *Vanguard* (1797–1798), HMS *Captain* (1797–1798), and HMS *Bittern* (1798) all contained traces of their implementation of nitrous fumigation mixture as 'recommended by Dr. Smith [Smyth]'.[58] For example, during an outbreak of typhus in 1797, Benjamin Fonseca Outram of *La Nymphe* sporadically scrawled in the margins of his journal when the ship was fumigated, frequently with the aid of other officers (**Figure 7**). Outram's notes make it clear that sometimes this task fell entirely to him: 'today I fumigated the between decks with nitrous acid'.[59] Serving around the Mediterranean from 1797 to 1798, surgeon James Farquhar of HMS *Captain* fumigated the whole ship with gunpowder, while reserving the nitrous gas exclusively for the sick berth.[60] However, when a contagion of small pox affected the company later in the service, Farquhar changed his practice: 'I constantly fumigated the ship with nitrous gas every morning and evening although it did not prevent the contagion from spreading, it was certainly preventing the very offensive smell which constantly attends patients labouring under a load of the confluent small pox'.[61] If not effective against contagion, at least it offered respite to the senses.

As a result of the growing popularity of nitrous fumigation, Thomas Trotter, then Physician of the Channel Fleet, published a warning against it in the *Medical and Physical Journal* in April 1800. Trotter specifically chose the periodical press to discuss nitrous fumigation due to its readership among naval surgeons:

> It is with much pleasure that I witness the increasing circulation of your publication among the Surgeons of the Fleet; for in their department it is singularly useful, by giving a compendium of all improvements, and enabling them to apply the same to their own practice.[62]

Though it is challenging to trace readership of this *Journal*, the medical journal of surgeon Thomas Tappen of HMS *Arab* (West Indies, 1800) specifically referenced

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[57] James Carmichael Smyth, *An Account of the Experiment Made at the Desire of the Lord Commissioners of the Admiralty on Board the Union Hospital Ship to Determine the Effects of Nitrous Acid in Destroying Contagion* (London: J. Johnston, 1796); James Carmichael Smyth, *The Effect of the Nitrous Vapour in Preventing and Destroying Contagion* (Philadelphia: Thomas Dobson, 1799).
[58] TNA, ADM 101/110/4B, f. 16, HMS *La Nymphe*, 1797–1798; TNA, ADM 101/91/1, f. 26, HMS *Bittern*, 1798; TNA, ADM 101/124/1A, f. 35, HMS *Vanguard*, 1797–1798; TNA, ADM 101/93/2A, f. 27, HMS *Captain*, 1797.
[59] TNA, ADM 101/110/4B, f. 11, f. 14, f. 16, f. 21, HMS *La Nymphe*, 1797–1798.
[60] TNA, ADM 101/93/2A, f. 27, HMS *Captain*, 1797.
[61] TNA, ADM 101/93/2C, f. 17, HMS *Captain*, 1798.
[62] Trotter, 'On Nitrous Fumigation', *Med Phys J.* 3, n. 14 (Apr 1800): 321.

articles that he had read on fumigation which 'he observed to be of excellent advice'.[63] Given the lack of detailed guidance in the Admiralty's *Regulations* and the impracticalities of quick turnarounds times for full-scale medical books, the *Journal* provided an alternate vehicle for communication among naval practitioners outside of the established means. As a monthly periodical, the *Journal* also ensured that these communications could be quickly disseminated. Along with reading the *Journal*, naval surgeons also disseminated their findings there, suggesting this was an established method of communication outside of the naval bureaucracy; this will be discussed in chapter four.

In his warning against nitrous fumigation in the *Journal*, Trotter explained that he believed it was 'a solemn duty on my part, to guard officers against confidence in any *preventative* that is in danger of attracting their attention from *means of safety* that have received the sanction of experience'.[64] Trotter did not want the Navy to rely on new chemical theories of uncertain effectiveness in lieu of the time-vouched efficacy of ventilation and cleanliness as a form of prevention. Chemistry was increasingly being used in medicine by the end of the eighteenth century as a result of the 'chemical revolution', initiated by Joseph Priestley (1733–1804) and Antoine Lavoisier (1743–1794).[65] While Trotter took no issue with chemistry as field of inquiry and clearly had a competent knowledge on the subject, he argued that there was no proof that the burning of 'nitric acid, converted into vapour, yields oxygen'.[66] Instead, he argued that nitrous fumigation was merely the 'miserable picture of medical fashion', and he claimed that it was no more proven than fumigation practices of sulphur, pine, and other materials, which he labelled as 'necromancy' and 'a relic of a barbarous and superstitious age'.[67]

Trotter's warning did not go undisputed. In series of letters published in the *Journal*, Trotter engaged in a dispute with a civilian physician, Dr. Yeats, who published in favour of the practice due to its ability to produce oxygen. In a reply to Dr. Yeats,

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[63] TNA, ADM 101/85/4A, f. 21, HMS *Arab*, 1799–1800.
[64] Trotter, 'On Nitrous Fumigation', 323. Emphasis in original text.
[65] The employment of chemical reactions for the benefit of health became increasingly popular at the end of the eighteenth century, such as Dr. Beddoes' development of nitrous oxygen, or laughing gas, as a therapeutic measure. Jan Golinsky, *Science as Public Culture: Chemistry, Britain, and the Enlightenment, 1760–1820* (Cambridge: Cambridge University Press, 1992), 153-187.
[66] Trotter, 'On Nitrous Fumigation', 323.
[67] Thomas Trotter, 'On the Means of Destroying Contagion', *Med Phys J.* 3, n. 13 (Mar 1800): 246, 247 and Trotter, 'On Nitrous Fumigation', 322.

Trotter suggested that, if oxygen was needed in the air against contagion, there was a far simpler and more effective measure: 'by opening a window [Yeats] can have it abundance'—ventilation, not fumigation, was the answer.[68]

Trotter's interventions may explain why the journals have fewer mentions of nitric acid after 1800, but he did not persuade surgeons to abandon fumigation entirely. In 1804–1805, HMS *Amelia* was fumigated with a mixture of tobacco and sulphur, reverting to Lind's recommendation.[69] While stationed in the North Sea in 1809–1810, the surgeon of HMS *Pandora* keep the between decks dry 'by hanging swinging stoves, and twice every week some devils made of powder, sulphur and camphor were burnt so as to smoke the ship'.[70] The surgeon of HMS *Abercrombie* preferred to use a mix of manganese and sulphuric acid in 1809: 'this in my opinion is an excellent method of fumigating as it gives out pure oxygen, and by that means renders the foul air that may be collected on the orlop or elsewhere fit for respiration'. However, he added cautiously, 'whither it has any specific effect in removing contagion is a matter of doubt with me'.[71] While the specific mixtures may have shifted from nitric acid in the final years of the eighteenth century to mixtures of sulphur in the first decade of the nineteenth century, fumigation as a practice persisted. Both the surgeon of the *Captain* in 1798 and the surgeon of *the Abercrombie* a decade later expressed doubts about its medical effectiveness of purifying the air to prevent contagion, but both agreed that sweet relief from the ship's damp sickly stench was reason enough to continue the practice—an entirely understandable and practical reason, despite Trotter's protestations.

Contagion: When Prevention Fails

When disease did take hold, surgeons were forced to react within the constraints of the ship space. When the *Princess Royal* was struck with an infectious outbreak in the Channel Service (1801–1802), the medical space of the ship had to be redesigned to sequester the patients.[72] Ben Lara moved the contagious, feverish patients to two improvised sick berths in the forecastle and those without fevers were kept in the

[68] Thomas Trotter, 'In Reply to Dr. Yeats', *Med Phys J.* 3, n. 16 (Jun 1800): 527.
[69] TNA, ADM 101/85/1, f. 26, HMS *Amelia*, 1804–1805.
[70] TNA, ADM 101/112/2B, [general remarks], HMS *Pandora*, 1809–1810.
[71] TNA, ADM 101/80/1A, f. 6, HMS *Abercrombie*, 1809.
[72] TNA, ADM 101/115/3A, f. 47-48, HMS *Princess Royal*, 1801–1802.

cockpit. Each zone had its own assistants and separate utensils to reduce spread; visitors into the berths were forbidden. Special attention was given to the bedding, linens, and hammocks of the sick, which were frequently washed and aerated; the wooden beams of the sick berth were frequently scraped and washed with vinegar. Spit pots and bed pans were removed immediately after use and no washing or cooking took place in the sick berths themselves. Whenever possible, the ports were opened to ventilate the space, otherwise stoves were used to fumigate. Surgeon Lara managed to create a small floating hospital with sequestered units for infection control, and clearly was given the freedom to do so by the captain.

However, not all surgeons were given the support to effect preventative measures. The unfortunate scene aboard HMS *Saturn* indicates the limitations of the surgeon to institute prevention without the support of the captain. While anchored at Cawsand Bay outside Plymouth for a partial refit in 1799, the ship's crew succumbed to a serious outbreak of fever in which the surgeon, William Johnston, attributed to 'excessive intoxication and other irregularities'.[73] Between two and three hundred women were allowed on ship, and the crew developed the habit of indulging in vast quantities of gin, which they called 'Cawsand Water'. When notice was given that the French Fleet was at sea, the officers and men frantically tried to get the ship ready, but the 'system of inebriety' caused further disorder. The surgeon recounted the 'highly putrefied state' of the ship, and the 'woeful scene' on the orlop deck, which was 'overflowing with urine from the beastly irregularities of some of its inhabitants'.

Johnston repeatedly emphasised that the ship had not been fully cleaned or washed by the crew while at Cawsand Bay, a duty that it fell to the captain to enforce. Johnston attempted everything in terms of 'prophylactics' or preventatives: he separated the sick, washed them and provided them with fresh clothing, washed the sick berth, and ensured that soup with beef and vegetables was made every day. Johnston even called upon the military hospital at Plymouth to wash the sick's blankets. Eventually the whole ship was cleaned and washed, and he set up stoves and fumigated with nitrous gas. However, he explained that this was only done nearly a month after their arrival and once the infection had fully taken hold of the ship. The situation only came under control after weeks of fevers when the captain banned spirits

[73] TNA, ADM 101/119/5, f. 35-36, HMS *Saturn*, 1799.

from being brought on board and drunkenness was systematically punished. The frantic account provided by Johnston underscores how these scenes of disorder put extreme pressure on the surgeon to carry out his duty to treat patients, prevent contagion, and account for the disease burden of the ship.

Ensuring health and order in the ship œconomy was a primary concern for the Navy, but, on some occasions, the surgeons' task must have felt insurmountable within his limited jurisdiction. In his account, Johnston was cautious in assigning blame; his measured approach may have been toeing a fine line between providing an account for the contagion that occurred on his watch without burning any bridges—surgeons often relied on positive character references from their captains.[74] Instead, Johnston focused on the crews' consumption of alcohol and the ensuing contagion, making only offhand comments about the captain allowing so many women on board, not enforcing regular standards of cleanliness, and taking weeks to ban liquor. At his most critical, Johnston expressed the difficulties of convincing the captain to enforce measures of cleanliness, a task with the strongest consequences for his own jurisdiction: 'it was with the greatest difficulty I could persuade the captain to order the ships company to put on two shirts in the week'. This battle between the surgeon's medical authority and the captain's jurisdiction highlights the tensions that could exist on board where these spheres of authority overlapped.

A final case exemplifies the limits of preventative medicine for completely unprecedented reasons: when contagion coincided with collective mutiny. This was the case when an outbreak of typhus took place during the Great Mutinies of 1797.[75] HMS *La Nymphe* was stationed off Spithead in April when the crew began succumbing to typhus around the 20 April 1797. The surgeon, Benjamin Fonseca Outram, suspected the disease had been communicated from a recent accrual of prisoners of war from French ships, and he attempted to sequester the patients in the sick berth, which was located on the half deck. He initiated all possible preventative measures, including fumigation with nitrous acid, and was especially grateful to the officers 'who pay the utmost attention to the ventilating and drying of the ship'.[76] Despite these

[74] Admiralty, *Regulations and Instructions Relating to His Majesty's Service at Sea* (London: 1787), 216.
[75] G. E. Manwaring and Bonamy Dobrée, *The Floating Republic* (London: Frank Cass & Co. Ltd., 1966); Ann Veronica Coats and Philip MacDougall, eds., *The Naval Mutinies of 1797: Unity and Perseverance*; James Davey, *Tempest: The Royal Navy and the Age of Revolutions* (New Haven, CT: Yale University Press, 2023).
[76] TNA, ADM 101/110/4B, f. 12-13, 16, HMS *La Nymphe*, 1797–1798.

measures, it became clear on the 30 April that the afflicted patients needed to be sent to hospital to prevent 'further mischief of the contagion' on recommendation of 'the physicians of the Hospital at Haslar'. Outram noted in the margins of his journal:

> I am however prevented by the determination of the people denominated delegates not to suffer anyone to be sent, whose life is not in absolute danger—from supposition that their force may be weakened by so considerable a number being removed from the ship and that their return to duty and obedience, may from such circumstance be more easily enforced by the officers.[77]

The 'denominated delegates' at the Spithead Mutiny were thirty-three elected leaders, all skilled seamen, who met together on the *Queen Charlotte* to compose petitions of their grievances.[78] The delegates' concerns highlighted the precarious and tenuous control that mutineers held over the ship during this collective action. Keeping the feverish sailors on ship despite the possibility that the illness may spread further was a gamble to ensure that the officers were not able to reassert control over the ship. Outram was forced to adhere to the delegates' demands since his patients were evidently not in danger of dying, though he noted in the margins: 'the agitations and anxieties prevailing in the minds of the people doubtless favours the progress of the fever'.[79]

On the 6 May, Outram was finally permitted to send the sick to hospital. He noted towards the end of the journal:

> Our ship has been for some time in a most unpleasant state of mutiny—the officers have lost their consequence and are disobeyed—of course the ordinary discipline of the ship is much neglected. The mutineers at first objected that so many of the men should be sent out of the ship, but at length consented when I pointed out the necessity of the measure, and the consequences that seemed likely to follow from the very sickly state of the ship.[80]

Outram's note sheds insight on how surgeons navigated a sense of disorder. Drawing an association between of the 'sickly state of the ship' and 'the unpleasant state of mutiny', Outram's note above was underscoring the direct correlation of order and discipline with ship health. This correlation was becoming increasingly common in

[77] TNA, ADM 101/110/4B, f. 21, HMS *La Nymphe*, 1797–1798.
[78] Ann Veronica Coats, 'The Delegates: A Radical Tradition', in *The Naval Mutinies of 1797*, 39-60.
[79] TNA, ADM 101/110/4B, f. 21-22, HMS *La Nymphe*, 1797–1798.
[80] TNA, ADM 101/110/4B, f. 25-26, HMS *La Nymphe*, 1797–1798.

military medicine in the latter half of the eighteenth century and will be explored in the next chapter.[81] As new models of disease stressed social environmental control, order and discipline certainly aided surgeons in managing ship health, but it would be unwise to overstate their individual authority in the establishment of order and discipline. Outram's mental and physical health deteriorated due to his lack of control: 'the anxiety of my mind and the fatigue I have lately suffered have affected my heath very materially', he noted at the end of his journal before taking a leave of absence.[82] At first glance, Outram's experience on *La Nymphe* seems to imply that his authority emerged from the maintenance of the ship's hierarchy. While Outram may personally have felt that the mutiny caused disorder, his medical authority was not materially circumscribed by the mutineers, who agreed to send the sick to hospital when Outram convinced them of the 'the necessity of the measure'.

As this section has illustrated, surgeons' jurisdictional control over ship-wide hygiene was tenuous and most frequently facilitated by collaboration with the captain and officers. Captains were in charge of providing suitable clothing to the crew and ensuring that ship-wide fumigation and washing was undertaken. Surgeons did not have managerial control over hygiene, and instead played an advisory role in these hygienic measures and were further aided by the officers to administer responsibility for these tasks among the crew. The surgeon's medical control over the ship space rested on how well received his medical expertise was among his colleagues—whether his captain or a collective delegation of seamen. For example, the captain of *Princess Royal* gave Ben Lara the liberty to redesign the ship space to better manage a contagious outbreak, but Johnston's case from the *Saturn* reveals an instance in which both captain and crew ignored his medical advice, thus limiting his medical control. In contrast, Outram's authority on *La Nymphe* came from his ability to negotiate health management with entirely different stakeholders in the ship œconomy. In other words, the surgeons' ability to effectively manage ship health was defined by these working relationships and how this enabled them to respond in times of crisis.

[81] Charters, *Disease, War and the Imperial State*; Lawrence, 'Disciplining Disease', 92-98.
[82] TNA, ADM 101/110/4B, f. 26, HMS *La Nymphe*, 1797–1798.

Provisioning the Ship Œconomy

A diet filled with fresh meat, vegetables, and fruits was viewed by contemporary medical practitioners as especially beneficial in maintaining health and preventing disease, but there were significant constraints on supplying and storing fresh goods for an entire fleet. To avoid spoilage and putrefaction, ship provisioning often resorted to dried goods, salt provisions, and alcohol, particularly for long voyages at sea. The seaman's regular diet largely consisted of salted meat, bread, butter, dried peas, and oatmeal, though substitutions were made in different regions when these items were unavailable abroad. Captains and officers had better provisions allotted to them due to their status, with live sheep, goats, and hens kept on ship at their disposal.[83] They would occasionally share this fresh meat with the sick, but this was only a responsive measure at their own discretion. Nearer to the shore or home station, fresh meat and vegetables could be more easily acquired for the crew, but during long voyages at sea, the exclusive consumption of processed and preserved goods were seen to lead to a variety of health concerns.

The Sick and Hurt Board's efforts to cure and prevent scurvy through systematic provisioning of citrus juices in the years around 1800 has been viewed by scholars as a defining moment in the improvement of ship health.[84] While scurvy rates certainly appeared to decline, the surgeons' journals reveal a sustained concern for provisioning fresh meat and vegetables to improve general health throughout the wars.[85] This section explores the conditions underlying this continued focus on diet and provisioning among surgeons and how they used their journals to communicate these concerns with the Board. First, I examine how most surgeons dealt with provisioning concerns within the established system; second, I turn to some enterprising surgeons who proposed new provisioning systems more suitable to their needs.

Negotiating within the System

Even though a fresh diet was seen by surgeons and physicians alike as the most significant means of preserving the health of all the men on board, provisioning fell

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[83] Lloyd and Coulter, *Medicine and the Navy*, v. 3, 81-93.
[84] Brian Vale, 'The Conquest of Scurvy, 1793–1800', *Mariner's Mirror* 94 (2008): 160-175; Knight and Wilcox, *Sustaining the Fleet*, 65; Lawrence, 'Disciplining Disease'.
[85] On declining scurvy rates, see: Risse, 'Britannia Rules the Seas'; Harrison, 'Scurvy on Sea and Land'.

under the purview of the Victualling Board, a subdivision of the Navy Board adjacent to the Sick and Hurt Board.[86] There were few changes to provisioning between 1731 and 1825, aside from the addition of citrus juice and portable soup (i.e. proto-stock cubes).[87] The Victualing Board maintained production and storage centres in the fleet's dockyards at Portsmouth, Plymouth, Deptford, Dover, and Chatham; however, most provisioning operated on a contract system where purchasing occurred through private contractors or commissioned agents.[88] At stations abroad, reliance on private contractors was the norm, though the Navy also frequently sent out processed provisions through regular convoys, notably salt meat to the East Indies.[89] On each ship, the purser was the liaison for victualing: he was to request standardised provisions, which were supplied by contracted agents in exchange for a receipt of contract fulfilment.[90] The purser was also in charge of purchasing what he deemed a suitable quantity of vegetables for the ship's voyage.[91] Historians view the provisioning systems as a success for its time, and given its global scope, while recognising that it was an imperfect system and liable to mismanagement and human error.[92]

Poor contracting and victualing could have devastating effects on the health of the crew. For example, the surgeon of HMS *Cleopatra* (1806) attributed the high number of cases of scurvy to poor provisioning at Bermuda due to a lack of cattle on the island, which forced the men to continue on salt meat rations for longer than anticipated.[93] Since the Victualing Board outsourced its contracts abroad, there was less flexibility for captains and pursers to adjust or renegotiate depending on local supply. Furthermore, a reliance on suppliers abroad also meant fewer opportunities for consistent quality control. Cases of dysentery often emerged in the journals when provisions were supplied in a less than ideal state, particularly contaminated drinking

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[86] The Victualling Board and the Sick and Hurt Board were eventually brought under the domain of the Transport Board in 1807.
[87] C. Lloyd, and J. L. S. Coulter, *Medicine and the Navy,* v. 4 (Edinburgh: Livingstone, 1963), 91; Knight and Wilcox, *Sustaining the Fleet*, 141.
[88] Knight and Wilcox, *Sustaining the Fleet*, 85-154.
[89] Knight and Wilcox, *Sustaining the Fleet*, 52, 55-58, 132; Martin Wilcox, "'This Great Complex Concern": Victualling the Royal Navy on the East Indies Station, 1780–1815', *The Mariner's Mirror* 97, n. 2 (2013): 32-48.
[90] Wilcox, "'This Great Complex Concern'", 38-39.
[91] Admiralty, *Regulations and Instructions* (1808), 271-272; Lloyd and Coulter, *Medicine and the Navy* v. 3, 81.
[92] The overall positive view painted in Knight and Wilcox's *Sustaining the Fleet* is not universal, see MacDonald, *The British Navy's Victualling Board.*
[93] TNA, ADM 101/94/1, f. 18-20, HMS *Cleopatra*, 1805–1806.

water.[94] In 1796 in the West Indies, the HMS *Abergavenny* relied on a French baker at Port au Prince to supply bread to the troops; however, it was later found out that the baker put arsenic in the bread supplied to the ship, to which the surgeon attributed the subsequent high number of cases of dysentery. The baker was shot, and presumably the Victualling Board learned not to allocate provisions and supplies to enemy sympathisers at the height of war.[95] The reliance on a contractor and supplier abroad sympathetic to the enemy resulted in a significant medical crisis.

Though surgeons would appear to be key stakeholders in dietary provisioning due to its correlation with health, they did not have any purchasing power. The only area in which surgeons held some control was in managing the diet of sick patients. This included a reduction of salt provisions in favour of gruel, porridges, and portable soup. At the surgeon's discretion, wine could be served to the sick in lieu of beer or liquor, as it was viewed to have restorative properties, but this required approval from the captain and accountability to the purser.[96] Over ship-wide diet, the surgeon's control began to dwindle, but he was called upon to offer his medical expertise when necessary. When supplies ran low on long cruises, surgeons were tasked with inspecting patients who were especially prone to scurvy to create a list for the captain 'in order that he may give direction for their being supplied in preference' under the purser's charge.[97] The surgeon was also to indicate to the captain those men 'who stand the most in need of refreshment', so that they could be provided any fish caught while at sea.[98] The same preferential treatment for the sick existed with regards to 'fresh provisions', which would be first allocated to the sick with the approval of the captain.[99] Thus, surgeons largely relied on their pleas being heard by generous captains to help address gaps in provisioning.

The journals highlight how surgeons relied on the ship's captain during times of medical necessity. Serving along the coast from Nova Scotia to the Bahamas from 1793 to 1795, surgeon James Sawers of HMS *Thetis* applauded 'the humanity and

[94] TNA, ADM 101/121/3, f. 39, HMS *Swiftsure*, 1798–1799; TNA, ADM 101/112/2B, [general remarks], HMS *Pandora* 1809–1810.
[95] TNA, ADM 101/80/2A, f. 36, HMS *Abergavenny*, 1796–1797.
[96] Admiralty, *Regulations and Instructions* (1808), 271-272.
[97] Admiralty, *Regulations and Instructions* (1808), 273-274.
[98] Admiralty, *Regulations and Instructions* (1808), 272.
[99] Admiralty, *Regulations and Instructions* (1808), 272-273.

attention shown by Captain Cochrane to the sick on board'.[100] The captain sent wine and fresh provisions from his own table to the sick berth every day, and the captain frequently procured sheep or fowl on shore when beef could not be secured. While HMS *Swiftsure* was largely cruising in the Mediterranean from 1797–1798, surgeon James Dalziel took special note of 'the kindness of Captain Hallowell (whose attention to and support of the sick exceeded anything [he] ha[d] ever met with)'.[101] The captain ensured that tea, broth, and a portable soup, with either mutton or fowl, was provided for the sick every day, despite the fact that, typically, 'no sheep were ever taken to sea for the use of the sick'.[102] The captain also ensured an extra supply of lemons in the provisioning, which permitted surgeon Dalziel to provide five to six lemons a day to those with ulcers, which 'contributed much to their recovery'.[103] In both these cases, the captain's generosity, especially concerning the supply of fresh meat, was considered definitive in the surgeon's ability to help the sick under his care.

Fresh fruit and vegetables were considered equally important, especially in the East Indies, which did not have a regular supply of citrus juices.[104] When HMS *Daedalus* was cruising around the East Indies in 1802, Peter Henry regularly petitioned the captain to stock fresh goods whenever possible due to a limited supply of lime juice.[105] In one marginal remark, Henry described the 'pineapples, binanas [sic], pumpkins, yams and various kind of greens' the captain was able to purchase on shore.[106] In his general remarks, Henry credited the 'unlimited supply of fruits and vegetables' and the 'porter and spruce [beer] liberally given by Captain Waller' for the good health of the crew.[107] Similarly John Collum of the *Terpsichore* (East Indies, 1802–1804), described, in the marginal remarks of his journal, his efforts to convince Captain Bathurst to prioritise a better-provisioned ship at Madras (**Figure 8**). Collum was rewarded in his efforts when the case load of scurvy dropped after Madras. The ship's captain 'appeared so well convinced that he was pleased to direct a preventative supplementary supply of fruit, vegetables, etc. for the crew' in the reprovisioning of the ship for the

[100] TNA, ADM 101/123/3, [general remarks], HMS *Thetis*, 1793–1795.
[101] TNA, ADM 101/121/3A, f. 34, HMS *Swiftsure*, 1797–1798.
[102] TNA, ADM 101/121/3A, f. 35, HMS *Swiftsure*, 1797–1798.
[103] TNA, ADM 101/121/3A, f. 34, HMS *Swiftsure*, 1797–1798.
[104] Wilcox, "'This Great Complex Concern'".
[105] TNA, ADM 101/96/1, f. 16, 21, 22, HMS *Daedalus*, 1802.
[106] TNA, ADM 101/96/1, f. 37, HMS *Daedalus*, 1802.
[107] TNA, ADM 101/96/1, f. 47-48, HMS *Daedalus*, 1802.

next leg of the journey.[108] In the general remarks, Collum noted that the captain had given '20 dollars of his own pocket' at Madras for fruits and vegetables.[109] These episodes highlights the benefit of having an amenable captain who was prepared to listen to the surgeon and prioritise the provisioning of fresh goods for the health of the whole ship.

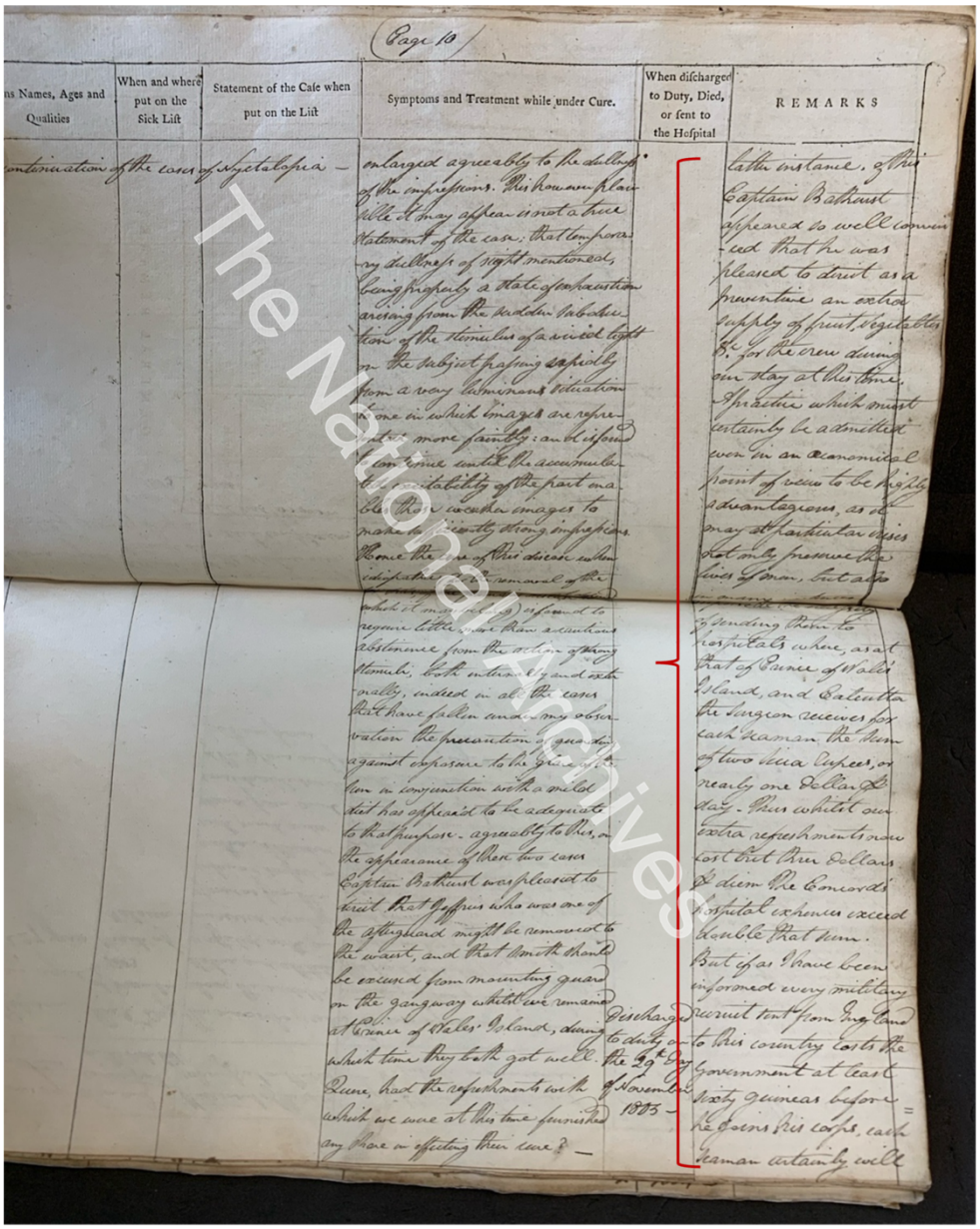

Figure 8. TNA, ADM 101/122/4 [journal 4], HMS *Terpsichore*, 1803–1804. Reproduced with the permission of The National Archives.

[108] TNA, ADM 101/122/4, [journal 4], f. 10-12, HMS *Terpsichore*, 1803–1804.
[109] TNA, ADM 101/122/4, [journal 1], f. 28, HMS *Terpsichore*, 1802–1803.

In some cases, captains were less amenable to surgeons' requests. On an especially long, nine-month voyage from Spithead to China in 1804–1805, the crew of HMS *Athenien* suffered from an 'epidemic of colic' after traveling around the Cape of Good Hope, leading to 173 cases; this was followed by 115 cases of flux, 80 cases of fever, and 87 cases of scurvy on the journal's final ledger.[110] The surgeon of the *Athenien*, William Hamilton, 'represented to the captain the great good a liberal supply of fruit and vegetables would be to the ship's company' but the plea went unheard.[111] He recorded his request and the captain's refusal in the general remarks of his journal in an effort to exculpate himself from blame. The surgeon had done his duty to advocate for the needs of the seamen but was blocked by his own captain.

Surgeons could also call upon their own medical superiors for help securing provisioning when the normal systems were insufficient. When *La Nymphe* ran out of supplies in the Channel Service, Benjamin Fonseca Outram wrote directly to the Sick and Hurt Board and to the Physician of the Fleet, Thomas Trotter. At the bottom of the page for 7 January 1797, Outram notes: 'applied this day to Dr. Trotter, and received by his order, cabbages, potatoes, and onions, from the Agent Victualler at Portsmouth, the quantity usually supplied for six servings, but given to us all together on account of our sailing today on a long cruise'.[112] He also noted that he received bottles of medicine from Haslar. It is difficult to extrapolate from this one instance how common it was for surgeons to circumvent standard Victualing Board practices and solicit the aid of the Physician of the Fleet, but the expanding jurisdiction of the medical offices is visible in this interaction.

However, even when the medical bureaucracy was willing, practical logistics could intervene. Alongside this restocking, Outram also 'received a letter from the Honourable Board of Sick and Hurt, in answer to [his] requesting a supply of lemon juice'; though the Board 'had ordered [him] a supply from Haslar [...] it could not be procured' because the ship was 'ordered to get underweight' for departure.[113] Despite the clear evidence that lemon juice provided a direct benefit to the health of the men aboard ship, its supply was cut to ensure that the ship was ready to sail during a time

[110] TNA, ADM 101/88/1, f. 34, HMS *Athenien*, 1804–1805.
[111] TNA, ADM 101/88/1, f. 34, HMS *Athenien*, 1804–1805.
[112] TNA, ADM 101/110/4A, f. 10, HMS *La Nymphe*, 1796–1797.
[113] TNA, ADM 101/110/4A, f. 11, HMS *La Nymphe*, 1796–1797.

of war. While surgeons may have been able to circumvent the purser and the Victualling Board, they were unable to supersede the military high command whose primary concern was ensuring a mobile fleet ready to engage when necessary.

The surgeons in all the above cases made a point of highlighting disruptions to provisioning, and the ways they navigated these issues, in their journals. Surgeons did not have control over ship provisioning outside of distributing certain types of food to the sick under their direct care, but they were given scope to use their medical expertise to advocate for the dietary needs of the sick. However, this relied on a positive relationship with their captain and him taking their petitions seriously. As described in the examples above, some captains, such as Cochrane of the *Thetis*, Hallowell of *Swiftsure*, and Waller of *Daedalus*, responded positively to the surgeons' requests. However, as with the case on the *Athenian*, some captains did not act on the requests of their surgeons. In these instances, surgeons used their journals to exempt themselves from blame and explain that their negotiations fell on deaf ears. As was the case with hygiene, positive and mutually beneficial working relationships within the ship were vital. In rare cases, surgeons appeared to bypass the ship hierarchy entirely and solicit aid from the medical bureaucracy directly, as was the case with Outram on *La Nymphe*.

The paternalistic care of ship captains was seen to have a profound effect on the morale and health of the ship. Such a system, however, relied on personal and decentralised decision-making, seemingly at odds with a burgeoning state bureaucracy concerned with systemising practice. Historians have demonstrated that the system managed by the Victualling Board appeared to work quite effectively. However, the reality of medical practice on ship was that centralised bureaucratic control and the application of a universalised programme could only get so far when taking into account the various complexities of provisioning an entire fleet across the globe. The precarious and mobile nature of military units around the world afforded little leniency when systems of provisioning failed. Within those margins of error, the maintenance of health relied on individual interference and decision-making within the ship œconomy.

The surgeons' journals reveal who interceded and how—surgeons could make their cases to captains to increase the quantity of fresh food or citrus juice, but how

the captains responded was outside of the surgeon's control. Paraphrasing a line from Thomas Trotter's *Medicina Nautica*, John Collum wrote in his journal: 'the fatherly care of a commander may therefore with strictest propriety be accounted the seamen's best physician'.[114] While Trotter was implying that all ship captains should have a copy of Lind and Blane's works—and presumably his own *Medicina Nautica*—to consult on board, Collum extended this medical expertise to himself and his peers who cared directly for the seamen within the ship œconomy.

Reforming the System

Some enterprising surgeons took it upon themselves to suggest alterations to the system or creatively navigate provisioning issues in different ways. The following section explores three cases of surgeons who were all responding to the same concern: a lack of fresh produce on ship. These surgeons used their journal to suggest entirely new systems of victualing management better suited to the realities of medical practice on ship. Some proposed more radical changes, suggesting de-centralised operations, while others suggested minor alterations to the centralised system, but they all used their medical expertise to advocate for systemic change to the provisioning system to improve health outcomes. In doing so, they were inserting themselves as stakeholders in these discussions within the naval bureaucracy and expanding the medical authority previously ascribed to surgeons.

Returning to HMS *Terpsichore,* the surgeon and occasional baker John Collum concluded his set of four journals for his service (1802–1804) with robust general remarks supplemented with financial, administrative, and medical concerns and queries. A common format among many of the journals, Collum stylised each of his general remarks as essays 'to the Honourable Board' and signed off with a polite: 'I have the satisfaction to remain with much respect, Honourable Gentlemen, Your obliged humble servant, John Collum'.[115] The general remarks of his first journal spanned ten pages and were stylised as an essay, containing supporting evidence and citations, clearly leading to an argument. The general remarks of his fourth journal contained a list of fourteen observations about providing medical care in the East

[114] TNA, ADM 101/122/3, [journal 1], f. 28, HMS *Terpsichore*, 1803–1804. Collum was quoting Trotter's *Medicina Nautica*, v. 1, 457.
[115] TNA, ADM 101/122/4, [journal 1], f. 28, HMS *Terpsichore*, 1802–1803.

Indies.[116] This not only suggests that surgeons fully expected the board to read these remarks, but that this space within the journal was habitually used as a venue to communicate directly with the Board, either to present complaints or suggest changes to the medical offices.

At the end of the first journal in the set (part one of June 1802 to June 1803), Collum devoted five pages to discussing the higher rate of scurvy in the East Indies, which he sought to compare to the home station.[117] Collum initially integrated theories of acclimatisation in his analysis. He claimed that scurvy was less prevalent among seamen in northern, temperate climates, despite the 'chilling damps, hazy atmosphere, and greater vicissitudes of temperatures', because 'the constitutions of Britons' were already 'accustomed to such vicissitudes of season'. Further, he argued that 'the baneful effects of humidity are wholly counteracted' due to the 'improved state of discipline throughout our Navy', by which he was referring to stricter adherence to preventative measures such as ventilation and fumigation within the ship space.[118] Thus, while temperate climates could be harmful to health, their effects were mitigated by good hygiene and the acclimated constitutions of British seamen.

Though climate theory was a popular explanation for why scurvy was so prevalent in tropical climates due to theories of putrefaction, Collum disagreed with this rationale. He used accounts of disease from India to dispute a climate-based reason for the prevalence of scurvy in the East Indies. He offered no explanation for how he came across these accounts, but it is likely they were composed by East India Company or Army practitioners at local hospitals on shore.[119] 'If we may give credit to the accounts of those gentlemen who have exercised the medical procession for a number of years on shore' and 'are best acquainted with the diseases and nature of both climates', the main diseases in India were: hepatitis, attributed to sun exposure and overindulgence of 'intoxicating liquors'; dysentery, which only emerged in situations of overcrowding; and fevers due to 'exposure to marsh effluvia or a similar morbid cause'. By contrast, scurvy was, until recently, 'a much smaller list than we generally meet with on home stations'. From his readings, Collum understood 'India to be, if

[116] TNA, ADM 101/122/4, [journal 4], f. 41-42, HMS *Terpsichore*, 1803–1804.
[117] TNA, ADM 101/122/4, [journal 1], f. 23-28, HMS *Terpsichore*, 1802–1803.
[118] TNA, ADM 101/122/4, [journal 1], f. 24, HMS *Terpsichore*, 1802–1803.
[119] Harrison, *Medicine in an Age of Commerce and Empire*.

not more healthy, at least burdened with a much smaller catalogue of diseases than are to be met with in Europe'.[120] As a consequence, he concluded the rise in scurvy on naval ships in the East Indies could not be an issue of climate.

Instead, Collum argued that the 'the difference of diet' was the culprit.[121] Providing evidence in the form of annexed bills of fare from both British (home) and East Indies stations, Collum outlined the allowances given to one seaman stationed in British ports compared to the East Indies. Provisioning from British ports included fresh beef, which was replaced with salted pork and peas while at sea. However, this sea provisioning was mitigated by 'the regular payment of His Majesty's Ships on home stations' alongside frequent visits to shore, 'whereby the sailor is enabled to provide himself with a number of the choicest of those excellent and herbaceous articles so abundant on the shores of the United Isles'. Further, the regular provisioning of 'Citric Acid' or citrus fruits from British ports reduced the rate of scurvy around the home station—a practice not replicated in the East Indies due to high production and transport costs.[122] The uniqueness of the East Indies station as an antipodal station placed special pressures on these surgeons for provisioning due to a reliance on private contractors supplying from local markets rather that the standardised naval fare in British ports.[123] This explains why Collum of the *Terpsichore* and Henry of *Daedalus*, as described in the previous section, struggled with securing a supply of citrus juices in the East Indies.

Collum's commentary on the provisioning of the East Indies station was as scathing as it was filled with humour. He noted: 'I cannot with equal justice afford any testimony to the highly nutritive and invigorative qualities of every species of Indian diet'.[124] Collum found the local flour wholly lacking, which affected the 'bread and biscuits' served as a staple on board. This very complaint was what led him to experiment with different ingredients and bake bread rolls on ship as described at the opening of this chapter. Despite his best efforts, he found the bread 'ponderous as lead'. 'The proof of the pudding according to the common adage being the eating of

[120] TNA, ADM 101/122/4, [journal 1], f. 25, HMS *Terpsichore*, 1802–1803.
[121] TNA, ADM 101/122/4, [journal 1], f. 25, HMS *Terpsichore*, 1802–1803.
[122] TNA, ADM 101/122/4, [journal 1], f. 23-25, HMS *Terpsichore*, 1802–1803; TNA, ADM 101/122/3, [journal 3], f. 10, HMS *Terpsichore*, 1803–1804.
[123] Wilcox, "'This Great Complex Concern'".
[124] TNA, ADM 101/122/4, [journal 1], f. 26, HMS *Terpsichore*, 1802–1803.

it', and Collum was less than impressed. Collum also believed that the meat was of inferior quality as 'it is necessary to commit it to the boilers a few hours after being killed' in order for it to be edible. Even with such long cooking times, he found the 'obstinate resistance' of the beef utterly insusceptible 'to the most violent and well directed efforts of the powers of manducation'—a fact from which he inferred it was 'equally unconquerable by the action of the digestive organs'. This critique on beef was followed by numerous references to the nourishing effect of the fat on beef, which he found he wholly lacking in the beef supplied from India. In short, Collum noted with patriotic chagrin, the beef 'falls much short of English Roast Beef'.

Collum also complained about the other features of East Indies provisioning he found lacking, namely the deficiencies in 'oatmeal, molasses, beer, butter, and cheese' and even vegetables which were less abundant and cheap than in Britain.[125] In a later journal, Collum explained that ships in India and the East Indies 'are not supplied with either oatmeal, raisins, molasses or portable soup', as those were only available nearer to home stations; thus, he claimed, in the East Indies, 'the diet of the sailor at sea must consist almost wholly of the necessaries in charge of the surgeon'.[126] When regular provisioning under the purser was deemed insufficient for health, diet became a medical issue managed by the surgeon, and we have already seen how Collum baked bread rolls, and at another point, he concocted his own lime juice from limes collected at Prince of Wales Island (Pulo Penang; modern Malaysia), where one of the station hospitals was located. He explained that he had made his own scurvy cure by straining and boiling the juice with one third its weight in sugar and then preserving it in kegs.[127] Collum was left to no other conclusion that to question 'is it wonderful [i.e. shocking] then that our crews are generally so infested with scurvy?'[128] The high rate of scurvy in the East Indies was argued by Collum to be a provisioning issue, not climate, and one worthy of medical investigation and administrative reform.

By the time he finished his fourth journal a year later (1803–1804), John Collum felt able to propose a new system for provisioning that he believed to have superior economic benefit for the Admiralty. As discussed in the previous section,

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125 TNA, ADM 101/122/4, [journal 1], f. 26, HMS *Terpsichore*, 1802–1803.
126 TNA, ADM 101/122/4, [journal 4], f. 9, HMS *Terpsichore*, 1803–1804.
127 TNA, ADM 101/122/3, [journal 3], f. 10, HMS *Terpsichore*, 1803–1804.
128 TNA, ADM 101/122/4, [journal 1], f. 26, HMS *Terpsichore*, 1802–1803.

Collum and his captain, Bathurst, had seen the positive effect on ship health of purchasing supplementary fruits and vegetables. Purchasing vegetables was a task typically under the discretion of the purser, though occasionally captains intervened retrospectively as described in the cases above. When captains interceded, they sometimes made these purchases out of the ship's allowance or out of the captain's own pocket, as was the case with Captain Bathurst on the *Terpsichore*.

Collum proposed expanding and standardising this practice, calculating that it would be more cost effective to the Navy than sending scorbutic patients to hospital when they were already ill. At the cost of only three dollars per day for an ample supply of fresh fruits and vegetables, they would avoid the need to send patients to hospital on Prince of Wales Island (Pulo Penang) or at Calcutta, which at the time cost 'nearly one dollar per day' for each seaman.[129] Such 'a practice which must certainly be admitted even in an œconomical point of view to be highly advantageous as it may at particular crises not only preserve the lives of men, but also in many instances supersede the necessity of sending them to hospitals'.[130] The hospitals in the East Indies operated by the East India Company and were frequently overburdened. Peter Henry of the *Daedalus* had also reported that his patients were turned away by the hospital surgeon due a lack of supplies and 'necessary refreshments'; instead, his captain was forced to pay for fresh produce at a higher market rate.[131]

Surgeons understood that finances lay at the heart of most decision-making in the Admiralty. Thus, to effectively advocate for change, surgeons often included financial plans in their requests to the Sick and Hurt Board. To support his case, Collum provided further financial argument: if 'every military recruitment from England to this country costs the government at least sixty guineas before he joins his corps', then the incentive should be to preserve their costly lives rather that treat them as expendable. Thus, if 'these seasonable extra supplies of refreshments' Collum had suggested served to 'preserve only the lives of four men […] and prevent but eight from being sent to hospital', then the government could reap serious long-term savings 'at the years end'. Such a plan, 'besides preserving many lives', would also be 'invaluable' in the 'remoteness of the station [East Indies]' where troops were needed

[129] TNA, ADM 101/122/4, [journal 4], f. 11, HMS *Terpsichore*, 1803–1804.
[130] TNA, ADM 101/122/4, [journal 4], f. 11, HMS *Terpsichore*, 1803–1804.
[131] TNA, ADM 101/96/1, f. 21, HMS *Daedalus*, 1802.

during the escalating war at hand.[132] Collum's cost-benefit analysis advocating for better provisioning underscores the reality of working within an increasingly bureaucratised fiscal-military state. Reform of the system would not occur just because it preserved lives; it also had to be fiscally viable or even better reduce costs for the government. Collum argued that 'Britain's best bulwark was her wooden walls', referring to the ships that sailed across the oceans that would become so central to the consolidation of the British Empire. Increased fresh provisions, therefore, was not only economically viable, but also a strategic military need—a logic that persisted from the Seven Years' War.[133]

Towards the end of the French Wars, citrus juices appear to have been better supplied on ships in the East Indies. However, some surgeons grew concerned that there was an over-reliance on preserved citrus juice. Aboard HMS *Hussar,* serving in the East Indies from 1812 to 1813, surgeon W.H. Banks noted: 'it is not intended to infer that the exhibition of daily doses of lime juice etc. is disapproved of […] but what is meant to be inferred is that we should in no instance wait for a disease to appear that we can positively prevent'. [134] Within the span of ten years, the Navy was clearly better at stocking its ships with citrus juices in the East Indies, but some naval surgeons began to fear the replacement of a full diet of fresh produce with a simple cure—a sentiment Banks shared with Trotter.[135]

This proposition contrasted with the increasingly universalised and centralised operations, proposed by the Sick and Hurt Board, which proposed citrus juices in lieu of fresh produce after the success of scurvy's near eradication in the Channel Fleet under St Vincent.[136] Though a regular supply of citrus juice was an effective method of prevention and significantly decreased the morbidity of scurvy in particular, some practitioners also expressed wariness that citrus juices would become a quick cure for one disease in lieu of a holistic assessment of general health. Banks suggested that 'in India when at times pumpkins are the only vegetables to be obtained for soup and succulent fruit ever is procurable and a liberal supply', these fresh items 'should be

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[132] TNA, ADM 101/122/4, [journal 4], f. 11-12, HMS *Terpsichore*, 1803–1804.
[133] Charters, *Disease, War, and the Imperial State.*
[134] TNA, ADM 101/104/6, f. 17, HMS *Hussar*, 1812–1813.
[135] Trotter, *Medicina Nautica*, v. 1, 128.
[136] N. A. M. Rodger, *Command of the Ocean: A Naval History of Britain, 1649–1815* (London: Penguin, 2004), 485.

ordered on the arrival of every ship in port'.[137] Banks wrote a plan in the general remarks of his journal to increase supply of fresh fruits and vegetables while in port. This plan focused on the natural produce of India that could be procured and distributed locally through a more decentralised operation.[138] A more local operation would also potentially mean greater control and oversight by the surgeon on location, outside of centralised systems.

Surgeons in the East Indies were not the only ones with new propositions of systemic change. In a final case, a surgeon off the coast of Brest proposed an unusual system of provisioning in his general remarks (**Figure 9**). Amid an outbreak of typhus fever in 1802, 'the want of fresh provision and good wine was sorely felt'. Surgeon Ben Lara devised a plan alongside the captain to stock HMS *Princess Royal* by pooling the money of all men on board:

> Every man in the ship was invited to form a fund by subscribing eighteen pence each, and to which was added thirty pounds, which had been found in the ship, and which no person owned. The whole sum was put into the hands of Captain Atkins who consented to be treasurer [and] with it purchased sheep, potatoes, flour, eggs, strong beer, cyder and port wine. These were put under my charge, gifted solely by my direction. To support the fund, the usual allowance of every person requiring fresh provisions[139] was stopped and paid for by the Purser, every three months.[140]

This episode invites more questions than it answers, but Ben Lara's journal remains painfully vague about the conditions that led to such a radical plan. The crew clearly found the allocated provisioning lacking, but their willingness to pay for supplementary provisions out of their own pocket is surprising and unique in the journals I have examined. Further, the purser's acceptance of this plan by re-routing of allocated funds undermined his own role and authority; it remains unclear whether he was forced to oblige or if he consented to this alteration due to the crisis. Occasional dissatisfaction with the Navy's provisioning system was perhaps inevitable, but the wholesale institution of this plan revealed how the members of the ship œconomy perceived diet and provisioning as vital to health management. Though provisioning was normally outside the scope of the surgeon's duties, on *Princess Royal* the surgeon was trusted with

[137] TNA, ADM 101/104/6, f. 17, HMS *Hussar*, 1812–1813.
[138] TNA, ADM 101/104/6, f. 30, HMS *Hussar*, 1812–1813.
[139] Presumably the sick but unclear.
[140] TNA, ADM 101/115/3A, f. 48, HMS *Princess Royal*, 1801–1802.

its management. By literally buying into this plan, the crew, captain, and purser deemed the medical officer to be the most suitable distributor of provisions during this time of crisis.

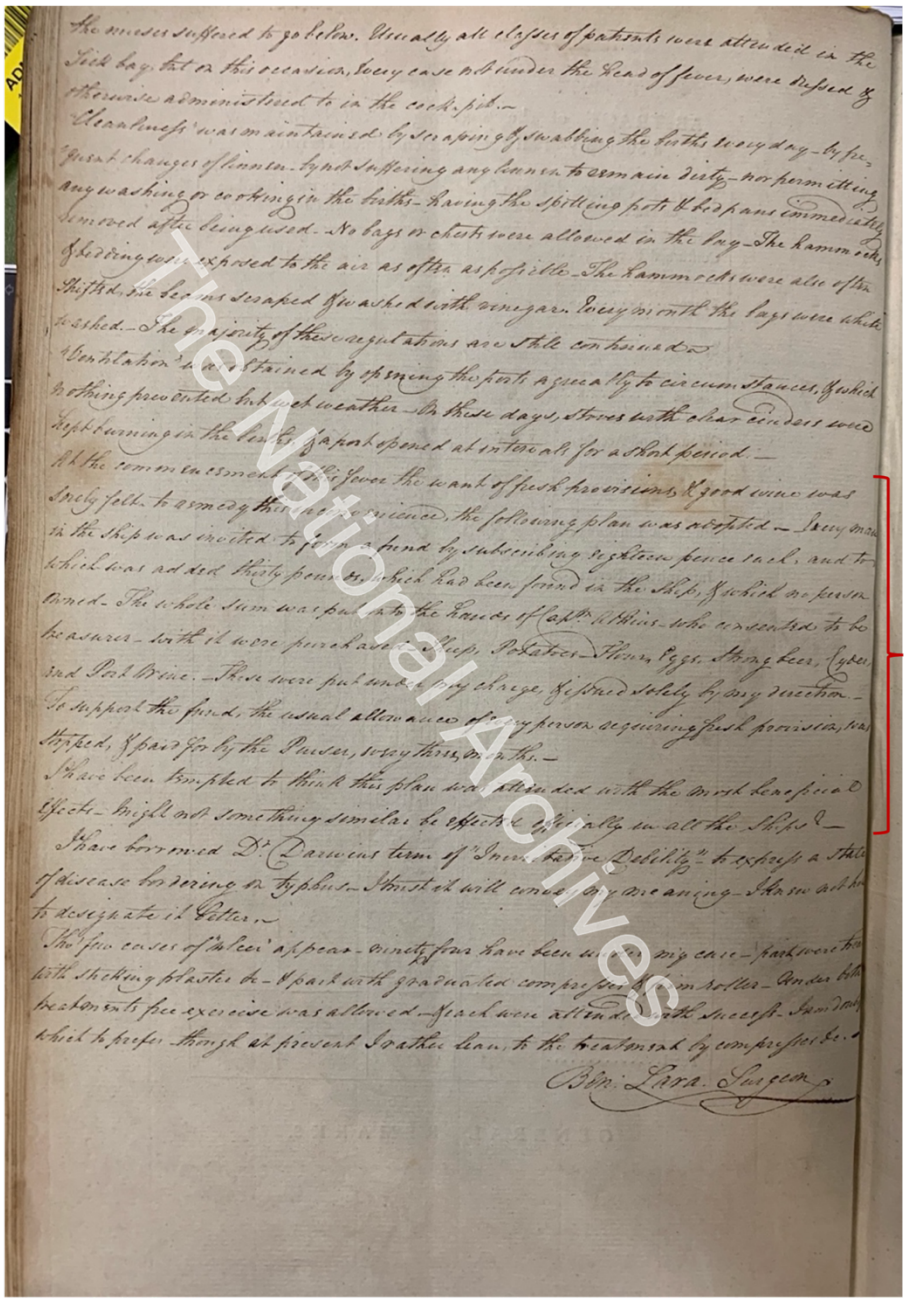

Figure 9. TNA, ADM 101/115/3A. General Remarks for HMS *Princess Royal*, 1801–1802. Reproduced with the permission of The National Archives.

Following his description of the new system, surgeon Lara commented on its 'most beneficial effects' and inquired: 'Might not something similar be effectual officially in all the ships?'[141] Here, Lara appeared to propose that authority for victualing and provisioning, including purchasing power, be redirected to the surgeon rather than the purser. It is unclear whether he meant for this to be an authority retained for times of crisis, such as an outbreak of contagion, or an entire overhaul of the victualing system. Nevertheless, the addition of this final remark displays a radical leap in the conceptualisation of the surgeon's position within the bureaucratic system of the Navy. Some surgeons were not just trying to improve the management of the current system, but also making claims of jurisdictional and system-wide alterations to increase their responsive capacities.

Collum, Banks, and Lara are closer to performing the managerial identity described by Christopher Lawrence, and the reformative medical identity present in British practice after 1815.[142] Their extensive 'remarks' show that they felt empowered to propose systemic changes, conceiving of their roles as vital to the functioning of the fleet. Rather than executors of prescriptive instructions, these surgeons cast themselves as managers of the ship œconomy whose practical experience, borne of their experiences on ship, merited consideration by the Sick and Hurt Board. A comparison of their propositions reveals similarities in their proposals. All three surgeons wanted greater access to fresh provisions, supplied locally, but they differed in their suggestions for how to achieve this. Collum encouraged increased funding and improved victualling within the current system, Banks argued for the benefits of a more decentralised victualing practice, while Lara proposed an expansion of the surgeons' jurisdiction, at least temporarily taking over the role of purser.

Their journals described the responsive of their practice whereby they identified systemic issues within the burgeoning state medical apparatus. It is difficult to trace how the bureaucracy responded to such proposals; certainly, none of the outlined plans came to fruition, nor were there any substantive changes to the provisioning system in the aftermath. However, it is significant that the surgeons made such attempts, and that a distinct group of enterprising surgeons viewed themselves as active stakeholders and cast themselves in these reforming roles, proposing new

[141] TNA, ADM 101/115/3A, f. 48, HMS *Princess Royal*, 1801–1802.
[142] Lawrence, 'Disciplining Disease'; Brown, *Performing Medicine*.

standards of practice—a theme that will continue in chapter four when we explore how surgeons participated in medical inquiry.

Conclusion

This chapter has demonstrated how naval surgeons positioned themselves in the management of ship health through an exploration of their purview over diet and hygiene—the two features that, in contemporary medical theories, were ascribed the greatest import in ensuring health. Historians have rightly noted that there was a trend for preserving the health of sailors and soldiers through a systematic and universalised system of medical care.[143] However, the authoritarian, top-down preventative policy argued by Christopher Lawrence was less totalising in practice.[144] While naval surgeons certainly demonstrated an awareness of preventative health measures and their benefits, they were not always granted the jurisdiction to act directly. Surgeons played an important negotiatory role using their medical expertise to advocate for the health of the crew with various stakeholders. Some surgeons certainly did push past standard jurisdictional boundaries and position themselves as 'preventative medical officers' or reformers, using their medical expertise to expand their authority over public health and ameliorate the system.[145]

Their surgeons' journals reveal how they negotiated this limited jurisdiction by using their medical expertise to advocate for prevention within the ship œconomy. The realities of practising medicine on a ship still required a flexible and reactive approach. This was in part due to the permeability and transiency of the ship itself, which created an unpredictable environment. In moments of crisis or disruption, the impracticalities and inflexibility of institutional systems of practice were exposed. At a time when the naval medical bureaucracy was undergoing significant changes to standardise and systematise medical practice, the surgeons' flexibility and creativity was a defining feature of their own professional role. Disruptions to provisioning or contagious outbreaks most frequently required that surgeons collaborate with their captains and

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143 Charters, *Disease, War, and the Imperial State*; Kelly, *War and the Militarization of British Army Medicine*; Alsop, 'Warfare and the Creation of British Imperial Medicine'.
144 Lawrence, 'Disciplining Disease', 92.
145 Lawrence, 'Disciplining Disease', 93, 97; Brown, *Performing Medicine*, 113-192.

colleagues to find new solutions within the ship œconomy—including requests for increased provisions, new clothing, or altering the spatial set up of the sick berth. Surgeons played this negotiating role, most frequently with the captain, because a culture of paternalism persisted through the French Wars, despite efforts towards rigid authoritarianism. In some cases, we see surgeons taking greater initiative in the management of ship health by engaging themselves directly with culinary experiments to improve diet or proposing new systems of provisioning that they felt more suitable to sustaining a healthy ship. However, health management required control not only over diet and hygiene, but also discipline. The next chapter will examine how surgeons responded to increased pressures from the naval bureaucracy to intervene in certain kinds of problematic behaviours.

3. Drunkenness, Discipline, and Deception: Identifying and Managing Problematic Behaviours

Serving in the Channel Service in 1797, surgeon James Hunter of HMS *Gibraltar* recorded no fewer than thirty men in his journal with fevers caused by 'intemperance' during the months of June and July. These men were added to the ship's sick list for days, sometimes over a week, and deemed incapable of their regular duties. Hunter described the ship as a 'scene of confusion, anarchy, and disorder'.[1] The number of alcohol-related illnesses aboard the *Gibraltar* was striking but not necessarily atypical in the Royal Navy through the long eighteenth century. In 1813, the surgeon aboard HMS *Ville de Paris*, William Warner, noted that 'drunkenness nowadays in the Navy kills more men than the sword' and that most accidents and diseases could be attributed to the excessive consumption of grog.[2] Excessive or chronic alcohol consumption presented a threat to the efficacy, order, and discipline of a ship, but the ubiquity of its consumption within the ship culture posed issues for its regulation and management.

The surgeons' journals reveal that surgeons intervened in a wide variety of what I call 'problematic' behaviours—behaviours deemed disruptive, disorderly, or deceitful, which either hindered the functioning of the ship as a space of labour or clashed with state-imposed values of order and discipline. These ranged from seamen added to the sick list for weeks for injuries or illnesses associated with alcohol consumption to patients sent off the ship due to disruptive behaviours attributed to madness; and from contagious outbreaks emerging from disorderly and licentious ships to the falsification of illness for invalidation, known as malingering. Medical sequelae stemming from excessive or chronic drunkenness are especially pervasive in the journals, which means that drunkenness provides an ideal case study to examine how certain 'problematic' behaviours were medicalised and how the surgeon intervened in their management.

Naval historians have tended to address disorder as a social and political issue with implications for ship culture, labour productivity, collective action, and state control. Historians have used court martial records and captains' logs to investigate

[1] TNA, ADM 101/101/6, f. 4-11, HMS *Gibraltar,* 1797–1798.
[2] TNA, ADM 101/125/3, f. 1-3, HMS *Ville de Paris*, 1813–1814.

how the naval bureaucracy dealt with individual crimes such as drunkenness, theft, desertion, and insolence.[3] Historians examining the Mutinies of 1797 have provided insight into the different perspectives among members in the ship hierarchy and the naval bureaucracy's response to collective action among seamen.[4] Thomas Malcolmson's study of the maintenance of order during the French Wars described the subtle ways that crew members undermined authority and exerted their agency through individual and collective acts of 'disorder'.[5] These studies provide a fundamentally social perspective on disorder and behaviour, emphasising the role of ship captains, commanding officers, and the naval bureaucracy in the management of these behaviours and the establishment of order.

Concerning drunkenness specifically, N. A. M. Rodger has argued that the prodigious amount of alcohol consumed by both seamen and officers was an accepted facet of ship life until a rigid divisional system increased authoritarian discipline in the late eighteenth century.[6] Brian Lavery has argued that reduced accessibility to the shore, and consequently alcohol, was a major cause of discontent among seamen leading up to the Mutinies of 1797, highlighting the sustained social and cultural value of alcohol consumption.[7] John Byrn's examination of court martial records revealed that courts martial for drunkenness were actually exceedingly rare, especially against seamen. The seamen who were tried by court received punishment because their drunkenness led to an incompetence of duty, revealing the Navy's prioritisation of an efficient labouring force.[8] It was far more common for seamen to be punished summarily by the captain

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[3] John D. Byrn, *Crime and Punishment in the Royal Navy: Discipline on the Leeward Islands Station, 1784–1812* (Aldershot, UK: Scholar Press, 1989), 125-133. See also Nick Slope, 'Discipline, Desertion, and Death: HMS Trent, 1796–1803', in *The Naval Mutinies of 1797: Unity and Perseverance*, Ann Veronica Coats and Philip MacDougall, eds. (Woodbridge, UK: Boydell Press, 2011), 226-242; B. R. Burg, *Boys at Sea: Sodomy, Indecency, and Court Martial in Nelson's Navy* (New York: Palgrave, 2007); Marcus Eder, *Crime and Punishment in the Royal Navy of the Seven Years' War, 1755–1763*, (Aldershot, UK: Ashgate, 2004); Thomas Malcolmson, *Order and Disorder in the British Navy, 1793–1815: Control, Resistance, Flogging and Hanging*, (Woodbridge: Boydell Press, 2016).

[4] For a more traditional account of the mutinies, see G. E. Manwaring and Bonamy Dobrée. *The Floating Republic* (London: Frank Cass & Co. Ltd., 1966). Recent works have nuanced this account: Ann Veronica Coats and Philip MacDougall, eds., *The Naval Mutinies of 1797: Unity and Perseverance* (Woodbridge, UK: Boydell Press, 2011) and James Davey, *Tempest: The Royal Navy and the Age of Revolutions* (New Haven, CT: Yale University Press, 2023).

[5] Malcolmson, *Order and Disorder in the British Navy, 1793–1815*.

[6] N. A. M. Rodger, *The Wooden World: An Anatomy of the Georgian Navy* (London: Fontana Press, 1988), 72-74 and 205-211.

[7] Brian Lavery, *Royal Tars: The Lower Deck of the Royal Navy, 875–1850* (London: Conway, 2010), 211-213.

[8] Byrn, *Crime and Punishment in the Royal Navy,* 125-133.

on board ship (e.g. flogging) instead of a court martial, but records of these punishments are inconsistent and sparse in the captains' logs.[9] Few historians have examined drinking and disorder as a medical issue under the purview of the surgeon. This chapter will explore how certain kinds of behaviours, deemed problematic, were identified and managed by the surgeon in practice, thus involving the medical officer in the management of order and discipline.

The intervention of the state and military in disciplining bodies through medicine has received sustained attention since Michel Foucault's *Discipline and Punish* (1977).[10] As discussed in the previous chapter, scholars have contested at which point medical discipline became policy and practice. Erica Charters has identified that the rhetoric around disciplining bodies and moral health existed within in the military bureaucracy as early as the Seven Years' War (1756–1763).[11] And yet this was a period described by N. A. M. Rodgers as lax and raucous with liberal drinking among officers and crew alike.[12] That medical rhetoric around discipline was circulating during the French Wars is undeniable. Medical theories in circulation during the French Wars certainly discussed the importance of discipline to managing morally-coded behaviours, such as drunkenness and licentiousness, alongside cleanliness.[13] However, the extent to which this informed patient care, and the role of the surgeons in 'engendering moral reform', as suggested by Christopher Lawrence, has not been addressed.[14] In what follows, I analyse the surgeons' records of practice to examine the extent to which naval surgeons responded to problematic behaviours, disorder, and indiscipline and the specific concerns to which they were responding within their medical purview.

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[9] Slope, 'Discipline, Desertion, and Death: HMS Trent, 1796–1803', 226-242.
[10] Michel Foucault, *Discipline and Punish*, trans. Alan Sheridan (London: Penguin, 1977).
[11] 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), esp. 86-119.
[12] Rodger, *The Wooden World,* 72-74.
[13] Christopher Lawrence, 'Disciplining Disease: Scurvy, the Navy, and Imperial Expansion, 1750–1825', in *Visions of Empire: Voyages, Botany, and Representations of Nature,* David Philip Miller and Peter Hanns Reill, eds. (Cambridge: Cambridge University Press, 1996), 92-98; Mark Harrison, *Medicine in an Age of Commerce and Empire: Britain and its Tropical Colonies, 1660–1830* (Oxford: Oxford University Press, 2010), 237-253.
[14] Lawrence, 'Disciplining Disease', 96.

The extent to which the Navy evolved into a top-down authoritarian institution in the final decade of the eighteenth century has been recently reconsidered.[15] As Sara Caputo has reminded us, power dynamics are not unidirectional, applied by an all-powerful state. She has demonstrated that seamen maintained a degree of medical agency, exhibited by falsifying and concealing illnesses or advocating for their own health needs. Using the surgeons' journals to recover patient voices, Caputo has examined instances where patient agency subverted the supposedly rigid top-down disciplinarian system.[16] However, there remains scope here to examine the surgeon's professional dynamic, both with his patient and his employer, and how his practical lived experience on ship interfaced with the medical theories circulating in published texts. My reading of the surgeons' journals will examine when and how surgeons intervened in behaviour and discipline. I will argue that it was increased manning pressures that heightened concerns around desertion, malingering, and deception, thus requiring the surgeons to use their medical expertise to navigate the professional demands made of them by the Admiralty. By focusing on how surgeons navigated drunkenness, a ubiquitous and normative cultural and social practice that was also deemed harmful to health and discipline, I shed light on how surgeons performed their professional roles policing morality through health within the ship hierarchy and the naval bureaucracy.

Military and colonial historians more broadly have addressed the specific relationship between alcohol consumption and the establishment of military order within the Army or the East India Company. Paul Kopperman's study of eighteenth-century Army officers argued that they were more interested in curtailing intake and managing drunkenness as a behaviour, rather than as a medical concern.[17] Scholars of nineteenth-century colonial India have examined how the imperial state, largely acting through the East India Company, controlled the distribution and consumption of alcohol to preserve order within colonies through various administrative

[15] For recent reinterpretations with a focus on medicine, see: Sara Caputo, 'Treating, Preventing, Feigning, Concealing: Sickness, Agency and the Medical Culture of the British Naval Seaman at the End of the Long Eighteenth Century', *Social History of Medicine* 35, n. 3 (2021): 749-769; Catherine Beck, 'Patronage and Insanity: Tolerance, Reputation and Mental Disorder in the British Navy, 1740–1820,' *Historical Research* 94, n. 263 (Feb 2021): 73-95

[16] Caputo, 'Treating, Preventing, Feigning, Concealing'.

[17] Paul Kopperman, '"The Cheapest Pay:" Alcohol Abuse in the Eighteenth-Century British Army', *The Journal of Military History* 60, n. 3 (1996): 445-470.

mechanisms.[18] Fears over contagion, including cholera, malaria, and venereal disease, were tied to the consumption of liquor in and out of barracks and garrisons.[19] These same concerns over contagion existed on naval ships, but a tenuous balance between the seamen's liberties, sanctioned consumption, and ship order further complicated the officers' management of alcohol consumption. Cultural historians focusing on colonial and imperial rhetoric have contributed to our understanding of how drinking habits were used to demarcate class, race, and gender; similar rhetoric can be read in the naval surgeons' logs.[20] This chapter will illustrate how naval surgeons participated in the establishment of imperial order as medical officers within an imperial bureaucracy.

The medicalisation of consumption has been a substantial topic of debate among historians of medicine, particularly with regard to identifying the 'birth' of modern conceptualisations of addiction. This is all the more relevant since Thomas Trotter, our esteemed naval physician, was one of the leading voices on early alcohol addiction theory. His *Essay, Medical Philosophical, and Chemical, on Drunkenness and Its Effects on the Human Body*, published in 1804 but based on his MD dissertation (1788), was one of the first texts to portray 'the habit of drunkenness' as a 'disease of the mind'.[21] Though historians have contested the originality of his conceptualisation of addiction, as well as the contemporary meaning of 'addiction', Trotter has nevertheless been considered a foundational figure.[22] However, the Navy has only received only

[18] Douglas Peers, 'Imperial Vice: Sex, Drink and the Health of the British Troops in Northern Indian Cantonments, 1800–1858', in *Guardians of Empire: The Armed Forces of the Colonial Powers c. 1700–1964,* David Killingray and David Omissi, eds. (Manchester: Manchester University Press, 1999), 25-52; Erica Wald, *Vice in the Barracks: Medicine and the Military and the Making of Colonial India, 1780–1868* (London: Palgrave MacMillan, 2014); Philip Stern, 'Alcohol and the Ambivalence of the Early English East India Company-State', *The Historical Journal* 65 (2022): 185-201.

[19] Douglas Peers, 'Soldiers, Surgeons and the Campaigns to Combat Sexually Transmitted Diseases in Colonial India, 1805–1860', *Medical History* 42 (1998): 137-160; Manikarnika Dutta, 'European Sailors, Alcohol, and Cholera in Nineteenth-Century India', in *Disease Dispersion and Impact in the Indian Ocean World*, G. Campbell and E.-M. Knoll, eds. (London: Palgrave, 2020), 191-210.

[20] Trevor Burnard, 'Tropical Hospitality, British Masculinity, and Drink in Late Eighteenth-Century Jamaica', *The Historical Journal* 65 (2022): 202-223; 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, n. 3 (2012): 383-408.

[21] Thomas Trotter, *An Essay, Medical Philosophical, and Chemical, on Drunkenness and Its Effects on the Human Body* (London: Longman, Hurst, Rees & Orme, 1804), 179.

[22] For this long history of 'origins' debate: Joseph Hirsh, 'Enlightened Eighteenth Century Views of the Alcohol Problem', *Journal of the History of Medicine and Allied Sciences* 4, n. 2 (1949): 230; Harry Gene Levine, 'The Discovery of Addiction: Changing Concepts of Habitual Drunkenness', *Journal of Studies on Alcohol* 39, n. 1 (1978): 143; Roy Porter, 'The Drinking Man's Disease: The "Pre-History" of Alcoholism in

limited attention as an institution in which alcohol consumption was rife and, consequently, a prime venue for new medical theories.[23] Though this chapter is not primarily concerned with dating the origins of addiction theory, my findings certainly inform these conversations. My analysis makes clear through the journals that surgeons treated drunkenness as a medical concern. The question of whether alcohol abuse was considered a disease and to what extent it was articulated as a compulsion, undermining the patient's agency, is central to the discussion below.

The development of alcohol addiction alongside the 'psychiatrisation' of other disorders has received some attention, but drunkenness and addiction have seldom been incorporated into histories of mental health.[24] The dearth of scholarship concerning mental health in the Navy during this period is noteworthy, but this is slowly changing.[25] Most recently, Catherine Beck has examined how insanity was dealt with in the Navy within a broader study of the systems of patronage, arguing that madness was overall tolerated on ship but must be seen within a system of merit and capacity which evaluated whether crewmembers were still able to contribute to the ship community. Removal from the ship or invalidation from service only occurred when behaviours became especially disruptive or dangerous, or affected crewmembers' ability to be a productive addition to the labour force.[26]

Expanding the scope of madness, melancholy, and other 'psychiatric' disorders to include addiction will lead to new insight into how these disorders were medicalised, contested, and perceived by medical practitioners, particularly how biases and anxieties over their diagnosis reveal the unique ways in which these were problematised. Biases around moral character, deception, and class with regard to alcohol consumption all feature in these surgeons' logs and were relevant to the medical decision-making and authority of the surgeon. This is particularly significant when considering how this medicalised language was used and institutionalised. By the mid-nineteenth century the

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Georgian Britain', *British Journal of Addiction* 80 (1985), 385; Jessica Warner, '"Resolv'd to Drink No More": Addiction as a Preindustrial Construct', *Journal of Studies on Alcohol* 55 (1994): 685-691; Phil Withington, 'Addiction, Intoxicants, and the Humoral Body', *The Historical Journal* 65 (2022): 68-90.

[23] D.H. Marjot, 'Delerium tremens in the Royal Navy and British Army in the 19th Century', *Journal of Studies on Alcohol* 38, n. 9 (1977): 1613-1623; Griffith Edwards, 'Thomas Trotter's "Essay on Drunkenness" Appraised', *Addiction* 107, n. 9 (2012): 1562-1579.

[24] William Bynum, 'Chronic Alcoholism in the First Half of the 19th Century', *Bulletin of the History of Medicine* 42, n. 2 (1968): 160.

[25] Roland Pietsch, 'Hearts of Oak and Jolly Tars? Heroism and Insanity in the Georgian Navy', *Journal for Maritime Research* 15, n. 1 (2013): 69-82.

[26] Beck, 'Patronage and insanity'.

policing of non-normative and morally-coded behaviours, particularly among the lower classes, drew on medical language in order to bolster its claims, giving rise to the Contagious Diseases Acts, the Temperance Movement, and the Lunacy Laws. Doctors played a crucial role in these developments, asserting their moral authority and medical expertise as 'guardians of health' over the collective good of public.[27] As this chapter will illustrate, naval surgeons were pressured by the Admiralty to identify problematic behaviours deemed harmful, and thus exhibited early formations of this reformative medical identity.

In the first section of this chapter, I will describe the drinking culture on board naval ships. Drawing on a variety of texts—personal memoirs, diaries, and naval ballads, alongside prescriptive texts, and the surgeons' medical logs—I explore the tenuous balance between sanctioned and unsanctioned consumption and the social and cultural evaluation of drinking. While surgeons were neither in control of ship provisioning nor punishment, alcohol consumption became their responsibility when it resulted in injury and illness. The second section turns to the surgeons' journals to examine how surgeons conceived of drunkenness medically as both causing injury or illness and as an illness in its own right. The surgeons' patient notes reveal how they defined drunkenness as problematic to ship labour and the maintenance of order, revealing the pressures they were under to ensure ship-wide health and combat contagion. The final section turns to the role of alcohol consumption in medical assessments for invalidation and hospitalisation. In some cases, surgeons interpreted certain aggravated cases of chronic consumption as indicative of poor moral character and an intention to subvert duty. These specific cases expose the surgeons' fear of deception, which had professional consequences for their medical authority. Thus, alcohol consumption became medicalised in a very specific way, embedding social and cultural biases in these medical assessments.

Methodologically, this chapter moves away from the marginal notes and general remarks that were examined in chapter two and dives into patient notes in search of incidental information that accompanied descriptions of patients' signs, symptoms, diagnoses, and recovery. By focusing on the patient records, examining all mentions of alcohol-related injuries and illnesses, this chapter also includes a larger

[27] Michael Brown, *Performing Medicine: Medical Culture and Identity in Provincial England, c. 1760–1850*, (Manchester: Manchester University Press, 2011), 151-122.

sample of journals and surgeons. Thus, in contrast with the enterprising surgeons of chapter two, who were navigating crises in provisioning and prevention, this chapter interrogates the medical practice and norms of a wider array of naval surgeons, forming a more representative image of the surgeons as a collective. As a reminder, the ships' unique spatial meaning as a 'heterotopia' is also an important consideration.[28] Instead of focusing on environmental permeability or connectivity to ports—though the later certainly plays a role in drunkenness—I explore the multi-layered social and cultural construction of the ship as a space of labour and living, warfare and liberty, socialising and order. I emphasise that different classes and ranks of the crew interpreted the ships' meaning in different ways, which frequently led to tensions between the crew, the surgeons, the captain, and the officers.

Naval Drinking Culture

That drinking was ubiquitous in the Royal Navy at the close of the eighteenth century is largely accepted. The prominent naval physician Gilbert Blane explained that 'owing to the hardships they undergo, and the variety and irregularity of sea life', drinking was highly popular among the men in the Navy and thus alcohol would be impossible to withhold.[29] However, the systems in place to manage alcohol consumption are not well understood. The Admiralty's *Regulations* offer insight into how alcohol was intended to be distributed and consumed. Pairing these prescriptive regulations with crew members' personal diaries, surgeons' journals, and naval ballads offers a more complete image of the realities surrounding consumption aboard ship. This section explores the culture around drinking in the Navy, seeking to identify where the margins of acceptability lay, and considering how this consumption functioned as a valuable social bond within the ship community.

The provisioning and rationing of alcohol on ship reflected the demarcation of class and rank. The Admiralty's *Regulations and Instructions* established a daily ration of either one gallon of beer, a half-pint of rum, a pint of wine, or an equivalent measure of other liquors depending on availability.[30] Close to the home station, beer was the

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[28] Michel Foucault, 'Of Other Spaces', trans. Jay Miskowiec, *Diacritics* 16, n. 1 (1986): 22-27.
[29] Gilbert Blane, *Observations on the Diseases Incident to Seamen* (London: Joseph Cooper, 1785), 300.
[30] Admiralty, *Regulations and Instructions Relating to His Majesty's Service at Sea* (London: 1787), 62; Admiralty, *Regulations and Instructions Relating to His Majesty's Service at Sea* (London: 1808), 288.

most commonly available and distributed beverage among seamen due to its lower alcohol content and perceived anti-scorbutic properties.[31] Other liquors were occasionally available on board such as brandy, gin, rum from the West Indies, or arrack from the East Indies, and these liquors were prioritised in provisioning either for long voyages, as they did not spoil, or because they were more widely available at foreign stations. By the end of the eighteenth century, a watered-down rum ration, a beverage known as grog, became increasingly standard to help reduce over-indulgence.[32] In contrast with the crew's allowance, the officers had their own supply of port wine.[33] This reinforced hierarchical rank through the consumption of a distinct beverage culturally valued as more elite compared to the seamen's regular allowance. The officers' separate supply in the wardroom also suggests that officers were believed to be better able to regulate their consumption and did not require the same paternalistic care as the crew.

Medical evaluations of alcohol among surgeons and physicians reveal further biases over which beverages were categorised as medically beneficial and which were regarded as harmful. Ship provisioning provided wine for the sick, as it was seen by contemporary physicians to possess restorative properties deemed beneficial to weak constitutions.[34] The general consensus among naval physicians was that 'malt liquors', such as beer and wine, held salubrious and medicinal qualities, while distilled spirits, or liquors, caused harmful intoxication.[35] The naval physician Gilbert Blane wrote that the salutary 'vegetable matter' was removed in the distillation process, turning the liquid into a 'chemical liquor'.[36] This established a dichotomy between what was seen as natural and fabricated. Through the eighteenth century, the distillation of spirits such as gin was largely associated with the lower classes. This is most evident in the 'Gin Craze' (1720–1750) wherein the lower classes were perceived as especially weak-

[31] Blane, *Observations on the Diseases Incident to Seamen*, 301; William Turnbull, *The Naval Surgeon; Comprising the Entire Duties of Professional Men at Sea* (London: R. Phillips, 1806), 41-43.
[32] Blane, *Observations on the Diseases Incident to Seamen*, 305; Admiralty, *Regulations and Instructions* (1787), Additional Regulations, 205.
[33] Admiralty, *Regulations and Instructions* (1787), 62; Admiralty, *Regulations and Instructions* (1808), 288.
[34] See for example: Blane, *Observations on the Diseases Incident to Seamen*, 301-303.
[35] Blane, *Observations on the Diseases Incident to Seamen*, 303; Thomas Trotter, *Medicina Nautica: An Essay on the Diseases of Seamen,* v. 1 (London: Cadell & Davies, 1797), 399-400; Turnbull, *The Naval Surgeon*, 112; C. F. Vandeburgh, *The Mariner's Medical Guide* (London: Baldwin, Cradock, and Joy, 1819), 302.
[36] Blane, *Observations on the Diseases Incident to Seamen*, 303.

willed chronic drinkers. These biases appear as a subtle undercurrent throughout the medical cases in the journals.

Disciplinary records also reveal different standards in alcohol consumption between seamen and officers. The *Articles of War* (1749), which set the standard for the crew's behaviour and duties while in service, clearly stated drunkenness was a punishable offence and that 'all flag officers, and all persons in or belonging to His Majesty's ships, or vessels of war' could be subject to 'such punishments as a court martial shall think fit to impose, and as the nature and degree of their offence shall deserve'.[37] The reality was that drunkenness was rarely punished by court martial. John Byrn estimates that only two percent of cases of drunkenness were punished in this manner and this was heavily biased towards officers, who were more likely than seamen to receive dismissal or demotion for drunkenness.[38] The higher standards for moral conduct among officers were emphasised in the *Articles* which stated that they could be dismissed from service if they behaved in a manner 'unbecoming the character of an officer'.[39] Chaplains, as representatives of Christian morality, were held to the highest standard of conduct, reinforcing the notion that drunkenness was considered contrary to cultivating moral order on the ship.[40]

In contrast, when drunkenness was punished among seamen, the concern was less about moral conduct and character and more about productive labour. Byrn's analysis showed that offences were more frequently punished when they led to an incompetence or neglect of duty, a finding echoed in Nick Slope's examination of the captain's log for HMS *Trent* (1796–1803).[41] Though seamen most frequently received floggings or some kind of punishment on ship, the questions they were asked in the rare instances of a court martial highlight why this behaviour was deemed problematic.[42] The defendant's ship mates and supervising officers would be called upon to comment on whether the defendant was able to walk straight at the time of the incident and whether they were able to carry out their allocated duties.[43] These

[37] 22 Geo. II c. 27; 19 Geo. III c. 27. *Articles of War* (1749), II.
[38] Byrn, *Crime and Punishment in the Royal Navy*, 125-133.
[39] 22 Geo. II c. 27; 19 Geo. III c. 27. *Articles of War* (1749), II. XXXIII.
[40] Byrn, *Crime and Punishment in the Royal Navy*, 125-133.
[41] Byrn, *Crime and Punishment in the Royal Navy*, 125-133; Slope, 'Discipline, Desertion, and Death', 226-242. See also *Naval Court Martial Records, 1793–1815*, John D. Byrn, ed., Navy Records Society, v. 155 (Farnham, UK: Ashgate, 2009), 147.
[42] Byrn, *Crime and Punishment in the Royal Navy*, 125-133.
[43] *Naval Court Martial Records*, 147-178.

variances between seamen and officers in how drunkenness was perceived reveals how seamen were valued for their labour while officers were valued for their moral conduct.

The surgeons' medical journals offer some insights into who was most likely to be identified as drunk. A clear majority of the cases I have identified as being associated with alcohol concern seamen rather than officers. My sample of journals suggests that non-rank members of the ship, including able and ordinary seamen, landsmen, and freemen, account for approximately two thirds of the cases associated with drunkenness. Warrant officers largely account for the remaining cases, with marines and boatswains comprising approximately twenty percent of cases alone. The highest ranks seen in this sample were as follows: one ship's Master, one Second Master and Pilot, and one Purser—all of whom were commissioned officers. This was largely due to the higher proportion of seamen on the ships compared to warrant and commissioned officers, but there may be other factors at work. For example, officers may not have visited the surgeons for alcohol-induced ailments, underscoring a difference in medical agency or the culture and acceptability of drinking among varying ranks. Another possibility is that the types of liquors available to each rank could lead to varying proportions of illness; for example, officers sipping port wine could result in very different health outcomes and behavioural complaints than the low-quality spirits imbibed by the crew. Lastly, the surgeon may have been less likely to blame excessive alcohol consumption for officers' complaints. The paucity of information provided in the medical records prohibits broad generalisations about officers drinking less than seamen in reality.

Another tension around alcohol was the relationship between sanctioned provisioning, unsanctioned consumption, and the seamen's liberties. Sanctioned provisioning was under the purview of the purser, who was in charge of victualing the ship, and the captain, who held ultimate authority over distribution of alcohol and the enforcement of order.[44] Each ship had the potential to vary in its drinking culture depending on the captain's strictness and the availability of liquor. The published recollections of officers and seamen reveal how captains managed the drinking culture aboard their ships, often finding ingenious ways to effect punishment within their own purview. In James Anthony Gardner's account from HMS *Orestes*, where he served as

[44] Admiralty, *Regulations and Instructions* (1787), 62; Admiralty, *Regulations and Instructions* (1808), 288.

an officer in 1786, he described how 'the captain in the kindest manner allowed petty officers a moderate quantity of liquor in each of their messes'.[45] Dissatisfied with these restrictions, the sergeant of the marines attempted to smuggle twenty more kegs aboard, suggesting that the sergeant may have been accustomed to more lax enforcement. The sergeant's ruse was discovered, and the captain had the barrels emptied in front of the crew as a demonstration of his authority. Sanctioned provisioning under the captain was one thing, but anything outside those bounds was treated suspiciously, associated with deceptive tactics such as smuggling.

Unsanctioned use of alcohol on ship, either though trading, smuggling, or hoarding, reveals the tensions of authority within a shipboard hierarchy and wartime labouring force. Seamen and officers were not supposed to drink while on duty or when the ship was at sea, other than their daily ration. However, it is clear from personal accounts and from the surgeons' journals that alcohol was smuggled and traded on board. For example, in the case notes describing the death of a 29-year-old seaman, surgeon Ben Lara of *Princess Royal* remarked on the bottle of brandy hidden under the seaman's pillow.[46]

The personal recollections of Robert Wilson, a seaman aboard the frigate *Unité* in 1806, explained that many seamen traded 'grog as payment for favours received'—a practice that most certainly existed outside of the Admiralty's jurisdiction.[47] Wilson also described how the crew would save up their rations 'from one day to another and by that means got intoxicated', indicating that daily rations were rarely sufficient on their own to cause inebriation.[48] However, the captain of the ship found out and dealt with the issue *en masse*. The captain feared that this 'beastly habit of drunkenness, so ill becoming an Englishman', was counterproductive to the seamen performing their duties, particularly when there was the threat of enemy engagement in foreign waters.[49] The captain exclaimed: 'You are now on an enemy's coast, and who knows how soon our utmost exertions may be required to defend ourselves?' This is an important

[45] 'HMS Orestes, 1786', in *Recollections of James Anthony Gardner*, R. Vesey Hamilton and John Knox Laughton, eds., Navy Records Society, v. 31 (1916), 60.
[46] TNA, ADM 101/115/3A, f. 7, HMS *Princess Royal*, 1801–1802.
[47] 'Robert Mercer Wilson, 1805–1809' in *Five Naval Journals, 1789–1817,* H.G. Thursfield, ed., Navy Records Society, v. 91 (1951), 141.
[48] 'Robert Mercer Wilson, 1805–1809', 153.
[49] 'Robert Mercer Wilson, 1805–1809', 153.

reminder that these ships were not only spaces of labour and living, but also sites of warfare, which distinguished them from merchant vessels.

While seamen sought to find ways around the structured, regulated life of the ship, viewing alcohol consumption as a social activity to be enjoyed on their terms, the captain was required to institute order and control among the crew. Captains were granted a level of flexibility and autonomy to manage their ship. The captain of the *Unité* claimed to be 'really tired and annoyed by continually flogging of [sic] men' and decided to monitor consumption by punishing 'the innocent with the guilty in making them all drink their grog at the tub for the sake of the character of the Ship'.[50] Thus drinking was transformed from an enjoyable social activity, which provided some agency to the seamen, to a mundane duty in line with consuming their daily rations for sustenance. Even the naval physician Thomas Trotter suggested that 'exemplary punishment' was one of the best ways to circumscribe habitual drinking among the crew.[51]

Even more poignant in this account was the captain's concern with perception—both in terms of the moral 'character of the ship' as well as the identity of being 'an Englishman', which was placed in stark contrast to the 'beastly habit of drunkenness'. The imposition of elite society's cultural norms on the low-ranking seamen here suggests an expansion of class-based rhetoric over the entire ship's crew as representatives of English imperial might. As one historian has argued, the excessive and 'uncivilised' drinking habits of lower-class Europeans posed a threat to the maintenance of British moral superiority and, consequently, their 'civilising' rule.[52] The captain of the *Unité* appeared to be struggling with a similar dilemma. The first article of instruction for captains in the *Regulations and Instructions* (1787) commanded them 'to be very vigilant in inspecting the Behaviour of all such as are under them, and to discountenance and supress all dissolute, immoral, and disorderly practices, all such as are contrary to the Rules of Discipline and Obedience'.[53] The moral implications of drunkenness were expounded in the *Articles of War* (1749) as well, which stated that drunkenness, alongside offences such as cursing and 'other scandalous actions, in

[50] 'Robert Mercer Wilson, 1805–1809', 153.
[51] Trotter, *Medicina Nautica*, v. 1, 401.
[52] Fischer-Tiné, 'The drinking habits of our countrymen', 383-408.
[53] Admiralty, *Regulations and Instructions* (1787), 43.

derogation of God's honour, and corruption of good manners', should be punished.[54] This association of character, morals and drinking habits frequently appears in the surgeons' medical logs, to which we will return.

While the captain maintained unilateral authority to manage liquor aboard his ship, his jurisdiction was less clear outside the ship. The captain hypothetically held the same jurisdiction over his crew outside of the ship space, but this control was tenuous and difficult to enforce outside of active duty.[55] Naval vessels were in port for approximately half of their service, providing plenty of opportunities for consumption at the seaman's own expense outside the ship. In his medical journal, surgeon James Farquhar of HMS *Captain* described how the irregular pay schedules of the Navy facilitated drinking excessive quantities upon payment when returned to home port:

> The people, from having prize money paid, and from three to five years pay due to them, contrived by one means or the other to get a sufficient quantity of spirits to keep them almost in a constant state of intoxication, which I believe to have been the principle [sic] cause of so many of them being taken ill.[56]

Surgeon Farquhar paints the consumption of alcohol while on shore as a group activity, celebrating their pay while leaving the ship. As the seaman Robert Wilson described, 'they were merry and happy while on shore where they could get plenty of liquor (for a seaman's delight is to wet his whistle when he can)'.[57] However, the combination of backpay, prize money distribution, and shore leave led to stints of excessive drinking and financial precarity. In a particularly astonishing case, surgeon William Warner of HMS *Ville de Paris* related the case of John McLean, a seaman aged 55, who had been constantly drunk for ten days in the Channel Service (1813–1814). After his death, a staggering bill for £16 worth of gin and rum, consumed over the period of two months, was found in his pocket.[58] For context, this was over a year's wages in base pay.[59] Immediate access to alcohol on shore and vast sums of backpay could be dangerous to heath, but these 'liberties' offered on shore were fiercely

[54] 22 Geo. II c. 27; 19 Geo. III c. 27. *Articles of War* (1749), II.
[55] 22 Geo. II c. 27; 19 Geo. III c. 27. *Articles of War* (1749), XXXIV and XXXV.
[56] TNA, ADM 101/93/2B, f. 34, HMS *Captain*, 1797–1799.
[57] 'Robert Mercer Wilson, 1805–1809', 240.
[58] TNA, ADM 101/125/3, f. 1-3, HMS *Ville de Paris*, 1813–1814.
[59] N. A. M Rodger, *Command of the Ocean: A Naval History of Britain, 1649–1815* (London: Penguin, 2004), 627. The Bank of England inflation calculator suggests this value would be £914 in 2023: https://www.bankofengland.co.uk/monetary-policy/inflation/inflation-calculator.

protected by seamen. Even Gilbert Blane noted that it would be impossible to withhold alcohol as 'the men would claim it as their right'.[60]

One of the main items in the petition composed by the delegates of the mutiny at Spithead in 1797 was greater protections and assurances 'that we may in somewise have grant and opportunity to taste the sweets of liberty on shore, when in any harbour, and when we have completed the duty of our ship, after our return from sea'.[61] The request 'that no man may encroach upon his liberty', suggests that this had been a consistent issue among the seaman who were deprived of shore leave by their captain or superior officers, but had no legal recourse to do so.[62] As the historian Brian Lavery noted, seamen led highly regulated lives: when and where they served and upon which ship, what tasks they were allocated, when they messed, and what they ate were all controlled by the Admiralty.[63] Enjoyment of shore leave or mess life among their comrades was seen as one of the few pleasures of an otherwise very harsh and isolating lifestyle. For many seamen, alcohol was the balm that eased the difficulties of their arduous lifestyle and served to bring them together through shared social camaraderie.

Naval ballads point to a strong drinking culture that aided the formation of social bonds and eased the isolation of ship life.[64] Other ballads demonstrate liquor's capacities to provide liquid courage in battle as well as remember the valiant fallen.[65] These ballads point to community-building based around drinking and the importance of drinking to this ship culture. Fitting into the shipboard community and forming these social bonds were integral to a cohesive ship unit and efficient service—a boon to seamen, officers, and the captain. But there was a fine line between a cohesive ship and a disordered one, particularly for the surgeons in charge of maintaining health. Even the ballads themselves indicate that alcohol was a medical issue:

Billy the cook got drunk,
Fell into a sty,
And knocked out his eyes,
Then into the sick bay he slunk.[66]

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[60] Blane, *Observations on the Diseases Incident to Seamen*, 300.
[61] Appendix II of Manwaring and Dobrée, *Floating Republic*, 266.
[62] Appendix II of Manwaring and Dobrée, *Floating Republic*, 266.
[63] Lavery, *Royal Tars*, 213.
[64] 'Don't Forget Your Old Shipmate', in *Naval Songs and Ballads*, C.H. Firth, ed., Navy Records Society, v. 33, (1908), 338.
[65] 'A New Song On Lord Nelson's Victory At Copenhagen', in *Naval Songs and Ballads*, 297.
[66] Verse from a sea shanty recorded in 'HMS Barfleur, 1790–1791', in *Recollections of James Anthony Gardner*, 104.

The rest of the chapter will use the surgeons' medical logs to explore how drunkenness was perceived as a medical concern, and the extent to which this correlated with concerns over discipline, ship order, and efficiency.

Drunkenness as a Medical Concern

Naval surgeons were increasingly being told that moral order and discipline was a facet of medical management.[67] In 1785, Gilbert Blane argued that 'the abuse of spiritous liquors is extremely pernicious everywhere, both as an interruption to duty and as it is injurious to health'.[68] In 1797, Trotter explained that drunkenness was 'an object of medical inquiry' both by the 'diseases which it produces' and 'the number of deaths' caused by its enjoyment, and that curbing 'habitual drunkenness in ships' would result in 'good order and discipline'.[69] Trotter also popularised the idea that habitual drinking was a disease in itself, which we will return to below. By the nineteenth century, published medical texts more consistently claimed that intoxication was 'a proper subject of medical investigation' and even that it ought to be 'considered a disease […] being the foundation of many disorders'.[70] That treating drunkenness was 'one of the most frequent duties of the Navy Surgeon', was similarly echoed by the above authors across these decades.[71] The journals reveal that naval surgeons considered drunkenness as a real medical concern, as a sign of indiscipline, immorality, and disorder, leading to disease and loss of labour productivity, but also as an illness in itself.

Drinking was not always considered overly concerning and was often treated as any other illness or injury. However, excessive or chronic consumption was deemed problematic when associated with a loss of moral character, ship order and discipline, or when it affected ship labour. This current section will explore cases in which the consumption of alcohol was linked to injuries, illness, and contagion to examine the rhetoric employed by surgeons. The following section will then focus on cases in which moral character was in question to unpack why surgeons were so concerned with moral

[67] Lawrence, 'Disciplining Disease'; Charters, *Disease, War, and the Imperial State*, esp. 86-119.
[68] Blane, *Observations on the Diseases Incident to Seamen*, 304.
[69] Trotter, *Medicina Nautica*, v. 1, 399-401.
[70] Turnbull, *The Naval Surgeon*, 111; Vandeburgh, *The Mariner's Medical Guide*, 302.
[71] Quote from Turnbull, *The Naval Surgeon*, 111; Trotter, *Medicina Nautica*, v. 1, 401.

behaviour and how these cases underscore the biases present in the surgeon's decision-making.

Injuries

In the surgeons' journals, injuries resulting from drunken accidents were fairly common. Seamen were reported to fall down hatchways, gangways, mast holes, and ladders, or even out of their own hammocks, while drunk. Such was the case for Thomas Willis, a marine on HMS *Abergavenny*, who fractured his clavicle falling out of his hammock while drunk, or the purser of HMS *Aetna*, a Mr. Kirk, who injured his eye 'by a fall overboard when in a state of inebriation'.[72] While moored in Halifax, Nova Scotia, the surgeon of HMS *Cleopatra* reported fourteen accidents and wounds he treated as a consequence of drunkenness, presumably due to the close proximity to town and availability of liquor.[73] On 26 December 1815, while docked at Portsmouth Harbour, the surgeon of HMS *Rivoli* noted that 'last night we had a great many accidents originating from drunkenness, the greater part are so slight as not to require them to be exempt from duty'.[74] The surgeon brushed off many of these cases, because these simple, clumsy accidents resulted in minor injuries, such as a concussion or bruising with minimal laceration, and had no impact on the patients' ability to work.

A small portion of alcohol-related injuries were the product of violence. These drunken altercations required treatment of ensuing wounds: James Phillips, an able seaman of HMS *Swiftsure*, suffered from a contused head and a fracture of the left humerus during a drunken fight with some Portuguese on shore.[75] Richard O'Connor, a seaman, was found in a public house in Canton, China, after 'a violent beating in an affray with some of his companions'.[76] And John Herrington of HMS *Seahorse* received a stab wound during a 'drunken frolic' in Gibraltar.[77] These cases made their way into the surgeons' journals because of the subsequent wounds, not the alcohol consumption in its own right. In general, these cases of injury were treated on ship and

[72] TNA, ADM 101/80/2B, f. 5, HMS *Abergavenny,* 1797–1798; TNA, ADM 101/81/1, f. 4, HMS *Aetna*, 1807–1808.
[73] TNA, ADM 101/94/1, f. 12, HMS *Cleopatra*, 1805–1807.
[74] TNA, ADM 101/117/5A, f. 18-20, HMS *Rivoli*, 1814–1815.
[75] TNA, ADM 101/121/3A, f. 21, HMS *Swiftsure,* 1797–1798.
[76] TNA, ADM 101/98/3A, f. 17, HMS *Edgar,* 1797.
[77] TNA, ADM 101/120/6A, f. 26, HMS *Seahorse,* 1796–1797.

the surgeons recorded very little concern over the impact on the ship, implying that such cases were an accepted facet of ship life.

Surgeons only seemed to intercede in aggravated cases of injury or in cases where pervasive, continuous drinking was identified as a root cause. These provide a better indication of how the surgeon's medical expertise was employed in more problematic cases. William Ure's medical journal of the HMS *Theban*, stationed in the East Indies, described the case of the captain's clerk who received a compound fracture of the right femur from a fall in October 1815. Six days later, he died. The surgeon pointed out that the clerk had been 'bathing astern of the ship (contrary to the Cap[ts] [sic] orders)'.[78] The tragedy of this accident and death was undercut by the clerk's direct insubordination of the captain's orders. Ure conducted a post-mortem exam on the clerk to identify the cause of death, but he could find 'no appearance or indication' that he ought to have amputated the arm, suggesting a lack of evidence of infection or greater systemic malfunctioning caused by the fracture. This was swiftly followed by a remark that the clerk was 'very much addicted to drinking spirits'—a rationale that seemed to offer all the explanation Ure needed to close the case and absolve himself from further inquest. Either Ure was suggesting that that a lack of control over drinking led to faulty decision-making or he was suggesting that chronic alcohol consumption exacerbated his patient's ill health and delayed his healing in significant ways that were outside the surgeon's control. This case reveals how medical practitioners used addiction to rationalise poor health and recovery, but it also subtly indicates how addiction was linked to poor character and weak will, which will be discussed in the final section.

Illness

The majority of alcohol-related cases in the journals were associated with illness. The intersection between alcohol *causing* disease and *being* a disease is complex and often unclear in these journals. As I will demonstrate, surgeons considered alcohol as a contributing factor to increased disease susceptibility and prolonged recovery or more explicitly as the cause of a disease. In some cases, there seem to be indications in the journals that surgeons viewed chronic alcohol use as a disease with its own accompanying symptoms. This complex relationship around aetiology is unsurprising

[78] TNA, ADM 101/123/1B, f. 24, HMS *Theban*, 1814–1816.

if one considers the broader multi-factorial models of disease that dominated medical practice. The surgeons' journals frequently drew upon eighteenth-century theories of putrefaction, as well as new theories of nervous disorders, which had been first discussed by the Edinburgh physician William Cullen and then further popularised in first the decades of the nineteenth century.[79]

Thomas Trotter was one of the leading medical figures who promoted new theories of habitual consumption which cast drunkenness as a disease. He published his thoughts in an *Essay, Medical, Philosophical and Chemical, on Drunkenness* (pub. 1804), an expanded version of his MD dissertation *De ebrietate, ejusque effectibus in corpus humanum* (trans: 'On Drunkenness and its Effects on the Human Body'), submitted to the University of Edinburgh in 1788. Trotter popularised the idea that: 'the habit of drunkenness was a disease of the mind'.[80] First and foremost, Trotter defined alcohol addiction as a medical issue. A second significant aspect of Trotter's work was that he claimed, 'the habit of drunkenness is like some other mental derangements', thus placing it within the same substrata as other 'diseases of the mind'.[81] He explained that drunkenness could be accompanied by an onslaught of symptoms including nerves, hypochondria, and depression, potentially leading to suicide.[82] As a 'disease of the mind', Trotter recommended that medical practitioners inquire into the 'patient's temper and character' in order to understand 'the particular cause, time and place of his love of the bottle'.[83] He argued that longevity of affliction was key to building up an addiction.

The terminology used in the surgeons' journals around chronic and excessive alcohol use varied between 'habit' and 'addiction'. Within contemporary medical theory, 'habit' was commonly used to describe a patient's physiology and propensity towards diseases through repetitive action, as we saw in chapter two. For example, William Beard, a seaman of HMS *Gibraltar* (1798–1799) was noted to have an 'inflamed habit by intemperance', which the surgeon believed explained the subcutaneous eruptions spread across his skin.[84] A 36-year-old freeman aboard HMS *Captain*,

[79] Harrison, *Medicine in an Age of Commerce and Empire*, 237-253; Lawrence, 'Disciplining Disease'.
[80] Trotter, *An Essay, Medical Philosophical, and Chemical, on Drunkenness*, 179.
[81] Trotter, *An Essay, Medical Philosophical, and Chemical, on Drunkenness*, 181.
[82] Trotter, *An Essay, Medical Philosophical, and Chemical, on Drunkenness*, 180.
[83] Trotter, *An Essay, Medical Philosophical, and Chemical, on Drunkenness*, 187.
[84] TNA, ADM 101/101/6, f. 2, HMS *Gibraltar*, 1797–1798.

stationed in the Mediterranean in 1799, was labelled by surgeon James Farquhar as: 'of very gross habit of body and very fond of grog'.[85] In a last example, surgeon William Warner of HMS *Ville de Paris* (1813–1814), remarked that Thomas Hill, a 32-year-old seaman suffering from ulcers, was 'a very drunken subject and of very bad habit of body'.[86] Thus consuming alcohol held some correlative power in these cases with the potential to impact one's habit or physiology, in the same way as other factors, such as cleanliness. The rhetoric used in these patient notes is notably strong and moralising.

On the other hand, 'addiction' was used to describe a serious and often longstanding compulsion associated more frequently with death or serious hospitalisation. Surgeon James Farquhar of HMS *Captain*, related the case of a 48-year-old midshipman who was 'very much addicted to drinking' and suffered from a paralytic stroke as a consequence, resulting in his death in December 1797 (**Figure 10**).[87]

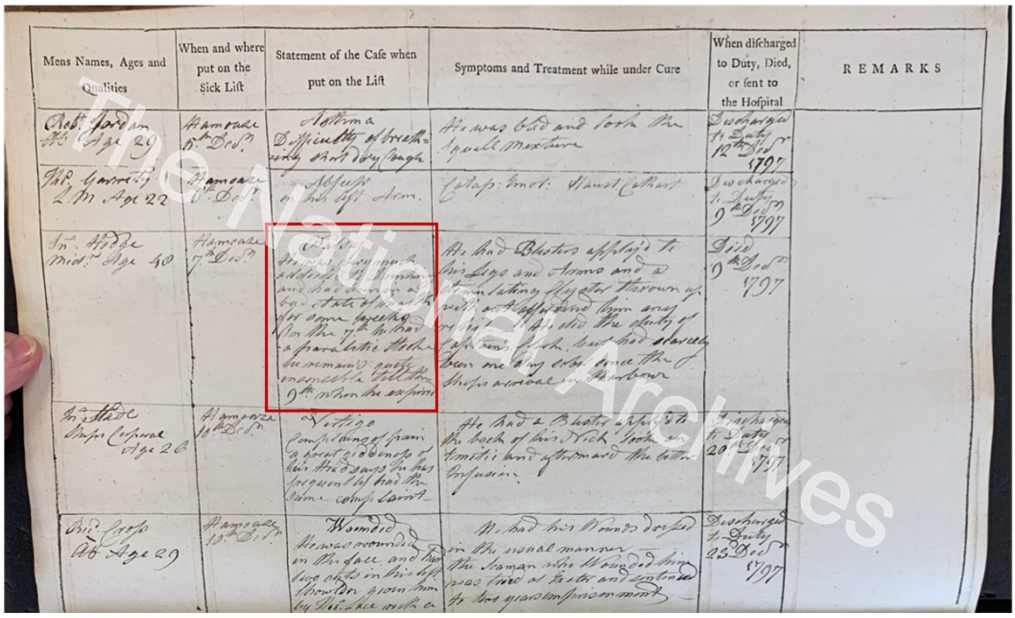

Figure 10. TNA, ADM 101/93/2D, HMS *Captain,* 1798–1799. Reproduced with the permission of The National Archives.

When Isaac Beverstock, a private marine aboard HMS *London*, died from continued fevers in 1800, the surgeon commented that he was 'a very intemperate man who had

[85] TNA, ADM 101/93/2D, f. 16, HMS *Captain,* 1798–1799.
[86] TNA, ADM 101/125/3, f. 39, HMS *Ville de Paris,* 1813–1814.
[87] TNA, ADM 101/93/2B, f. 3, HMS *Captain,* 1797–1798.

been from his youth addicted to inebriety'.[88] James Campbell, an ordinary seaman aboard HMS *Athenian* died from colic in 1805 off the coast of China. In his medical notations, the surgeon explains that 'being addicted to hard drinking, [Campbell's] stomach was unable to bear the severity of so many attacks'.[89] The use of addiction as a term in these specific cases indicates that surgeons considered there to be a causal link between drinking and disease. They emphasised the longevity of addiction in the same way that Trotter would in 1804. Though it is possible that these surgeons had read Trotter's MD dissertation in Latin, it is equally plausible that these naval surgeons arrived at the same conclusion independently, based on the same exposure to heavy drinking in the Navy.

Even death was considered possible from too much indulgence. For example, when surgeon Ben Lara of the *Princess Royal* discovered the dead 29-year-old seaman in his hammock, mentioned above for the stowaway bottle of brandy underneath his pillow, Lara explained that the seaman had no signs of inebriation or poor health at eight o'clock when he was first examined. However, he was found dead two hours later with a quart of his brandy left remaining, suggesting the seaman had imbibed up to three quarts in two hours. This led the surgeon to attribute the death to the 'excess spiritual potation'.[90] This description of what would now be understood as alcohol poisoning reveals that surgeons directly attributed over-consumption as a singular cause of death.

Intemperance was linked to an increased susceptibility to other symptoms. Surgeon John Tweedy Todd of HMS *Lion* noted that when seamen were employed in the dockyard while the ship was in port, increased rates of disease followed, which he directly attributed to intemperance.[91] When the surgeon aboard HMS *Saturn* could find no other source of infection for a case of typhus, he claimed that it must have been caused by 'excessive intoxication' as the man was known to be 'addicted to drink'.[92] Bowel complaints such as spasms and dysentery were most frequently mentioned. Surgeon Warner of *Ville de Paris* argued that grog was the most common cause of

[88] TNA, ADM 101/107/1, f. 9, HMS *London,* 1800.
[89] TNA, ADM 101/88/1, f. 20, HMS *Athenian,* 1804–1805.
[90] TNA, ADM 101/115/3A, f. 7, HMS *Princess Royal*, 1801–1802.
[91] TNA, ADM 101/106/4, f. 51, HMS *Lion*, 1814–1816.
[92] TNA, ADM 101/119/5, f. 35, HMS *Saturn,* 1799.

gastrointestinal complaints, citing 'stomach and bowel torpor'.[93] Seamen were also often put on the sick list for 'general debility'—a term that signified a general disorder of the nervous system—because of excessive indulgence. Even scorbutic ulcers were believed to be greatly exacerbated by excessive consumption. As the surgeon aboard HMS *Dreadnought* intimates concerning ulcers, 'tis a disease of high excitement and I verily believe it to be the offspring of irregularity and intemperance'.[94] As mentioned in chapter two, the surgeon of HMS *Adventure* noted that an armourer 'had been drinking three pints of gin every day for three weeks'; combined with the temperature fluctuations between the cold sea air and the forge, this had brought on a rheumatic fever.[95] These cases reveal that intemperance was believed to dysregulate the body, thus inciting a greater susceptibility to other ailments.

As already explored, climate and disease were understood to be closely connected in the development of eighteenth-century medical theory.[96] A number of surgeons believed that warm climates aggravated intoxication, which both Blane and Turnbull warned about in their published texts.[97] Serving aboard HMS *Swiftsure* in the Mediterranean in 1799, surgeon James Dalziel, described how 'a number of the ship's company' suffered from a highly inflammatory fever, which was a product of 'the heat of the weather and frequent intoxication', though he did not believe it to be infectious.[98] Stationed in the East Indies in 1802, the surgeon of HMS *Seahorse* attributed the death of one Michael Murphy, a seaman aged 23, to 'unusual lassitude and debility occasioned by drinking spirits and lying in the sun'.[99] The crew of HMS *Horatio*, serving in the East Indies, continuously struggled with tropical diseases; the surgeon lamented that 'unfortunately the ship's company was addicted to drink, and in this case, no plan of treatment can ever succeed in India'.[100]

Some journals exhibit a particular bias against the consumption of 'exotic' liquors. While stopping off in Brazil before a journey to the East Indies, the surgeon

[93] TNA, ADM 101/125/3, f. 44-46, HMS *Ville de Paris*, 1813–1814.
[94] TNA, ADM 101/97/2, f. 16, HMS *Dreadnought,* 1803.
[95] TNA, ADM 101/80/5A, f. 19-21, HMS *Adventure*, 1799–1800.
[96] Seth, *Difference and Disease;* Harrison, *Climates and Constitutions*.
[97] Blane, *Observations on the Diseases Incident to Seamen*, 304; Turnbull, *The Naval Surgeon*, 111.
[98] TNA, ADM 101/121/3C, f. 18, HMS *Swiftsure*, 1799–1800.
[99] TNA, ADM 101/120/6F, f. 13-14, HMS *Seahorse*, 1801–1802.
[100] TNA, ADM 101/104/4, f. 26, HMS *Horatio*, 1815–1817.

of HMS *Albion* remarked that a seaman had 'drunk the spirits of the country while on shore which caused spasms of the stomach and bowels'.[101] In the East Indies in 1802,

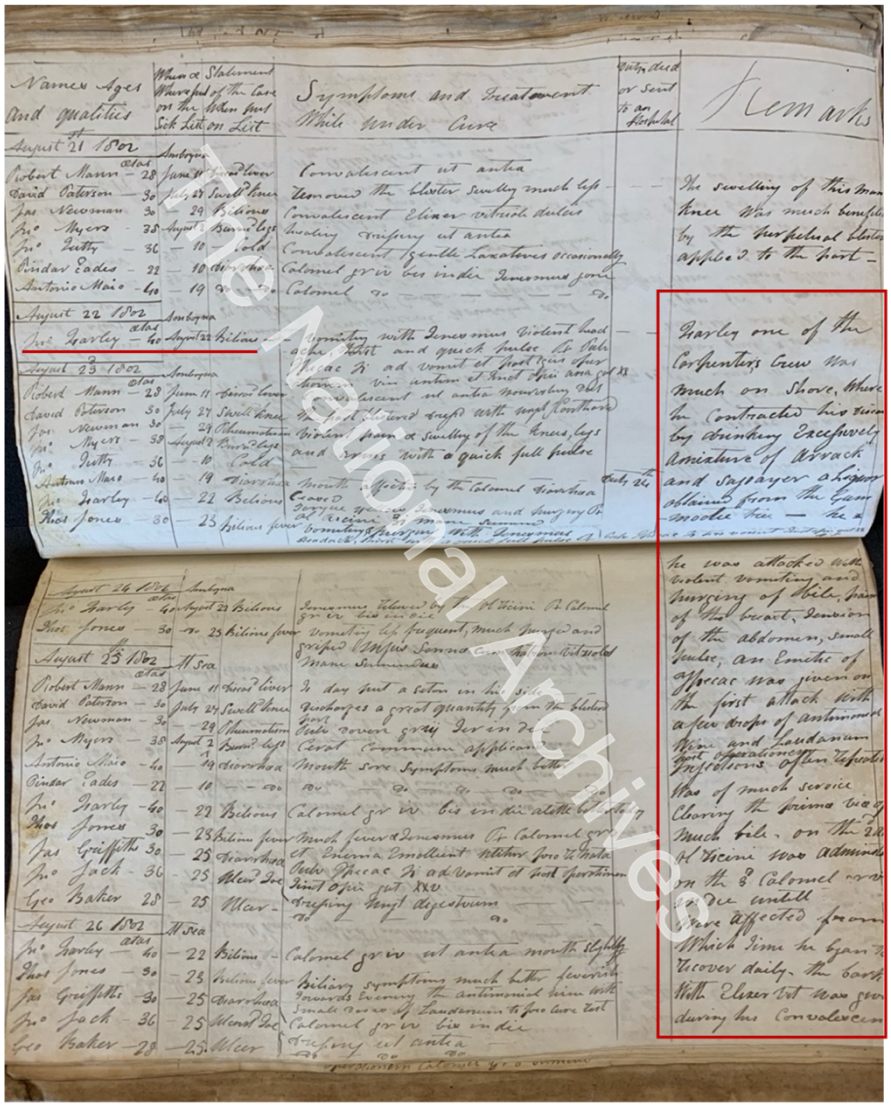

Figure 11. TNA, ADM 101/96/1, HMS *Daedalus,* 1802. Reproduced with the permission of The National Archives.

Peter Henry of HMS *Daedalus* referred to the liquors sold locally to explain the illnesses on board through the year. In May, he attributed the particularly pernicious 'ulcers of Amboina', not to scurvy, but 'to an excessive use of *sago ayer*, a liquor obtained from the gumroote tree, or bad arrack sold by natives'.[102] Surgeon Henry became increasingly suspicious of these local liquors. On 22 August, Henry recorded his notes for John Harley, a member of the carpenter's crew, who was suffering from a 'bilious'

[101] TNA, ADM 101/82/3G, f. 10, HMS *Albion*, 1803–1805.
[102] TNA, ADM 101/96/1, f. 18-19, HMS *Daedalus,* 1802.

condition, leading to much vomiting. He expanded on Harley's case notes in the remarks column, explaining that the patient was 'attacked with violent vomiting and purging before we sailed from Amboina attended with headache and general debility'. Henry explained that Harley had been on shore leave before his illness, which 'induced me to think he drank *cole* water sold privately by the native'.[103] (**Figure 11**) By September, surgeon Henry regularly attributed diarrhoea, fever, flux, and ulcers to the consumption of the local *sago ayer* and *cole* water sold on shore by local inhabitants.[104] It is difficult to determine whether these surgeons' remarks should be read within the scope of contemporary medical theories, which correlated dysregulated consumption with disease, or as the very real effect of the ingredients or distillation of these liquors; certain subspecies of *sago*, a variant of tapioca or cassava, are certainly poisonous if not prepared properly.[105]

Drunkenness was also frequently associated with other 'diseases of the mind' or 'nervous disorders' thus compounding the perceived connection between addiction and mental health. On HMS *Edgar*, the surgeon described the case of Mr. Ager, a Captain's Clerk, who 'was found on shore with his mental faculties afflicted'.[106] Mr. Ager was described as 'a martyr to his own intemperance', and was also suffering from venereal disease, rheumatism, and 'some improprieties in his moral conduct'.[107] The surgeon believed these overlapping symptoms and ailments 'unbalanced his mind', thus demonstrating the association between morality, temperance, sensibility, and their effects on both physical and mental health as popularised in new medical theories.[108]

Cases of what would later be understood as alcohol-induced delirium provide the best examples of where these 'diseases of the mind' appeared to overlap diagnostically.[109] In 1797, Surgeon James Farquhar, aboard HMS *Captain*, recorded the cases of a marine and an able seaman, one of whom he described whose 'eyes appear[ed] wild and he [was] constantly talking to himself'.[110] Both men had been 'seized suddenly with *symptoms of* madness/*symptoms* of insanity without previous

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[103] TNA, ADM 101/96/1, f. 28, HMS *Daedalus*, 1802.
[104] TNA, ADM 101/96/1, f. 34-36, HMS *Daedalus*, 1802.
[105] J. J. Lal, 'Sago palm', *Encyclopedia of Food Sciences and Nutrition* (Second Edition), Benjamin Caballero, ed. (Academic Press, 2003), 5035-5039.
[106] TNA, ADM 101/98/3A, f. 26, HMS *Edgar*, 1797.
[107] TNA, ADM 101/98/3A, f. 26, HMS *Edgar*, 1797.
[108] Harrison, *Medicine in the Age of Commerce and Empire*, 237-253.
[109] Marjot, 'Delirium tremens in the Royal Navy and British Army in the 19th Century'.
[110] TNA, ADM 101/93/2B, f. 9, HMS *Captain*, 1797.

indisposition'.[111] However, the fact that these were transient and temporary symptoms reveal where the distinction was made between madness, and a mimicry of madness.

The uncertainty in diagnoses between delirium and madness often hinged on how quickly symptoms resolved and how much alcohol the patient imbibed. In 1813, off the coast of Ushant, surgeon William Warner recounted that the quartermaster of the *Ville de Paris*, 'had been drunk for many days together and this morning, either jumped or fell overboard'. After his retrieval by the rest of the ship's crew, the quartermaster 'seemed sensible enough'; however, in the aftermath, 'he was seized with violent madness about four hours after being taken out of the water'.[112] The quartermaster alternated between fits of furious violence and aggression, which eventually required that he be put in a straitjacket[113] and leashed to his bed. The violent aggression of his 'madness' was placed in juxtaposition with his 'sensibility' immediately preceding the altered behavioural state. After a few days of careful observation and treatment, Warner eventually expressed his opinion that the quartermaster's symptoms 'fe[lt] more like delirium than madness' and arose from not being 'supplied with drink'. Though delirium resulted in a loss of sensibility or the 'symptoms of madness' as seen above, a distinction was drawn between delirium and madness. The first mention of *delirium tremens* as a pathological or psychiatric disorder resulting from alcohol withdrawal was in 1813, further indicating this novel correlation and its early observation in the Navy.[114]

The signs and symptoms of other 'diseases of the mind', such as madness and mania, reveal where there was potentially some categorical overlap among surgeons.[115] For example, surgeon Ben Lara diagnosed one seamen as mad due to his 'violent emotions of anger and joy' and 'obstreperous' and 'deranged' behaviour.[116] Surgeon John Strang of HMS *Araxes* had to confine one seaman who 'exhibited a peculiar oddity' and appeared to be quite noisy in his sleep, disrupting his shipmates.[117] A

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111 TNA, ADM 101/93/2B, f. 9 and 10, HMS *Captain*, 1797.
112 TNA, ADM 101/125/3, f. 41-42, HMS *Ville de Paris*, 1813–1814.
113 Later referred to as a 'straitwaistcoat'.
114 Oxford English Dictionary, s.v. 'delirium tremens, n.', accessed online, Jul 2023.
115 See, for example, the case of John Avery's 'hereditary mania' from John Sweeny Todd's journal for HMS *Lion* in TNA, ADM 101/106/4, f. 20-21; For more on madness, see Beck, 'Patronage and insanity'.
116 TNA, ADM 101/115/3B, f. 6, HMS *Princess Royal*, 1802.
117 TNA, ADM 101/85/6, f. 15, HMS *Araxes*, 1815.

marine was diagnosed with mania on HMS *Lion*, because he 'burst out into alternate fits of laughter and crying'. The surgeon, John Tweedy Todd, remarked on the 'insensibility' and 'frantic derangement' of the marine's behaviour.[118] These cases, alongside those of delirium share a similar metric of unpredictability, imbalance, disruption and a lack of sensibility that sat diametrically opposite from the culture of balance, order, and discipline the Navy sought to maintain.

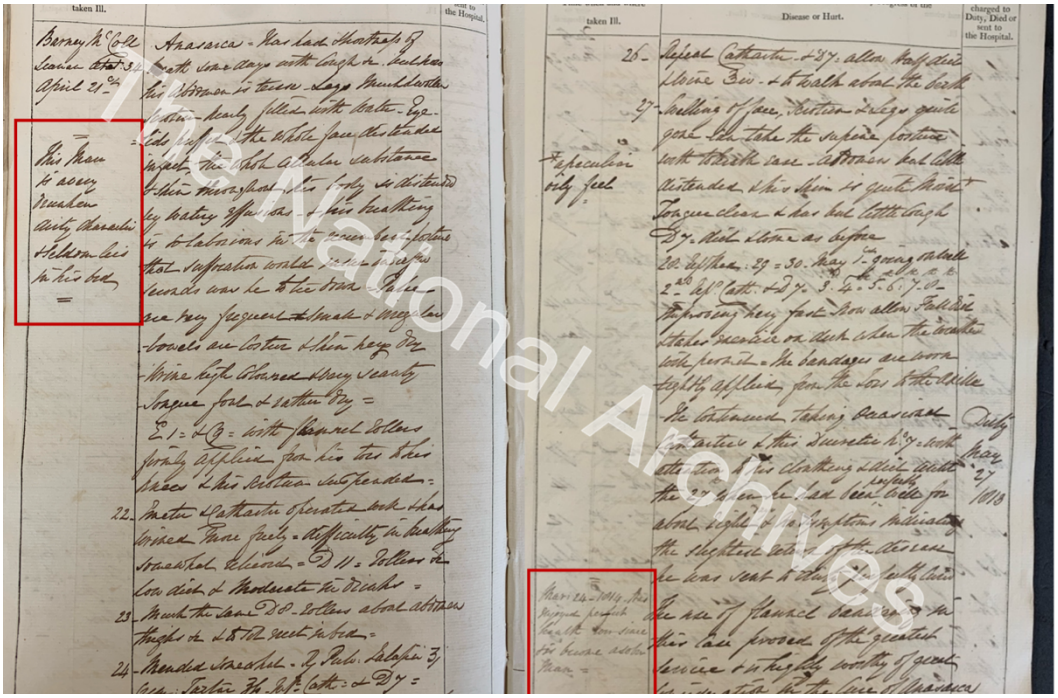

Figure 12. TNA, ADM 101/125/3, HMS *Ville de Paris*, 1813–1814. On the first folio (left) the note about his drunken character, clearly signposted in the margins. On the second folio (right), we can see a light ink added to the bottom left of the folio about the patient's sobriety. Reproduced with the permission of The National Archives.

Just as drinking was seen to exacerbate disease, abstention was directly linked to recovery. In Warner's journal for *Ville de Paris*, a 34-year-old seaman was placed on the sick list in 1813 for anasarca, a condition characterised by severe edema (lymphatic inflammation) typically caused by either poor diet or organ failure, most commonly of the liver or kidneys. Surgeon Warner noted next to the case: 'this man is a very drunken dirty character and seldom lies in his bed' (**Figure 12**), suggesting that a lack of obedience, discipline, and cleanliness was a cause of the man's disease.[119] This link

[118] TNA, ADM 101/106/4, f. 20-21, HMS *Lion,* 1813–1814.
[119] TNA, ADM 101/125/3, f. 14, HMS *Ville de Paris*, 1813–1814.

between poor moral and physical hygiene, alcohol consumption, and refusal to adhere to the surgeon's orders will be explored in the following sections. What is most interesting about this case, however, is that rehabilitation and sobriety were correlated. A note scrawled lightly in the margins, dated nearly a year later, explains that the seaman 'has enjoyed perfect health ever since, and has become a sober man'.

Part of the surgeons' treatment of illnesses was prescribing a strict regimen, often restricting alcohol. When the officers and crew HMS *Horatio* experienced a severe outbreak of dysentery in the East Indies in 1815, the surgeon only saw improvements among the officers because they followed his prescribed regimen. In contrast, the surgeon lamented that the crew members continued to smuggle liquor on board and their health continued to falter.[120] The surgeon juxtaposed the officers' adherence to his directives with the continued consumption of unsanctioned liquor among the rest of the crew, reflecting stereotypes around self-control and class discussed above. The fear of having grog taken away was enough to discourage some men from seeking medical attention altogether. Charles Chandler, a seaman on HMS *Isis*, serving in Newfoundland in 1805, was so fearful that his allowance of grog might be discontinued due to an especially pernicious scorbutic ulcer that he refused to apply for the surgeon's aid when the ulcer reappeared.[121] Surgeons held little control over the crew's behaviours except for altering their treatment course, and cooperation was very much up to the individual patient.[122]

These cases reveal how drunkenness was discussed by rank-and-file naval surgeons as an illness. While it was possible that surgeons were aware of Trotter's theories around alcohol habituation, whether through printed works or oral presentations, what remains clear is that Trotter was not the only practitioner that medicalised drunkenness. Further, the medical annotations accompanying these patient cases frequently displayed conceptualisations of morality and discipline applied to health, in line with contemporary medical theories.[123] While it appears that naval surgeons paid greater attention to behaviours and discipline, alongside diet and

[120] TNA, ADM 101/104/4, f. 12, HMS *Horatio*, 1815–1817.
[121] TNA, ADM 101/105/3, f. 30, HMS *Isis*, 1805–1806.
[122] For more on this, see Caputo, 'Treating, Preventing, Feigning, Concealing'.
[123] Lawrence, 'Disciplining Disease'; Harrison, *Medicine in an Age of Commerce and Empire*, 237-253.

hygiene, their scope for intervention did not enable them to regulate or preventatively manage these behaviours in any meaningful way.

Contagion

Thus far, we have largely examined individualised cases of injury and illness associated with alcohol consumption, most of which resulted in a temporary loss of ship labour and efficiency. However, cases of collective excessive consumption also resulted in widespread disorder and contagion. Thomas Trotter wrote that intemperance functioned by 'predisposing the body to receive contagion' or rendering 'the effects of febrile contagion more active on the system'—similar to the seventeen men on HMS *Gibraltar*'s sick list who succumbed to fevers due to heavy drinking, which opened this chapter.[124] In these cases, the surgeons imply that drinking to excess among the crew could become a collective, behavioural 'contagion'. Surgeons were not only concerned about the predisposition of an individual patient's body to disease but provided a more social model for understanding how this behaviour tended to develop collectively among the crew. The 'contagion' of illness was thus parallel to the 'contagion' of behaviour, which could lead to total, collective disorder.

In the previous chapter, we examined how the few hundred women admitted to HMS *Saturn* at Cawsand Bay resulted in contagion. The surgeon, in part, blamed this on 'excessive intoxication and other irregularities' and blamed the gin consumed by the crew, which he referred to as 'Cawsand Water'.[125] Similar instances of intoxication, disorder, and contagion can be seen in other journals. During a three-month refit in Portsmouth, the surgeon of HMS *London* likewise remarked on the 'scene of riot and disorder' when 400-500 women were given license to board the ship. The resulting intemperance and licentiousness aboard ship resulted in a plethora of accidents and fevers, all of which fell to the surgeon to deal with.[126] In similar instance, an outbreak of typhus aboard HMS *Lion* was attributed to the 'many excesses' in which the crew indulged while at Spithead in the Channel Service.[127] The surgeon of HMS *Edgar* was forced to send numerous men to hospital due to the uncleanliness below

[124] Trotter, *Medicina Nautica*, v. 1, 401; Turnbull, *The Naval Surgeon*, 112.
[125] TNA, ADM 101/119/5, f. 35-36, HMS *Saturn*, 1799.
[126] TNA, ADM 101/107/1, f. 37-39, HMS *London,* 1800.
[127] TNA, ADM 101/106/4, f. 49, HMS *Lion*, 1813–1814.

decks and rampant drunkenness.[128] These port calls overwhelmed the surgeon's capacity to manage the ship's disease ecosystem, whether the result was injuries and accidents or the transmission of venereal diseases and contagious fevers. Consequently, widespread consumption impacted the surgeons' ability to perform their duty, revealing tensions in their jurisdiction and their ability to enforce authority.

In sum, this section has explored when and why cases involving drunkenness may have appeared in the surgeons' journals. Individual cases of injuries or illness led to a temporary loss of labour, while collective cases of drunkenness were associated with disorder and contagion with serious consequences for the efficiency and order of the ship. These cases provide valuable insight into how drinking was categorised and addressed as a medical concern by the surgeon. Though the rhetoric of medical discipline was employed, surgeons did not have the jurisdiction, outside of the sick berth, to limit the crew's consumption or police their behaviour. The surgeon's actual role in these cases was primarily to treat and rehabilitate patients to duty as quickly as possible, thus maintaining a healthy labour force. In other words, surgeons did not appear to intervene directly in disciplining bodies into clean, moral, and obedient crewmembers, as has been described by Lawrence.[129] However, as we will see, some of the medical cases associated with alcohol did receive closer inspection when they were deemed fraudulent by the surgeon, and within this particular scope surgeons did hold power to intervene.

Deception and Medical Bias: Assessing Invalidation

The journals indicate that surgeons were concerned about being deceived, particularly in cases in which injuries or illnesses were either being falsified or aggravated because their medical advice was being ignored. As Caroline Nielsen has demonstrated for assessments of Army soldiers at Chelsea Hospital, assessments for pension due to ambiguous cases of disability were sometimes deemed fraudulent.[130] Malingering – the falsification of illness for some benefit – was a common fear among officers in the

[128] TNA, ADM 101/98/3A, f. 26, HMS *Edgar*, 1797.
[129] Lawrence, 'Disciplining Disease'.
[130] Caroline Louise Nielsen, 'Disability, Fraud and Medical Experience at the Royal Hospital of Chelsea in the Long Eighteenth Century', in *Britain's Soldiers: Rethinking War and Society, 1715–1815*, Kevin Linch and Matthew McCormack, eds. (Liverpool: Liverpool University Press, 2014), 183-201.

Navy as well. In the naval context, this was often in reference to seeking invalidation to acquire a pension for service. In her patient history 'from below', Sara Caputo has argued that malingering should be seen as a distinctive form of agency and resistance among seamen—an expression of their bodily autonomy within the naval institution. Her analysis has exposed how surgeons attempted to exert their authority but were often ineffective or unable to do so, thus undermining the power dynamics suggested by Foucault.[131]

In the rest of this chapter, I explore how the surgeons' medicalisation of alcohol consumption interfaced with cases of falsified injury and illness, alongside less obvious challenges to the surgeons' authority, including inattentiveness and neglect of one's health. I argue that biases around alcohol consumption, moral character, and class, as described above, were embedded in these medical assessments. The patient's agency and intent was indeed key to how surgeons interpreted this spectrum of behaviours because it called into question the surgeon's own medical knowledge and authority. Attempts to seek invalidation or hospitalisation were therefore met with suspicion, particularly when the patient's moral character was already in question.

The *Regulations and Instructions* tasked the surgeon with examining patients and providing medical discharges from service through the issue of a Smart Ticket, which was provided to those 'wounded or hurt in service as to make it probable the Chest at Greenwich will grant him a pension'.[132] The 1787 regulations explained that it was the surgeon's duty to ensure that he had a suitable number of Smart Tickets to provide these medical discharges from the ship.[133] But, by 1808, the newly revised regulations added a warning the surgeons, 'to be extremely careful not to suffer himself to be deceived by the feigned complaint of artful men, who wish to obtain improperly their discharge from service'.[134] The additional warning implied that it was the surgeon's duty to identify potential malingers by ensuring that they only dole out Smart Tickets to suitable candidates. The falsification of disorders or self-infliction of injuries to be discharged from service was clearly a growing concern in the naval bureaucracy,

131 Caputo, 'Treating, Preventing, Feigning, Concealing', 749-769, esp. 760-768.
132 Admiralty, *Regulations and Instructions* (1808), 269, 280-281.
133 Admiralty, *Regulations and Instructions* (1787), 132.
134 Admiralty, *Regulations and Instructions* (1808), 280

revealing new issues that the Navy appeared to be encountering during a prolonged period of war.

The Navy's concern over seamen's deception laid fundamentally in the heightened labour demands of the French Wars. In the early years of the war, press gangs used a number of tactics to increase the naval force, which resulted in a larger number of seamen whose service was far from voluntary. Thomas Trotter called impressment 'a most fatal and impolitic practice' because it only served to secure dejected men who lost employment due to war and were thus forced to leave their family in poverty.[135] Trotter argued that these men were more susceptible to diseases due to their poor spirits, leading to a 'species of mental affliction' that held 'no apparent disorder'.[136] Rounded up for service *en masse* impressed men were also considered vectors of contagion at port, bringing these infections on board ship alongside spreading general disaffection.[137] Trotter argued that those impressed were often of a different character than the seamen who voluntarily entered into service, frequently attempting to invalidate themselves and thus were 'the source of numerous deceptions'.[138] He described the malingerer as one who 'employs caustics, to produce ulcers; inflates the urethra, to give the scrotum the appearance of hernia; and drinks a decoction of tobacco, to bring on emaciation, sickness at stomach, and a quick pulse'.[139] And indeed, producing ulcerations on the penis in order to mimic venereal disease was not unheard of in the surgeons' journals.[140]

As an alternative to impressment, the Quota Act of 1795 increased the number of seamen recruited into the fleet by establishing quotas for each local authority.[141] Approximately 31,000 men were recruited into service, incentivised by bounties offered by local officials to reach their quota. Trotter found this system preferable to as it operated without the coercive tactics traditionally carried out by press gangs. However, he still expressed concern at the quality of men who applied for service. In the first instance, Trotter believed that 'men utterly unfit for duty' would report to service to receive the 'very high bounties' leading to 'much fraud and imposition'.

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135 Trotter, *Medicina Nautica,* v. 1, 44.
136 Trotter, *Medicina Nautica,* v. 1, 44.
137 Trotter, *Medicina Nautica,* v. 1, 45-46.
138 Trotter, *Medicina Nautica,* v. 1, 40.
139 Trotter, *Medicina Nautica,* v. 1, 40-41.
140 TNA, ADM 101/115/3, f. 3, HMS *Princess Royal*, 1802.
141 The following on the Quota Acts is largely summarised from: Lavery, *Royal Tars*, 208-210.

These men, 'entered for the sake of the sum, and after a few months or weeks on board' were discovered to be unfit for service only 'to get invalidated' at a net loss for the Navy.[142] The concern that men would still take advantage of this system for invalidation was still at the heart of his concerns. Trotter implied that because these men's intentions from the outset were for financial gain, their capacity for deception was even higher than among impressed men. It became the surgeons' duty then, according to the Admiralty's regulations, to use their medical expertise to identify deceptive tactics and police medical fraud.

Trotter's own theory of habitual drunkenness also expressed warnings of deception. As a 'disease of the mind', Trotter argued that medical expertise ought to be used to provide a 'mirror' into the psyche of the patient, reflecting the patient's abuse of liquor in order to expose the 'deformity of his conduct'.[143] Trotter warned that 'much vigilance will be required in watching these cravings; for they are sometimes attended with modes of deception, and a degree of cunning, not to be equalled'.[144] Drunkenness led to deception, and thus the onus was on the practitioner to identify deceptive behaviours to avoid further relapses. Falsified illnesses, similar to the neglect of one's health, operated in a similar manner, with intent and agency being the defining feature. The surgeon's duty was to carefully identify who deserved the care and resources of the state.

Interestingly, all of the suspected malingering cases associated with alcohol use that I have identified in the surgeons' journals all occurred after the Mutinies of 1797. Since a vast majority of the extant journals are from after this date, it is impossible to definitively assess correlation, but the mutinies may offer another reason for the association of invalidation and fraud. Recent scholars have emphasised that these mutinies reflect a political awaking of liberal, humanitarian values amongst seamen and the broader working class in Britain.[145] Seen in this light, such requests were not a desire to abuse the system, but to ensure proper care within it. The delegates of the Mutinies of 1797 had included, among their demands, a request that 'if any man is

142 Trotter, *Medicina Nautica*, v. 1, 45.
143 Trotter, *An Essay, Medical Philosophical, and Chemical, on Drunkenness*, 187.
144 Trotter, *An Essay, Medical Philosophical, and Chemical, on Drunkenness*, 179-180.
145 See for example: Coats, 'The Delegates: A Radical Tradition', 39-60, and Roger Moriss, 'Crew Management and Mutiny: The Case of Minerve, 1796–1802', 107-119, in *The Naval Mutinies of 1797*.

wounded in action, his pay may be continued till he is cured and discharged'.[146] However, the seamen's demands for continued pay while on the sick list may have led to a fear in the naval bureaucracy that men would abuse it. The seamen's request for pay while on the sick list may have further sown distrust and correlated financial gain with an evasion of duty in the minds of the naval bureaucracy.

The general remarks of the surgeon Alexander Gordon of the HMS *Overyssel* (1798) indicate a growing concern about malingering. Gordon noted that injuries resulting from accidents coincided with the 'immoderate use of spirits' and required surgeons' astute observation and judgement: 'we have had a great deal of trouble and perplexity with feigned and artificial complaints, and that the present times compel surgeons to proceed with caution'.[147] Defining malingering, of course, depended ultimately on the surgeons' perception around the patient's intentions. As the following cases from the journals will reveal, alcohol consumption deemed problematic by the surgeon was an important metric through which cases were assessed.

Neglect and inattentiveness of one's health, particularly involving frequent or continued drinking while injured or ill, was viewed by surgeons as a black mark against a patient's character. A 51-year-old seaman from HMS *Ambuscade* was eventually invalidated at Plymouth because he became permanently crippled. The surgeon attributed this permanent disability to the patient's 'frequent intoxication and lack of attention to the position of the foot', leaving the foot permanently contracted and crippled.[148] Though the seaman's injury was not assessed as fraudulent by the surgeon, the continued abuse of liquor was interpreted as a mark of poor character.

Aboard HMS *Adventure* in 1800, surgeon Parry followed the case of a midshipman who was 'frequently drunk' and would 'apply his own faeces to his right eye in the hopes of being sent to the hospital'.[149] Eventually the eye became so contaminated that the patient was indeed sent to Deal Hospital where he was invalidated. The surgeon explained that, had the patient refrained from drinking, the eye may yet have been saved, indicating that the midshipman continued to drink

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146 Appendix II of Manwaring and Dobrée, *Floating Republic*, 266.
147 TNA, ADM 101/111/5, f. 33-34, HMS *Overyssel,* 1797–1798.
148 TNA, ADM 101/84/6A, f. 9, HMS *Ambuscade*, 1800–1801.
149 TNA, ADM 101/80/5A, f. 11-12, HMS *Adventure,* 1799–1800.

against the surgeon's orders while on the sick list and waiting for invalidation. In this case, alcohol consumption was not the cause of the initial malady, but rather supportive evidence of the patient's lack of restraint and poor character, as reflected in his self-inflicted illness. Thus, both falsification and medical neglect were considered self-inflicted and imbued with a significant moral tone that guided surgeon's perceptions around who deserved to be invalidated.

In another example, the surgeon's biases are more evident, allowing us to unpack what specific kinds of behaviours may have incited a medical practitioner to suspect falsification. Thomas Simpson, surgeon of HMS *Arethusa*, stationed in the West Indies in 1805, described the case of John Downie, a marine aged 26, who was put on the sick list due to a complaint of a headache. Simpson described Downie's appearance: 'a coltish drunken fellow of such a ghastly wretched appearance [...] that it is a difficult matter to ascertain at any time whether he is in health or otherwise especially if it is convenient for him to affect indisposition—which is very often the case'. [150]

If Downie's 'wretched' appearance was not already enough to illicit suspicion, Simpson relied on his peculiar behaviours:

> He can imitate with the greatest possible exactness the howling of a pack of hounds, the crowing of a cock, the bellowing of a bull, cow or calf and a number of other animals. On account of these curious qualifications he is often solicited by his shipmates to give a specimen of his talents and a glass of grog is of course the reward.[151]

Though Downie's methods of entertaining his shipmates were unrelated to his medical complaint, Simpson used this to support his claim that this chronic drinker viewed grog as a reward, not only receiving alcohol outside of his sanctioned allowance but doing so for some sort of pecuniary benefit. 'He says his head aches', noted Simpson, but 'I presume he has been drunk in consequence of something of this kind and has affected sickness to avoid punishment'.[152] Simpson suspected that Downie's headache was a fabrication to avoid punishment. Despite the fact that surgeons recognised that alcohol did indeed carry symptomatic repercussions harmful to health; in this instance,

[150] TNA, ADM 101/86/1, f. 5, HMS *Arethusa,* 1805–1806.
[151] TNA, ADM 101/86/1, f. 5, HMS *Arethusa,* 1805–1806.
[152] TNA, ADM 101/86/1, f. 5, HMS *Arethusa,* 1805–1806.

Downie's headache was seen purely as a fabrication to cover up his inability to do his duty and to avoid punishment. Taken together, these descriptors of behaviour, personality, cleanliness, and health all influenced Simpson's perception of the marine's character and informed the surgeon's claim of a falsified illness.

At times, the consumption of alcohol while in recovery was enough to dissuade the surgeon from issuing a Smart Ticket, suspecting something deceitful. Such was the case when William Ure of the *Theban* refused to bestow a Smart Ticket to the boatswain given his continued abuse of liquor while on the sick list.[153] While in Pulo-Penang, a 35-year-old boatswain acquired a transverse fracture of his left femur after falling in a ditch on shore. He remained on the sick list for nine weeks from December 1814 to February 1815, unable to work. Surgeon Ure explained that 'being ashore on liberty' the boatswain got 'very much intoxicated', resulting in a misstep and the injury.[154]

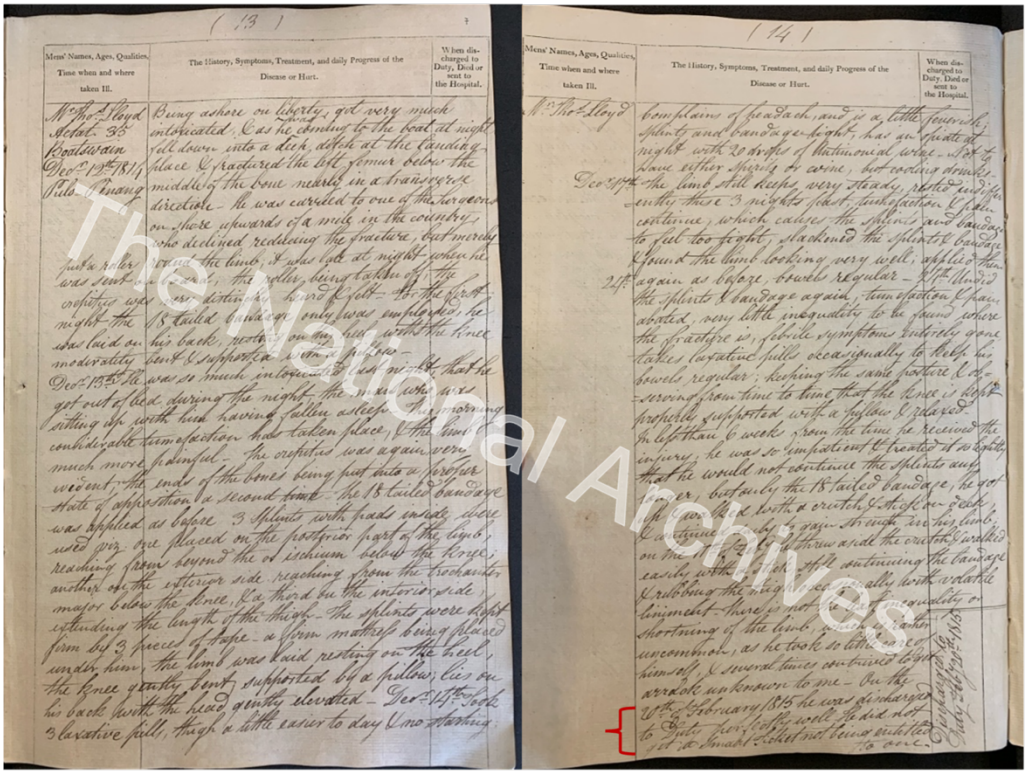

Figure 13. TNA, ADM 101/123/1B, HMS *Theban,* 1814–1816. Reproduced with the permission of The National Archives.

[153] TNA, ADM 101/123/1B, f. 7-8, HMS *Theban*, 1814–1816.
[154] TNA, ADM 101/123/1B, f. 7-8, HMS *Theban,* 1814–1816.

The injury clearly rendered him incapable of performing his duty, yet there was little that the surgeon or other officers could do to prevent excessive drinking by seamen while on shore using their own pay. Unlike the majority of cases where injuries were obtained due to alcohol's inhibitory effects, the boatswain's case did not result in a swift recovery and return to duty. In the case notes, surgeon Ure explained that his patient had neglected to care for himself and even attempted to procure alcohol against Ure's medical orders. Despite being told 'not have either spirits or wine', the boatswain repeatedly 'contrived to get arrack unknown to [the surgeon]'. The surgeon believed that the boatswain was attempting to procure a Smart Ticket. Ure explained in great detail in his case notes that he suspected his patient was attempting to prevent his own recovery, so Ure discharged the boatswain to duty instead: 'He did not get a Smart Ticket, not being entitled to one' (**Figure 13**). The boatswain did not feature in the remainder of the journal, so we must presume that he did indeed return to health.

When surgeons suspected that physical injuries or ailments were being falsified, habitual drunkenness was used to indicate a certain lack of character. James Farquhar of HMS *Captain*, serving in the Channel in 1798, was convinced that William Buds, a 35-year-old able seaman, was feigning an injury to his wrist after healing from a fractured arm that left him on the sick list.[155] After verifying that the bones were set, the surgeon discharged Buds but noticed that he did not attend to his duty and 'obstinately kept his hand either in a sling or in his bosom, declaring that he had no use in it'. Farquhar believed that 'the apparent distortion was one of his own making' but was unable to definitively prove the case, so he sent Buds to Plymouth Hospital where he was eventually invalidated. Though Farquhar was uncertain if there was a real injury or if it was a stubborn refusal to work, his case notes specifically mention that 'his character on the ship was that of a drunken, riotous, worthless blackguard'. This supporting claim of drunkenness and inadequacy seemed proof enough that the seaman was of bad character and therefore a potential malingerer. Nevertheless, Farquhar did not feel that he had sufficient evidence to act on.

When seaman John Rose of HMS *Lion* came forward with a back injury acquired while working, surgeon Todd was suspicious because the complaint had been made while Rose was drunk. When the captain of the forecastle claimed that he had

[155] TNA, ADM 101/93/2C, f. 3-4, HMS *Captain,* 1798.

witnessed no injury to the seaman, the Todd became increasingly convinced that Rose was feigning injury. The surgeon did eventually send the patient to hospital as a precaution, but this discharge did not come with a Smart Ticket.[156] In a contrasting case, we can see how sobriety reduced suspicion around malingering. R. W. Cleghorn, surgeon's mate on the gun brig *Furious* (1800–1801), described the injury of a sergeant of marines who fell and developed acute pain in his loins. Cleghorn described the man as 'a good sober man' and had no problem giving him 'a smart ticket for the hurt he received'.[157] Though the injury itself was not described as any more grievous than in the cases above, Cleghorn seemed naturally inclined to believe him.

These cases illustrate how alcohol consumption and sobriety was used as a metric to evaluate the moral character of their patients in assessments for invalidation. These surgeons included indications that they suspected some kind of deception or falsification based on their patients' drinking habits, which indicated poor character. In part, this was because drinking itself was considered a self-inflicted ailment, which embedded agency in the patient's decision-making. Thus, if a patient showed a lack of restraint, indulged excessively, or refused to follow medical advice, these surgeons correlated this agency to other fraudulent or deceitful intentions. This created a deterministic impact on the surgeon's medical evaluation of whether his patient was even worthy of hospitalisation, much less a Smart Ticket which may lead to a pension from the state. This question relates back to a broader distinction between those 'deserving' and 'undeserving' of charitable aid in Britain during this time.[158]

As Sara Caputo has remarked, a distinctive suspicion around 'diseases of the mind' can be found more generally in the surgeons' medical assessments for invalidation.[159] Writing in 1803, surgeon Thomas Carruthers of the *Dreadnought* discussed malingering at length, outlining how surgeons should examine the signs and symptoms carefully; inquire about how and when the symptoms emerged, seeking substantiation from witnesses where possible; and visit the patients when they least expect it to take them unaware. Carruthers' tool for diagnosing malingering is strikingly similar to Trotter's recommendation to inquire into the patient's history to uncover

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156 TNA, ADM 101/106/4, f. 26 and 35, HMS *Lion*, 1814–1816.
157 TNA, ADM 101/101/4B, f. 9, HMS *Furious,* 1800–1801.
158 Nielsen, 'Disability, Fraud and Medical Experience at the Royal Hospital of Chelsea in the Long Eighteenth Century', 184.
159 Caputo, 'Treating, Preventing, Feigning, Concealing', 761-762.

when this alcohol dependence was formed in the patient's psyche.[160] Carruthers also noted that feigning nervous and mental disorders, such as 'melancholy, foolishness, possession by evil spirits, and fascinations', were the most common methods used to feign illness.[161]

For example, Surgeon Thomas Crew of HMS *Contest* had been able to get a seaman to confess that he was mimicking madness by 'singing all day and night' in the hope of a Smart Ticket. The man admitted that he had tried to deceive four other surgeons in the same way.[162] It is, of course, impossible to say whether 'diseases of the mind' were more frequently falsified because they only required behavioural modification or whether surgeons suspected these mental afflictions at higher rates because they could not be physically verified. Nevertheless, the surgeons did frequently comment on patients with mental afflictions or behavioural concerns in ways that indicate a bias towards suspicion, if not outright disbelief.

As discussed in the previous section, there was a diagnostic parallel between 'diseases of the mind' and 'nervous disorders' such as madness and mania, and the behavioural effects of alcohol consumption. This was true of the behavioural 'insensibility' and 'moral impropriety' we saw with Mr. Ager which led to an unbalanced mind, as well as the link drawn between symptoms of madness and alcohol-induced delirium. Thus, it is no surprise that a further parallel may exist in cases of perceived falsification. As this section has illustrated, problematic alcohol consumption was imbued with similar biases around whether a patient deserved a Sick Ticket or medical care more generally. These constructions do not overlap entirely; for example, madness was viewed with suspicion because diagnosis could not be easily confirmed and the symptoms could be more easily falsified, whereas problematic alcohol consumption was associated with a lack of self-restraint and poor moral character. Nevertheless, both cases reveal an undercurrent of suspicion and a distaste for ambiguity on the part of the surgeon, as well as a correlation to a broader conceptualisation of 'diseases of the mind'. The question of the patient's agency and intention appeared to incite a fear over a surgeon's medical authority and expertise, particularly when they were tasked with discerning who was deserving of care.

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160 Trotter, *An Essay, Medical Philosophical, and Chemical, on Drunkenness*, 181.
161 TNA, ADM 101/97/2, f. 47-49, HMS *Dreadnought*, 1803.
162 TNA, ADM 101/95/1, f. 13, HMS *Contest*, 1807–1808.

Conclusion

While the previous chapter explored how surgeons navigated the strictures of their jurisdiction within the ship œconomy, this chapter has focused instead on the surgeons' oversight and authority in disciplinary management through the medicalisation of alcohol. Alcohol carried different meanings within the ship context. To the many seamen who devoted their lives to service, liquor represented freedom, camaraderie, and relief from their labours. Habitual consumption was allotted through the provisioning of the ship, and indeed, beer and wine were thought to provide medical benefit. To the captain and the ship's commanding officers, overindulgence led to decreased efficiency and disorder, requiring disciplinary action. As the primary officer in charge of treating patients, preventing contagion, and identifying malingering, alcohol consumption was problematic in different ways for the surgeon than it was for the captain.

Adding this medical perspective to studies of discipline and order reveals the role surgeons played within the ship hierarchy and the unique bureaucratic pressures put on the surgeons to identify and manage problematic behaviours. The journals clearly reveal that drunkenness was considered a medical issue to be managed by the surgeon. Most frequently, this management was constrained around treating the injuries and illnesses that resulted from intoxication or chronic use. By examining the patient notes that dealt with alcohol consumption, I have demonstrated how contemporary medical theories were drawn upon to explain the effects of drinking as a medical concern and an illness in its own right. Naval surgeons' proximity to the drinking culture in the Navy, no doubt played a role in this medicalisation, as exhibited by Thomas Trotter's own publications. The specific ways drunkenness was medicalised classified it in line with other mental disorders, revealing a significant overlap with how these 'diseases of the mind' were conceptualised by practitioners.

The social and cultural biases around alcohol consumption that were ingrained in these disorders contributed to a general scepticism and uncertainty. This led to a strong correlation between cases of falsified and feigned illnesses, alcohol consumption, 'diseases of the mind', and moral character. Specific associations of moral character were embedded in the surgeons' assessments for discharge from duty

or invalidation from service, as exhibited in cases linked with alcohol consumption. While surgeons clearly expressed concern over moral order and discipline, as outlined in the Admiralty's regulations, this was not rigid authoritarian enforcement of moral order described by Christopher Lawrence.[163] As Caputo and I have emphasised, surgeons were not especially effective at calling out and policing these behaviours aside from the notes they scrawled in their journals.[164] In the next and final chapter, I explore how some surgeons participated in medical inquiry and investigation as a way to expand their medical authority and roles within the bureaucracy and the imperial project.

[163] Lawrence, 'Disciplining Disease', 92-98.
[164] Caputo, 'Treating, Preventing, Feigning, Concealing', 749-769.

4. Medical Philosophers at Sea: Knowledge Brokers in Imperial Medical Complexes

> The medical philosopher requires nicer shades of distinction and more accurate lines of difference.[1]

When surgeon John Tweedy Todd wrote these words in his journal for HMS *Lion* off the Cape of Good Hope in 1812, he intentionally cast himself as more than just a middling surgeon, performing his duties by treating patients. Calling himself a 'medical philosopher', Todd likened himself to the learned elites operating as part of the 'medico-gentility' in Britain, who were concerned with creating medical knowledge and nuancing theories.[2] This line reveals much about how a select group of curious, inquiring naval surgeons sought to establish themselves within the British medical community and the naval medical branch. This chapter explores how these enterprising surgeons harnessed their position in the Navy to construct an identity as medical philosophers. However, I also argue that naval surgeons were not just concerned with the performance of an identity rooted in notions of gentility and sociability, but also with the utility of medical science for the improvement of the medical care within the Navy. The use of medical expertise for the improvement of the social body has been identified by Michael Brown as a feature present in provincial British medical practice after 1815.[3] However, I argue that we can see the early antecedents of this identity as 'guardians of health' among the surgeons who were tasked with caring for the Britain's troops. Drawing on their situational expertise, naval surgeons positioned themselves within the centralising naval medical bureaucracy during a period of global, imperial expansion.

That the British military was a venue for medical inquiry and experimentation by the close of the eighteenth century has now been accepted by most historians of military medicine. This scholarship has clearly demonstrated that modern' medical developments did not just arise out of a post-revolutionary Parisian context, or even necessarily a European one. The demand for an effective labouring force during global

[1] TNA, ADM 101/106/4, f. 1, HMS *Lion*, 1812.
[2] Michael Brown, *Performing Medicine: Medical Culture and Identity in Provincial England, c. 1760–1850* (Manchester: Manchester University Press, 2011).
[3] Brown, *Performing Medicine,* esp. 113-192.

conflict fuelled state intervention in the medical research in the Army and Navy.[4] A culture of medical experimentation was especially prevalent among practitioners in the tropical colonies.[5] Recent scholarship has highlighted how a distinct form of practical and empirical medicine, based in observation and lived experience 'in the field', was valued in the Army.[6] As this chapter will illustrate, naval surgeons likewise called upon direct observation and practical application as a basis for their medical authority. Scholars have remarked that naval surgeons functioned as the quintessential hybrid practitioners, elevating their professional status by engaging in preventative medicine as explored in the previous two chapters, but little has been done to explore their explicit engagement in medical inquiry during service.[7] Incorporating the imperial and military contexts of medical research expands upon the actors that contributed to this knowledge-making and underscores the imperial motivations embedded in their medical research.

In this chapter, I re-situate the ship as a site of medical inquiry. Scholars have shown how ships, including those in the Royal Navy, were used as a space of scientific inquiry and as scientific instruments themselves.[8] However, little work has been done to explore how they operated as sites of medical inquiry. Naval surgeons' unique

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[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).

[5] Mark Harrison, *Medicine in an Age of Commerce and Empire: Britain and its Tropical Colonies, 1660–1830* (Oxford: Oxford University Press, 2010).

[6] Catherine Kelly, *War and the Militarization of British Army Medicine, 1793–1830* (London: Pickering and Chatto, 2011); Marcus Ackroyd, Laurence Brockliss, Michael Moss, Kate Retford, and John Stevenson, *Advancing with the Army: Medicine, the Professions, and Social Mobility in the British Isles, 1790–1850* (University Press, 2006).

[7] Christopher Lawrence, *Medicine in the Making of Modern Britain, 1700–1920*, (London: Routledge, 1994), 23-25; Christopher Lawrence, 'Disciplining Disease: Scurvy, the Navy, and Imperial Expansion, 1750–1825', in *Visions of Empire: Voyages, Botany, and Representations of Nature*, David Philip Miller and Peter Hans Reill, eds. (Cambridge: Cambridge University Press, 1996), 80-106.

[8] Anne Mariss, *Johann Reinhold Forster and the Making of Natural History on Cook's Second Voyage, 1772–1775,* (London: Lexington Books, 2019); Daniel Simpson, *The Royal Navy in Indigenous Australia, 1795–1855: Maritime Encounters and British Museum Collections* (Cham: Palgrave Macmillan, 2021); Daniel Simpson, 'Medical Collecting on the Frontiers of Natural History: The Rise and Fall of Haslar Hospital Museum (1827–1855)', *Journal of the History of Collections* 30, n. 2 (2018): 253-267; Simon Naylor, 'Log Books and the Law of Storms: Maritime Meteorology and the British Admiralty in the Nineteenth Century', *Isis* 106, n. 4 (2015): 771–797; Megan Barford, 'D.176: Sextants, Numbers, and the Hydrographic Office of the Admiralty', *History of Science* 55, n. 4 (2017): 431-456; Megan Barford, 'Fugitive Hydrography: The Nautical Magazine and the Hydrographic Office of the Admiralty, c.1832–1850', *The International Journal of Maritime History* 27, n. 2 (2015): 208-226; Glyn Williams, *Naturalists at Sea: Scientific Travellers from Dampier to Darwin* (New Haven, CT: Yale University Press, 2013). On ships as instruments and spaces of scientific inquiry: Richard Sorrenson, 'Ship as Scientific Instrument in the Eighteenth Century', *Osiris* 11, n. 2 (1996): 221-236; Antony Adler, 'The Ships as Laboratory: Making Space for Field Science at Sea', *Journal of the History of Biology* 47 (2014): 333-362.

position on naval ships around the world allowed them to engage in medical research in ways that benefited the military apparatus and broader imperial project. As a 'heterotopia', the ship's simultaneous connectedness and disconnectedness shaped the surgeons' medical inquiry, and consequently, their identity-construction.[9] This is not to say that naval surgeons only participated in medical inquiry within the imperial military complex. Scholars have already noted that Army medical officers during the French Wars were publishing their findings in books and periodicals back in Britain.[10] Naval surgeons also actively published books and articles in medical periodicals, on which further research is required. Laying the groundwork for such a study, this chapter establishes the context in which naval surgeons participated in medical inquiry on ship.

In the first section of this chapter, I will outline the formal expectations about how naval surgeons were expected to contribute to medical science as data collectors for the naval medical bureaucracy. The idealised surgeon described in the published medical texts by naval physicians was a key figure for collecting data within the Navy's medical apparatus; the interpretation of these data was then centralised among the elite Physicians of the Fleet and the Sick and Hurt Board. This aligns with what Bruno Latour initially labelled as 'centres of calculations', where the accumulation of data was centralised for interpretation in scholarly or institutional establishments.[11] The journals certainly reveal that many naval surgeons fulfilled their role as data collector, but they also show that some ship surgeons went beyond this role by participating in medical inquiry through more active interpretation and analysis in their journals. As described in chapters one and two, the intended audience for these journals was the Sick and Hurt Board. In these cases of analysis, naval surgeons were claiming to be active participants in the medical research within the naval medical bureaucracy.

The following three sections will focus on these enterprising surgeons to demonstrate how they positioned themselves as their own 'centres of calculation', collecting data and conducting systematic studies of disease on their own ships. In doing so, I draw on a rich scholarship that has disrupted the simplistic binary of

[9] Michel Foucault, 'Of Other Spaces', trans. Jay Miskowiec, *Diacritics* 16, n. 1 (1986): 22-27.
[10] Kelly, *War and the Militarization of British Army Medicine.*
[11] Bruno Latour, *Science in Action: How to Follow Scientists and Engineers through Society* (Harvard: Harvard University Press, 1987).

colonial collector and gentleman scholar by de-centring the metropole in imperial knowledge networks and integrating other actors in the process of knowledge-accumulation and circulation.[12] Through three case studies—one from the West Indies, one from the Cape of Good Hope, and one from the East Indies—I explore exactly how these surgeons engaged in medical inquiry and positioned their professional medical identities within the naval medical bureaucracy and imperial project. The case studies selected for this chapter were chosen because they indicate a clear performative intention to engage in medical inquiry by eschewing the standardised and prescriptive journal format. Though unique in their own way, the medical inquiry present in these cases was not entirely exceptional. I end the chapter with a brief section analysing naval surgeons' participation in a wider British medical community through medical periodicals to capture how they used this medium to communicate their medical inquiry.

This chapter uses the terms 'medical philosophers' to describe the performance of a medical identity by some especially inquiring naval surgeons. The term 'medical philosophers', as used by surgeon Todd in the opening epithet, was an adaptation of the more common terms used to describe scholars engaged in the epistemic branches of 'natural philosophy'. 'Medical philosopher', by extension, referred to those concerned with the study of medicine for the purpose of advancing medical knowledge.

I employ Londa Schiebinger's concept of 'medical knowledge complexes' to describe how regional constellations of knowledge among various actors within colonial spaces operated within broader imperial networks.[13] In her words: the 'medical complex refers to medical knowledge and practices that emerged from the mixing and

[12] Matthew Sargent, 'Recentering Centres of Calculation: Reconfiguring Knowledge Networks within Global Empires of Trade', in *Empires of Knowledge: Scientific Networks in the Early Modern World,* Paula Findlen, ed. (London: Routledge, 2018), 297-317; Anna Winterbottom, 'Medicine and Botany in the Making of Madras, 1680–1720', in *The East India Company and the Natural World*, Alan Lester, ed. (London: Palgrave Macmillian, 2015), 35-57; A. M. Lucas and P. J. Lucas, 'Natural History "Collectors": Exploring the Ambiguities', *Archives of Natural History* 41, n. 1 (Apr 2014): 63-74; Jim Endersby, *Imperial Nature: Joseph Hooker and the Practices of Victorian Science* (Chicago: University of Chicago Press, 2008); Jim Endersby, "'From Having No Herbarium": Local Knowledge versus Metropolitan Expertise: Hooker's Australasian Correspondence with William Colenso and Ronald Gunn', *Pacific Science* 55, n. 4 (2001): 343-358; Anne Secord, 'Corresponding Interests: Artisans and Gentlemen in Nineteenth-Century Natural History', *The British Journal for the History of Science* 27, n. 4 (1994): 383-408.

[13] Londa Schiebinger, 'The Atlantic World Medical Complex,' in *Empires of Knowledge: Scientific Networks in the Early Modern World*, Paula Findlen, ed. (London: Routledge, 2018), 317.

melding of people, plants, and their knowledges across the whole of the Atlantic World'.[14] Within these complexes, which were frequently dominated by European structures of power during these centuries, 'diseases, knowledges, and medical remedies moved promiscuously between continents, masters and slaves, and imperial monopolies'.[15] Though Schiebinger described this transmission for the Atlantic World, I suggest that the same concept can be scaled down to smaller regions (i.e. West Indies), and also be applied to other regional complexes (i.e. East Indies). Naval vessels circulated around the station, tying together various theories and therapeutic practices within a distinct regional medical culture interpreted by wider, especially imperial, cultures. By imagining the naval station as a complex with multiple overlapping communities of medical expertise, it is possible to conceptualise regional medical knowledge complexes that existed both separate from and integrated into larger global, imperial, and 'European' knowledge pathways.

I argue that these naval surgeons played a distinctive role as 'knowledge brokers', a term used by global historians and historians of science to describe the individuals acting as intermediaries and agents of empire through the transmission of knowledge.[16] Within this expanded and regional knowledge complex, the naval surgeons became 'knowledge brokers' connecting various global and imperial medical complexes. Examining their efforts to engage with medical science on ship and in colonial stations reveals how they positioned themselves as intermediaries within multiple medical communities and knowledge complexes. Furthermore, naval surgeons sometimes served on ships in several parts of the world, thus exposing themselves to different constellations of knowledge. Rather than remaining fixed in London, Edinburgh, or even one colonial station, naval surgeons were exposed to various regional knowledge complexes. Positioning the naval surgeon as an intermediary, a facilitator or 'broker' between these regional medical complexes allows us to understand their unique participation in medical science. I will demonstrate that the surgeons engaged in a variety of forms of lateral and vertical knowledge-sharing

[14] Schiebinger, 'The Atlantic World Medical Complex', 317.
[15] Schiebinger, 'The Atlantic World Medical Complex', 317.
[16] Simon Schaffer, Lissa Roberts, Kapil Raj and James Delbourgo, eds., *The Brokered World: Go-Betweens and Global Intelligence, 1770–1820* (Sagamore Beach, MA: Watson Publishing International, 2009).

within a global imperial medical complex, which served to expand the medical community in which they were participants.

Collecting Data in the Naval Medical Offices

Central to the development of medical knowledge within the naval medical offices was the collection of data based on observation. The preeminent naval physician and pioneer of early medical trials, James Lind, had noted in the 1762 edition of his *On Preserving the Health of the Seaman*, that his own findings were 'approved by Reason, and established by observation'.[17] The emphasis on observation, typical of this Enlightenment period, was echoed two decades later: Robert Robertson cited Lind when remarking that it was experience, not hypothesis, that formed the basis of medical inquiry.[18] In *Observations on Fevers and other Diseases* (1792), Robertson used data he had collected during his years in service as a naval surgeon to support his theories and recommendations. The practice of drawing on one's own naval medical experience was also present in Gilbert Blane's *Observations on the Diseases Incident to Seamen* (1785) and Thomas Trotter's *Medicina Nautica* (1797–1803). But these two physicians also increasingly relied on the observations and data collected by the surgeons of the fleet to compile their published works. Blane sought not only to 'amass, from my own observation', but also 'by the assistance of the surgeons of the fleet, a number of well-established facts, and to arrange them in such a methodological manner, as to prove a ground work for investigation'.[19] Following Blane's precedent, Trotter did the same, but he admitted that coordinating numerous reports from surgeons in the field into his publication was a logistical nightmare.[20]

The professional medical journals that have been the topic of this thesis were among the sources used by physicians such as Blane and Trotter. Surgeons were also required to provide daily sick lists to the captain and weekly or monthly 'returns'—numerical lists of all those sick, wounded, dead, or discharged from service—to the

[17] James Lind, *An Essay on the Most Effectual Means of Preserving the Health of Seamen in the Royal Navy* (London: D. Wilson, 1762), xi.
[18] Robert Robertson, *Observations on Fevers, and other Diseases, which occur on Voyage to Africa and the West Indies* (London: Joseph Cooper, 1792), xv.
[19] Blane, *Observations on the Diseases Incident to Seamen*, viii. Emphasis mine.
[20] Thomas Trotter, *Medicina Nautica: An Essay on the Diseases of Seamen*, v. 1 (London: Cadell & Davies, 1797), 2 and 22-23.

Sick and Hurt Board.[21] These 'returns' demonstrate how early medical statistics were employed to direct medical care in the military. They focused on specific diseases, geographic locations, or patient populations—all under the auspices of numerical exactitude.[22] This data was used by captains, commanding officers, physicians of the fleet, and the Sick and Hurt Board to direct resources, send reinforcements, and plan military action. In his *Observations*, Gilbert Blane described how the Physician of the Fleet would collect surgeons 'returns' in order to regulate resources and hospitals, and report to the Commander in Chief, thus potentially impacting wartime strategy.[23] In order to guide resources and treatment, Blane argued that, 'there must be a series of patient and attentive observations upon a great number of cases, and the different trials must be varied, weighed, and compared'.[24] Scale was a significant facet of constructing scientific knowledge according to Blane, whose scholarship relied heavily on collated monthly returns from surgeons 'in the field' or, more accurately, at sea.[25]

Gilbert Blane was the pioneer of naval medical statistics and his works provide a good example of how returns data was used to identify medical issues and aid with resource allocation.[26] First published in the *Transactions of the Medico-Chirurgical Society* in 1815, Blane's text *On the Comparative Health of the Navy* used basic statistics to analyse trends in disease from 1779 to 1814.[27] He noted a 'gradual and great diminution of sickness and mortality' in the Navy during the twenty-five-year period of his study.[28] In 1779, 1 in 42 seamen died in service; in 1794, mortality decreased to 1 in 86; by

[21] Admiralty, *Regulations and Instructions* (1808), 281-283.
[22] Erica Charters, 'L'histoire de la quantification: La guerre Franco-Anglaise et le développement des statistiques médicales', *La Découverte: dix-huitième siècle* 1, n. 47 (2015) : 21-38. Medical statistics would come to play a much larger role in the nineteenth-century Navy under the direction of William Burnett, see: David McLean, *Surgeons of the Fleet. The Royal Navy and its Medics from Trafalgar to Jutland* (New York: IB Tauris, 2010).
[23] Blane, *Observations on the Diseases Incident to Seamen*, vi-vii.
[24] Blane, *Observations on the Diseases Incident to Seamen,* ix.
[25] Blane, *Observations on the Diseases Incident to Seamen*, xii.
[26] Charters, 'L'histoire de la quantification'. On the role of medical statistics in state oversight in public health, see W. F. Bynum, *Science and the Practice of Medicine in the Nineteenth Century* (Cambridge: Cambridge University Press, 1994), 60-74; Edward Higgs, *The Information State in England: The Central Collection of Information on Citizens, 1500–2000*, (Basingstoke, UK: Palgrave Macmillan, 2004). On the development of statistics more generally, see Ian Hacking, *The Taming of Chance* (Cambridge: Cambridge University Press, 1990) and Lawrence Goldman, *Victorians and Numbers: Statistics and Society in Nineteenth Century Britain* (Oxford: Oxford University Press, 2022).
[27] Gilbert Blane, 'On the Comparative Health of the Navy from the Year 1779 to the Year 1814', *Selections from the Works of Dr. James Lind, Sir Gilbert Blane and Dr. Thomas Trotter*, Christopher Lloyd, ed., Navy Records Society, v. 107 (London: Spottiswoode, Ballantyne and Co. Ltd, 1965), 175-201.
[28] Blane, 'On the Comparative Health', 175.

1814, only 1 in 143 seamen died in service.[29] Blane linked this general decline to improvements in diet, victualing, cleanliness, and ventilation—many of which had been specifically targeted in recent reforms.[30] Anomalous surges or dips were also accounted for, such as a sharp decline in mortality in 1796, which Blane attributed to the improved provisioning of citrus juices on ships after the provisioning reforms of 1796. A surge of mortality in 1804 was the result of a disastrous outbreak of Yellow Fever in the West Indies, according to Blane.[31] Such analyses were also helpful to identify areas for improvement. According to his multi-decade analysis, pulmonic inflamation, fevers in temperate climates, and fevers and dysenteries in tropical climates were the chief causes of mortality in the Navy.[32] Blane examined numerical data in conjunction with descriptive accounts to identify and interpret patterns. For example, he used the descriptive information present in surgeons' journals to confirm the decline of scurvy as a result of proper victualing.[33]

This data compilation and interpretation was not merely used to direct resources and medical care, but also to stimulate inquiry for improvement. This process of improvement was iterative: 'such is the nature of medical science, that as it is constantly acquiring new accessions of knowledge, from new facts and observations'.[34] But medical science did not exist in isolation from other scientific developments: 'medicine is connected with so many branches of science' and, 'as they improve, it is necessary to incorporate every discovery into our system of health'.[35] This could include nutritional and meteorological science or chemistry, the latter of which was key in discovering new techniques of 'subduing contagion' by the end of the eighteenth century.[36] The debates around nitrous fumigation, as explored in chapter two, are examples of this medical development, adopted by the Sick and Hurt Board, though Trotter was, of course, opposed to the practice of fumigation. As new medical theories superseded the old through this informal process of observation and interpretation, naval medicine continued to adjust its practice.

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[29] Blane, 'On the Comparative Health', 198-199.
[30] Blane, 'On the Comparative Health', 178-185.
[31] Blane, 'On the Comparative Health', 177.
[32] Blane, 'On the Comparative Health', 189.
[33] Blane, 'On the Comparative Health', 179.
[34] Trotter, *Medicina Nautica*, v. 1, 22-23.
[35] Trotter, *Medicina Nautica*, v. 1, iv-v.
[36] Trotter, *Medicina Nautica*, v. 1, 2-3.

Medical improvement was cast as a vital facet of Britain's military success. Blane noted that the free and open circulation of medical knowledge was a matter of national defence when the lives of seamen, 'the bulwark of the state', were at stake.[37] Trotter's *Medicina Nautica* was intentionally published over three volumes in order to add new, updated information as the war went on. He posited that there would be time to elaborate and refine theories at a later date, but swift publication was necessary in order to stimulate medical progress during a period of need.[38] 'Amidst those scenes of war, desolation, disease, and death', Trotter noted in his third volume, 'it becomes the task of the medical philosopher and historian to collect such occurrences as point out the best means of enlarging the sphere of prevention'.[39] The intention was clear: during this period of global warfare and imperial expansion, collecting medical data for the improvement of medical care of the entire naval corps was of vital importance. But just who did Trotter include among the group of medical philosophers and medical historians, and how were they supposed to do this in practice?

In an imitation of Blane's work from the American Revolutionary War (1775–1783), Trotter explained that it was the Physicians of the Fleet who would serve this purpose: 'these physicians will serve as a focus, where every scattered ray is to be condensed', drawing in the data collected by surgeons in the fleet, and, after the interpretation of this information, 'every new idea will again diverge' from these physicians to the fleet 'for the information of the whole'.[40] Trotter, like Blane, centred these calculations on the physicians, but relied on the surgeons to provide this valuable information. This process of creating medical knowledge was entwinned with Trotter's hope to establish a scientific Board to oversee the 'younger members of the profession' and 'watch their labour'.[41] As discussed in chapter one, the Sick and Hurt Board finally had a medical committee after the 1795, but Trotter proposed a science board, which would pioneer further medical inquiry and experimentation. In Trotter's mind, the establishment of such a board would 'stimulate genius and industry' and 'occasionally draw forth valuable talents' from especially enterprising and curious surgeons to

[37] Blane, *Observations on the Diseases Incident to Seamen*, v.
[38] Trotter, *Medicina Nautica*, v. 1, 6.
[39] Thomas Trotter, *Medicina Nautica: An Essay on the Diseases of Seamen*, v. 3 (London: Cadell & Davies, 1803), 2-3.
[40] Trotter, *Medicina Nautica*, v. 1, 22-23.
[41] Trotter, *Medicina Nautica*, v. 1, 22-23.

participate in developing medical science. Trotter framed this scientific engagement as an antidote to their current professional status: the neglect of this class of medical practitioner, with their potential 'left to rust in obscurity', was not only a loss to themselves, but also to 'the country'.[42] However, before his plans could be realised, the Sick and Hurt Board was decommissioned in 1806 and the medical officials transferred to the Transport Board, thus decentralising the naval medical bureaucracy once again.

According to both the Admiralty's regulations and these eminent physicians, naval surgeons were expected to play a fundamental role in the compilation of knowledge as collectors of data. However, the work of interpretation and circulation of findings was largely ascribed to the Physicians of the Fleet and the commissioners of the Sick and Hurt Board. The format of the journals was one that encouraged the deposition of patient information and data within assigned columns, with little space for extensive remarks. As demonstrated in previous chapters, surgeons such as John Collum and Robert Young, often ran over the allotted space in their journals to provide more in-depth remarks to the Board. Benjamin Outram of *La Nymphe* even remarked on the restrictive formatting of the journals: 'the form prescribed for keeping the above journal seems rather intended for a general extract than a diary of practice'.[43] Outram added that he has 'always been accustomed to keep an account of [his] practice', and felt circumscribed in the information he could record in the Admiralty's simplified format.[44] However, some more enterprising surgeons engaged directly in the medical science described by Trotter, in explicitly interpretive and analytical roles. These surgeons aspired to improve their standing and status on their own terms, and they manipulated the space in their journals in order to do so. It is to them we now turn.

West Indies: Intermediaries in Colonial Spaces

Within the journal of surgeon William Warner of HMS *Alfred* was enclosed a smaller, blank-paged journal (**Figure 14**), titled: 'A narrative, with remarks on the malignant fever, commonly though erroneously styled the yellow fever, which appeared on His Majesty's Ship *Alfred* at Port Royal, Jamaica in July 1796 and continued until the end

[42] Trotter, *Medicina Nautica*, v. 1, 22-23.
[43] TNA, ADM 101/110/4B, f. 25, HMS *La Nymphe*, 1797.
[44] TNA, ADM 101/110/4B, f. 25, HMS *La Nymphe*, 1797.

of October following'.[45] Warner styled this insert as an investigation that was at once relevant to include within the medical logbook, while also being materially separate from the case series presented in the logbook, thus drawing a line of distinction between his professional obligations and his scholarly work. Further, the hand in the journal was much neater than the cases in the logbook, with page numbers clearly enumerated at the top, and lines carefully hand-drawn across the page to structure his report. This insert was written up carefully, at leisure, unlike the professional notes written in a rush in the midst of work. The material distinction between the scholarly insert and the Admiralty's pre-printed logbook suggests that the readership was meant to engage with these texts differently. The logbook contained the surgeons' regular daily duties of recording patient cases, whereas the insert offered an observational study, synthesis of medical opinions, and therapeutic suggestions.

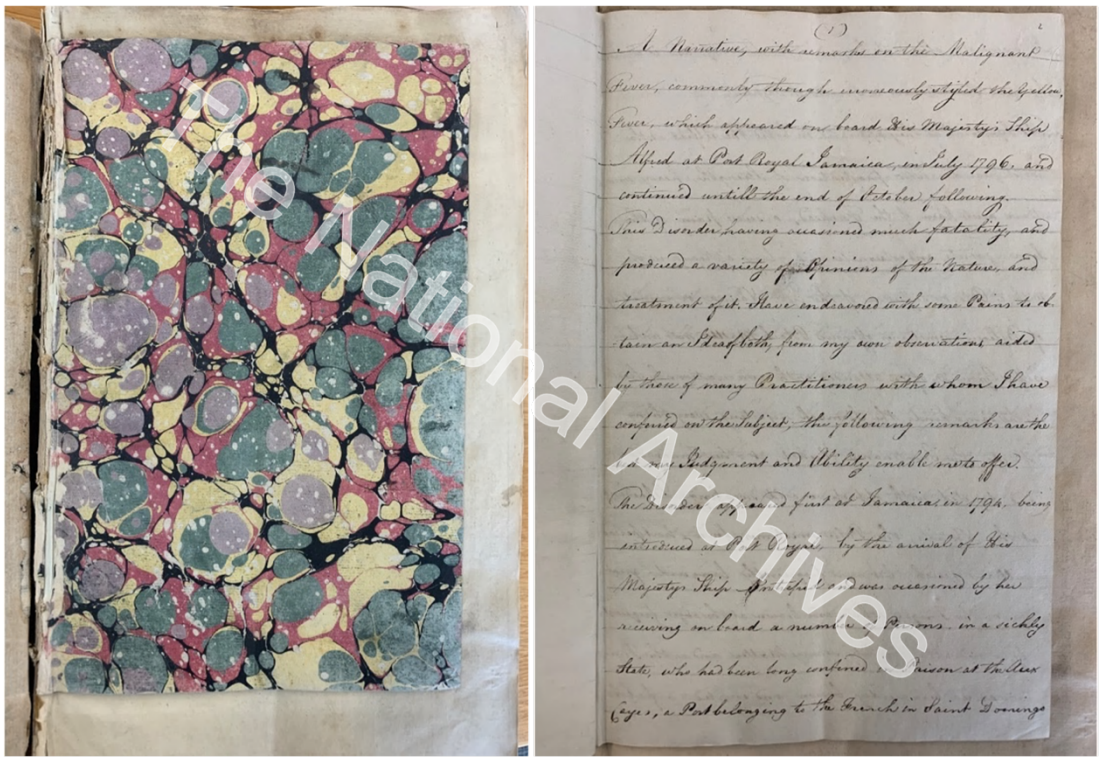

Figure 14. TNA, ADM 101/83/3, HMS *Alfred*, 1796. Marble-designed journal inserted into logbook (left) and the first page of the insert (right). Reproduced with the permission of The National Archives.

[45] Whether this was in fact yellow fever, or another disease, is not the focus of this section. Instead, I interrogate how Warner constructed his examination of this fever and whose medical opinions he included. TNA, ADM 101/83/3A, f. 1, HMS *Alfred*, 1796.

Warner's study included a section in which his patients were grouped by the treatment they received—a format that suggests some analytical intention and comparison. Five categories of treatment were listed, in each of which a near equal number of patients were subdivided: 1) nine patients were prescribed 'emetics'; 2) nine were given 'Bark' (i.e. chinchona); 3) nine were prescribed Doctor James' Fever Powder; 4) ten were given a mixture of calomel, rhubarb, and sapor venet; and 5) nine were prescribed a camphorated and saline mixture.[46] The cases themselves largely followed the typical format of name, age, and rank, followed by a summary of symptoms and disease progression and discharge information. However, this categorisation by treatment undergirded his comparative analysis and subsequent conclusions on the treatment of malignant fever. By grouping the patients together by treatment method to examine common trends in their symptoms and the progression of disease, Warner organised the cases to allow generalised observations on the effectiveness of each treatment, similar to some of the early clinical trials conducted in the military in the latter half of the eighteenth century.[47]

Warner's narrative on fever is also striking for the evidence it provides for his active participation in a broad medical community and an engagement with a 'variety of opinions of the nature and treatment of [the fever]'. He included a synthesis of these medical therapeutics and an analysis of their merits: 'from my own observations aided by those of many practitioners with whom I have conferred on this subject'.[48] This methodology of balancing outside medical opinions and theories with personal observations was common in the journals of more scientifically-minded surgeons, as we will see below. This suggests that these surgeons viewed themselves as contributors to knowledge-building and research within the medical establishment. Warner's narrative reveals who he considered part of this medical community based upon the opinions he drew. The narrative discussed multiple treatments, including emetics, ipecacuanha, and chinchona, and evaluated their merits based on his own observation

[46] TNA, ADM 101/83/3A, f. 15-31, HMS *Alfred*, 1796.
[47] Bynum, *Science and the Practice of Medicine in the Nineteenth Century*, 18-19; Erica Charters, '"The Intention is Certain Noble:" The West Squadron, Medical Trials, and the Sick and Hurt Board during the Seven Years' War (1756-63)', *Health and Medicine at Sea, 1700–1900,* David Boyd Haycock and Sally Archer, eds. (Woodbridge, UK: Boydell Press, 2009), 19-37.
[48] TNA, ADM 101/83/3A, f. 1, HMS *Alfred*, 1796.

of their effectiveness.[49] His discussion of calomel (mercury), bleeding, and spruce beer helps us understand how this knowledge circulated in the West Indies station.

Warner's examination of calomel is particularly informative regarding debate over one of the more established therapeutics. When the fever was rampant on the *Alfred*, Warner states that orders 'from Captain Drury were to send every person the moment of complaining on shore, and in consequence many were sent daily to the Naval Hospital at Port Royal where the use of calomel was much in fashion'.[50] Warner himself was not a devotee of calomel but with increased pressure of the disease and his captain, Warner sent his patients to a naval hospital that used a therapeutic of which he did not approve. In this instance, we can see how Warner's medical authority was circumscribed by his captain due to the ubiquity of this therapeutic. Indeed, it was so prevalent that even non-medical officers participated in spreading information. While dining with a Captain Clark of the 5th West India Regiment, Warner was told that the captain had been 'advised to take ten or twelve grains of calomel weekly in small doses by way of preventative'. Clark told Warner that he was 'happy in the idea of being seasoned to the climate' but he still fell ill a few days later.[51] This encounter with Captain Clark reveals that popular therapeutic practices were even circulated among non-medical practitioners.

Though calomel was a popular treatment method for seemingly any malady, Warner 'was not bold enough to give it [i.e. calomel] the trial as recommended', because he considered it too harsh on the system, and only patients with a strong constitution could 'withstand the effects of so active a ~~Remedy~~ Medicine'.[52] Warner's crossing out of 'remedy' in favour of 'medicine' offer another indication of his disparagement of this therapeutic due to its harsh and sometimes detrimental effects. He noted that he preferred 'simple methods', and he was 'happy it is not a solitary idea, as many of the oldest and most respectable Practitioners of Jamaica, Saint Domingo, Martinique, and other islands, are of the same opinion relative to its Effect and use'. The local disparagement of calomel, which was one of the most common methods of treatment within the British medical establishment, demonstrates the emergence of a

[49] TNA, ADM 101/83/3A, f. 5-6, HMS *Alfred*, 1796.
[50] TNA, ADM 101/83/3A, f. 3, HMS *Alfred*, 1796.
[51] TNA, ADM 101/83/3A, f. 5, HMS *Alfred*, 1796.
[52] TNA, ADM 101/83/3A, f. 3, HMS *Alfred*, 1796. Strikethrough in original.

distinct regional medical culture. In fact, Warner noted that calomel was 'tried sometime at the Naval and Military Hospitals of Mole St. Nicholas and abandoned from the little satisfaction the practice afforded'. Thus, even those formally associated with the British imperial state could be included in this regional medical culture.

Warner's analysis of spruce beer yields insight into how practitioners were aware of trials conducted through the Navy. Spruce beer had been developed during the Seven Years' War as an anti-scorbutic treatment, drawing on indigenous knowledge of the nutritive qualities found in spruce.[53] The military developed a beer from spruce, which was intended to be more palatable to drink, and, as an alcohol, it could be preserved for longer. Unfortunately, the distillation process removed the vitamins that made spruce so effective, though contemporaries were unaware of this at the time. Though spruce beer 'ha[d] been recommended' to Warner, he was aware, 'from information collected from Gentlemen who did [test it]' that it was 'a remedy who ought not to be solely depended on'. Warner cited evidence given from the surgeon of HMS *Dictator* who warned that ten of the thirteen cases died on a spruce beer regimen. Further 'a trial was made of it' at the Hospital of Mole Saint Nicholas without 'satisfactory effect'.[54] Thus therapeutic information was certainly being circulated by practitioners in the Navy within this station, though the mechanisms and locales of communication remain unclear.

Warner's attitude to the longstanding practice of bleeding a patient demonstrates similar scepticism about traditional medical training in Britain. 'Bleeding is recommended by some practitioners', Warner noted, and he 'at one time was induced to think it a reasonable practice', but he 'gave up the idea, considering it but an uncertain and perhaps dangerous experiment'.[55] Warner reported that 'a Navy surgeon of my acquaintance bled in three cases, which he thought favourable to the purpose, extreme debility followed and death soon', and added, 'I have many reports similar from other Gentlemen'.[56] Though we do not know who they were, this provides clear evidence that surgeons were communicating with their medical colleagues outside of their ship, exchanging stories of their practice, and discussing treatments.

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[53] Charters, *Disease, War and the Imperial State*, 24-28.
[54] TNA, ADM 101/83/3A, f. 5, HMS *Alfred*, 1796.
[55] TNA, ADM 101/83/3A, f. 6-7, HMS *Alfred*, 1796.
[56] TNA, ADM 101/83/3A, f. 7, HMS *Alfred*, 1796.

Throughout this investigation, Warner placed himself as a participant within a wider medical community by actively evaluating these treatment methods and drawing on new ideas offered by colleagues. The size and shape of this community, however, was very different to that of physicians of the Royal Colleges in Britain or those practising in the medical schools and hospitals. He actively rejected the theories and practices promoted by the elite learned physicians in Britain and drew upon local sources of knowledge that were by and large not accessible within the Royal Colleges, medical schools, hospitals, and infirmaries of Britain. The moments of contention, where Warner dismisses one favoured method of treatment for another, reveals where these medical communities, and the knowledge complexes built within them, misaligned. In these instances, his geographic context is integral to understanding how he engaged with medical opinion. Warner's navigation of these varied treatment methods depended on his position as a naval surgeon, which provided unique access to information circulated within the military complex.

There was also some contention over the type of fever that was circulating in the region at this time. Warner was not convinced that this fever was, in fact, yellow fever, and he was supported by some within the military: 'Doctor Young, Inspector General of Army Hospital at Martinique with Mr. Gillespie, Surgeon of the Naval Hospital, are of this opinion, and I believe most of the Faculty who have seen much of the disorder'.[57] But the military was not the only source of medical information in the West Indies. Warner also mentioned 'the opinion of Doctor Allenby, the most eminent practitioner of St. Pierre's Martinique, who has observed the fever since the first appearance of it in the Leeward Islands'.[58] After noting down Allenby's favoured method of treatment, Warner explains that the local doctor 'agrees with me that terming [this fever] generally the yellow fever is improper as he surely would have met with it since his residence in the West Indies'. At what point these two men would have connected over a conversation remains uncertain, but this interaction makes it clear that naval surgeons had opportunities to converse with a wide range of practitioners, both within the military complex and in the colonial complex. Warner's journal suggests lateral and vertical communication among multiple practitioners:

[57] TNA, ADM 101/83/3A, f. 9, HMS *Alfred*, 1796.
[58] TNA, ADM 101/83/3A, f. 8, HMS *Alfred*, 1796.

surgeons, doctors, and inspectors within different venues of practice from naval ships, to military hospitals, and even local civilian practice in the colonies.

Warner describes another source of knowledge incorporated into his practice—non-European people. Warner noted: 'the Natives are accustomed to rub the body with lime juice or vinegar in such complaints, and I am informed great benefit often arises from the practice'.[59] He implemented this technique in his own practice when he bathed his patients' foreheads with vinegar, which he claimed 'afforded much relief to the pain'.[60] This practice with lime juice was also mentioned in the journal of Joseph Graham, surgeon of HMS *Bittern*. Stationed in the West Indies in 1798, two years after Warner, Graham suggested that jalap could be used 'against headaches particularly if the head has been previously bathed with lime juice or vinegar'.[61] Though Graham did not mention the indigenous origin of this practice, his offhand mention of bathing foreheads with lime juice or vinegar provides a clear evidence of the circulation of indigenous knowledge at this station, however obscured.

Surgeons rarely provide specific information about non-Europeans, often employing broad terms such as 'native', which served to erase distinct identities into larger artificial categorisations, making it especially challenging to untangle this knowledge. However, Europeans have a long history of searching for and integrating indigenous plants and therapeutics, such as jalap, chinchona, and ipecahuana, into European *materia medica*.[62] The West Indies were home to the Arawak, Carib, and Ciboney, but by the end of the eighteenth century, the main European powers active in this contested space—the Spanish, French, and British—had largely displaced and marginalised the Ameridian peoples. The islands were also home to enslaved peoples from the African continent, who brought their own medical knowledge from West Africa. Scholars have done superb work describing West African contributions to *materia medica* as well as the fusion of African and Ameridian knowledges within the

[59] TNA, ADM 101/83/3A, f. 11, HMS *Alfred*, 1796.
[60] TNA, ADM 101/83/3A, f. 11, HMS *Alfred*, 1796.
[61] TNA, ADM 101/91/1, f. 67-68, HMS *Bittern*, 1798.
[62] Londa Schiebinger, 'Prospecting for Drugs: European Naturalists in the West Indies', in *Colonial Botany: Science, Commerce, and Politics in the Early Modern World*, Londa Schiebinger and Claudia Swan, eds. (Philadelphia: University of Pennsylvania Press, 2007), 119-133; Linda Newson, *Making Medicines in Early Colonial Lima, Peru: Apothecaries, Science and Society* (Amsterdam: Brill, 2017); Stefanie Gänger, *A Singular Remedy: Cinchona Across the Atlantic World, 1751–1820* (Cambridge: Cambridge University Press, 2020); Londa Schiebinger, *Plants and Empire: Colonial Bioprospecting in the Atlantic World* (Cambridge, MA: Harvard University Press, 2021).

colonial plantation system.[63] In fact, Londa Sheibinger found mention of a local British practitioner in the West Indies who described a treatment method for headaches used by enslaved Africans: 'a leaf of tobacco steeped in palm wine, lime juice, or spirits to the temples'.[64] This example suggests that this therapeutic practice was a fusion between Ameridian and African treatment methods within the West Indies plantation system. Though there is clear synthesis of ingredients and practices in this method, the presence of lime juice for the treatment of headaches implies that this medical knowledge was embedded within the West Indies medical knowledge complex.

Recovering use of this therapeutic practice among British practitioners at the West Indies station is striking on its own, but uncovering the circulation and absorption of this practice into local naval medical practice is far more difficult. If we visualise knowledge transfer within regional medical complexes, as defined by Schiebinger, then naval stations become entangled multifocal points of contact. As such, the knowledge or practice of the station reflects a common knowledge, through time and space, disseminated through a flow of military and colonial medical practitioners. This diffusion is organic, fluid, and sometimes has no clear node of transfer within a network. This de-prioritises a single agent, interpreter, broker, emissary, or envoy and similarly de-prioritises European methods of knowledge transfer relying on literacy, bureaucratic record-keeping, and exchanges within structured networks. In visualising regional complexes of shared knowledge, it is easier to see how indigenous and enslaved peoples may have contributed to it within the plantation paradigm and how this knowledge could be learned and employed by naval surgeons during a brief tenure at one station. This exchange of medical knowledge from local indigenous peoples provides a rare insight into the often-concealed involvement of non-European peoples in the construction of medical knowledge.

Though rare, other journals contain evidence scrawled in margins or as annotations to the surgeons' main text further reveal knowledge transmission between naval surgeons and non-Europeans. Peter Henry's journal for HMS *Daedalus*, stationed in the East Indies in 1802, demonstrates his active interest in learning about the

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[63] Londa Schiebinger, *Secret Cures of Slaves: People, Plants, and Medicine in the Eighteenth-Century Atlantic World* (Stanford: Stanford University Press, 2017).
[64] Schiebinger, *Secret Cures of Slaves*, 47. The original text can be found here: Richard Shannon, *Practical Observations on the Operation and Effects of Certain Medicines in the Prevention and Cure of Diseases to Which Europeans Are Subject in Hot Climates, and in These Kingdoms* (London, 1794), 380.

medicinal uses of exotic plants. In the margins of his ship journal, he noted his purchase of a fragrant green oil, distilled from 'the leaves of *kaioo pootee* tree', procured from the Malay dispensary at Ambon in the Molucca Islands (modern Malaysia). 'The medicinal virtue of this oil is not well known', Henry explained, and 'few practitioners can afford putting it to the test' at a cost of '10 Spanish dollars a bottle at the place where it is made'.[65] This did not seem to deter Henry, who took advantage of his location at Ambon and, 'having obtained a few bottles' decided to 'put it to trial' when 'a fair case offers', following 'the true criterion of every article of physic'.[66] This plant was known to have medicinal properties, but precisely what these were was unknown. Due to the cost of the oil, the medicine was not especially accessible, which meant that it was unlikely to be purchased in large quantities by the Navy for trialling. Though surgeon Henry intended to conduct a trial on his patients, the only other mention of it in his journal was its use on one rheumatic seaman, John Newman, who was eventually invalidated. Nevertheless, this marginalia suggests that by the early nineteenth century surgeons were actively exploring the medical utility of exotic plants in stations abroad.

These brief but intriguing mentions of lime juice and green oils offer a unique glimpse of non-European actors involved in these 'complexes' of medical knowledge, but they are often only caught in the margins of the patient case notes, thereby underscoring the colonial power dynamics at play in the construction of knowledge. Warner of the *Alfred* provides an example of how surgeons engaged in medical inquiry, experimenting with different therapeutics, interpreting findings, and collecting knowledge from a wide range of sources. Naval surgeons used their intermediary position in foreign stations providing them with a very different constellation of sources of medical knowledge to practitioners back in Britain. Their medical community expanded to incorporate new methods of treatment as well as new understandings of disease. Surgeons interfaced with practitioners from military hospitals, fellow naval surgeons, ship captains, and local colonial doctors, even absorbing indigenous knowledge into their practice and study of therapeutics. As such,

[65] TNA, ADM 101/96/1, f. 32-33, HMS *Daedalus*, 1802. This plant is the *Melaleuca cajeputi* which can be found in Richard Powell, *The Pharmacopoeia of the Royal College of Physicians* (London, 1809), 21-22, or in Georg Rumphius' *Herbarium amboinense,* II, cap. XXVI (Amsterdam, 1741), 76, under *Arbor alba minor.*
[66] TNA, ADM 101/96/1, f. 32-33, HMS *Daedalus*, 1802.

they operated as the perfect 'brokers' of knowledge, acting as intermediaries between these different knowledge complexes at a regional level and further abroad.

Cape of Good Hope: Disease Susceptibility and the Imperial Project

Situated off the southern coast of Africa in 1812, surgeon John Tweedy Todd of HMS *Lion* kept a very different journal to that requested by the Admiralty. His journal began with a full examination of the climate and meteorology of the Cape of Good Hope and its impact on disease burden. Though the latter half of his journal still held the typical logbook entries of his patients, the first half was structured as an analytical essay on the effects of Cape climate on disease susceptibility, supplemented with charts and tables that filled the logbook pages with meteorological data (see **Figure 15** for one example). This section will focus on how surgeons positioned their scientific usefulness within the naval medical bureaucracy as interpreters of data themselves. As I will demonstrate, Todd was casting himself as his own 'centre of calculation' at the Cape colony, perhaps as a result of the decommissioning of the Sick and Hurt Board in 1806, which decentralised the medical authority.

Climate was a common factor linked to disease susceptibility, and naval surgeons were in a prized position to remark upon the differences in disease patterns between tropical and temperate climates. It was a commonly held belief among medical practitioners that European crew members suffered more than their non-European peers due to their lack of acclimatisation to the tropics, a topic thoroughly examined by scholars.[67] The maintenance of troop health in tropical climates was a defining feature of eighteenth and nineteenth-century military medicine.[68] What was unique about Todd's journal, however, is the detail he went into in his analysis to understand the climate of the Cape and its correlation with disease rates. The first half of his journal presented 'a view of the climate of the Cape of Good Hope […] first as it

[67] Suman Seth, *Difference and Disease: Medicine, Race, and the Eighteenth-Century British Empire* (Cambridge: Cambridge University Press, 2018); Mark Harrison, *Climates and Constitutions: Health, Race, Environment and British Imperialism in India, 1600–1850* (Oxford: Oxford University Press, 1999).

[68] Tim Lockley, *Military Medicine and the Making of Race: Life and Death in the West India Regiments, 1795–1874* (Cambridge: Cambridge University Press, 2020); Michael Joseph, 'Military Officers, Tropical Medicine, and Racial Thought in the Formation of the West India Regiments, 1793–1802', *Journal of The History of Medicine and Allied Sciences* 72, n. 2 (2017): 142-165; Erica Charters, *Disease, War, and the Imperial State*; Kelly, *War and the Militarization of British Army Medicine.*

relates to disease' and 'second as it relates to meteorology in general'. [69] Due to the unique environment off the southern tip of Africa, Todd explained that 'the divisions of climate implied by the terms torrid, temperate, and frigid zones are of little assistance in this investigation'. Instead, Todd endeavoured to provide a more nuanced account as a 'medical philosopher'.[70] This self-assignation of 'medical philosopher' implies participation in a medical elite, alongside figures such as Trotter and Blane. It is also worth noting that Todd later played out this scientific identity elsewhere, this time as a natural historian; in the *Philosophical Transactions*, Todd published zoological accounts of stingrays he had encountered off the Cape of Good Hope in 1812, presumably while stationed on this same ship.[71]

On HMS *Lion*, Todd positioned his investigation on climate as benefiting both medicine and the 'science of meteorology', echoing Trotter's stance on the inextricable link between scientific and medical development.[72] Todd stated that 'meteorological observations are useful principally as they regard the medical or agricultural history of a country' but these could be expanded to encompass the whole world 'by recording a multiplicity of particular phenomena' and making generalisations from this data.[73] Todd believed it was the 'the duties of my profession' that required he first interrogate the 'useful application' of meteorology to medicine, but 'the natural progress of the mind from individual facts to scientific relations' led him to endeavour in the compilation of a meteorological study that he felt may one day be global in nature. His profession as a naval surgeon, required him to consider practical, applicable knowledge, but he found himself naturally drawn to a higher level of interpretation, situated outside the mandates of his prescribed duty. In fact, he seemed to envisage a dialectic between applicable, practical data, or 'individual facts', and the inquiry into 'scientific relations'—that is, how these facts relate to one another in the creation of something wholly new. This same dynamic was evoked by Gilbert Blane and Thomas

[69] TNA, ADM 101/106/4, f. 1, HMS *Lion*, 1812.
[70] TNA, ADM 101/106/4, f. 1, HMS *Lion*, 1812.
[71] John Tweedy Todd, 'Some observations and experiments made on the torpedo of the Cape of Good Hope in the year 1812' *Philosophical Transactions of the Royal Society of London* 106 (1816): 120-126.
[72] For more on the historical development of meteorology see Jan Golinski, *British Weather and the Climate of Enlightenment* (Chicago: Chicago: University Press, 2010); and on the Royal Navy's specific interests, see Naylor, 'Log Books and the Law of Storms'.
[73] TNA, ADM 101/106/4, f. 1, HMS *Lion*, 1812.

Trotter, as seen above, when they discussed the use of medical data to guide resources and shape policy, as well as extending medical and scientific development.

'For the sake of accuracy, I intend to pursue the following plans' Todd noted before enumerating the methods that guided his investigation.[74] He sought 'to examine the medical affections of the Cape of Good Hope by analogical inferences drawn from the experience of similar countries'. This would allow him to make connections between mean temperatures and disease 'by reasoning priori' followed by the known 'medical history of the Cape of Good Hope'. In other words, comparing regional experience to broader global trends. He also explains the limitations of his analysis:

> The influence of particular habits and customs, mode of living, and effects of previous diseases, as the object of enquiry is summary, does not fall within the limits of this paper.[75]

Todd clearly cast his work as 'a paper' building on previous knowledge and contributing to medical scholarship, and he envisaged future studies building on his examination of the climate of the Cape of Good Hope. Todd's clearly articulated methodology was meant to outline his investigation so readers could follow his line of inquiry and identify further potential avenues for investigation. Aside from a clear intention to share this information with the Sick and Hurt Board, as it was stored within his logbook, it is entirely possible that this was a draft of a manuscript intended for submission to a medical periodical or pamphlet, though I have not been able to find evidence of its publication. Nevertheless, the form, style, and structure clearly indicate the performance of a medical identity, producing work intended for public consumption, stylistically in line with publications within the British medical establishment.

The methodology of Todd's study is just as telling as his aims. Rather uniquely, Todd had 'analysed as many journals of others as [he] could possibly attain' in this region before beginning his analysis. This suggests that he had access to other ship journals in some capacity, though he remains opaque about the details of this source of knowledge. Nevertheless, this certainly suggests that the synthesising and interpretation of these journals was not only occurring in Britain by the Sick and Hurt Board but could equally be undertaken by a ship surgeon off the Cape of Good Hope.

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[74] TNA, ADM 101/106/4, f. 3, HMS *Lion*, 1812.
[75] TNA, ADM 101/106/4, f. 3, HMS *Lion*, 1812.

There are also indications that Todd drew on other sources of knowledge, including medical publications, which we will discuss further below. These textual sources would form the basis of Todd's historical understanding of disease prevalence in southern Africa, which he combined with his own observations and analysis using various scientific instruments and patient observations. He claimed that the minutiae of meteorological phenomena were 'only to be supplied by correct and attentive observation'. Thus, being *in situ*, in the actual location of study, Todd positioned himself as best placed to provide a more thorough investigation, thus distinguishing himself from the centres of calculation in Britain.

Todd would later publish a book on his methodology for medical inquiry in 1831, after receiving a medical degree and being inducted to the Royal College of Physicians. His *Book of Analysis* described a new interdisciplinary methodology for medical inquiry that included an analysis of various subdisciplines in natural philosophy, natural history, metaphysics, and the economy.[76] What is most striking about this publication is the use of tables to structures and organise data based on different classes of disease, causes, signs, and symptoms. This commitment to Baconian induction among 'Gentlemen of Science' was prevalent in Britain in the 1820s and 1830s.[77] But it is impossible not to notice the similarities between the methodology advocated in this 1831 publication and its earlier use in his journal for the *Lion* in 1812.

The structural organisation of Todd's study from the ship decks of HMS *Lion* reveals a clear analytical intent. The first half of his journal was subdivided into six sections, each of which examined a different component of meteorology: 1) mean temperature; 2) atmospheric pressure; 3) winds; 4) weather, by which he meant proportion of sun and rain; 5) humidity; and 6) the 'electricity of atmosphere'. In his introduction, Todd listed the scientific questions he hoped to answer through his observations, such as: 'The mean temperature of the years, seasons, and months, comparing them in different situations of the same place and with the same of other

[76] John Tweedy Todd, *The Book of Analysis, or a New Method of Experience; Whereby the induction of the novum organon is made easy of application to medicine, physiology, meteorology, and natural history; to statistics, political economy, metaphysics, And the more complex departments of knowledge.* (London: John Murray, 1831).
[77] Richard Yeo, 'An Idol of the Market-Place: Baconianism in Nineteenth Century Britain' *History of Science* 23, n. 3 (1985): 251-298; Richard Yeo, *Defining Science: William Whewell, Natural Knowledge and Public Debate in Early Victorian Britain* (Cambridge University Press, 1993).

countries, its relation to the production, propagation, and prevention of disease', and 'Weight of the atmosphere for years, seasons, and months. Have the differences of pressure any relation to disease?' The remaining pages in this half of the journal were subdivided into each of the six sections on meteorological phenomenon, which included numerical tables of data and a summary of conclusions based on the data and other pertinent observations he made during his investigation.

Todd focused on the impact of each particular meteorological phenomenon on each class of disease: Febres, Phlegmaniæ, Exanthemata, Hemophagia and Profluviæ, Neurosis, Cachexiæ, and Ulcers and Vulnus. Notable effects of the meteorological phenomena on each of these classes of diseases were then recorded. The use of this Latin classification system is another indication of Todd's self-identification as a medical philosopher. Nosology, or the classification of diseases into class, order, and genus, was a common pedagogical tool in the late eighteenth century, inspired by the Linnean classificatory system applied to the natural world. In a medical context, nosology is most frequently associated with the lectures offered by William Cullen at Edinburgh's medical school from 1770 to 1789.[78] Cullen's nosological methods were also published in Latin, and thus available to those outside of Edinburgh medical school.[79] By drawing on Cullen's nosology in Latin, Todd was making a claim to his participation in a community of medical philosophers interested in medical inquiry by using intellectual markers that would have been recognisable to those in the 'medico-gentility'.

The section on mean temperatures provides an example of Todd's methodology and the intended impact of his study. Todd provides four tables of mean annual and monthly temperature readings for the Cape of Good Hope in comparison to other mean temperatures around the globe, including Bordeaux, Peking, Edinburgh, Stockholm, Jamaica, and Japan (see **Figure 15**). Todd's analysis revealed where gaps in medical knowledge existed between theoretical understandings of disease and those based on his own personal experience or local historical accounts from the Cape. For example, his examination of 'the relations of mean temperatures to the laws of diseases' compared *a priori* reasoning to the known history of disease in the Cape colony.

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[78] Lisa Rosner, *Medical Education in the Age of Improvement: Edinburgh Students and Apprentices, 1760–1826,* (Edinburgh: Edinburgh University Press, 1991), 52, 57, and 74.
[79] William Cullen, *Synopsis nosologiae methodicae* (Edinburgh: A. Kincaid & W. Creech, 1772).

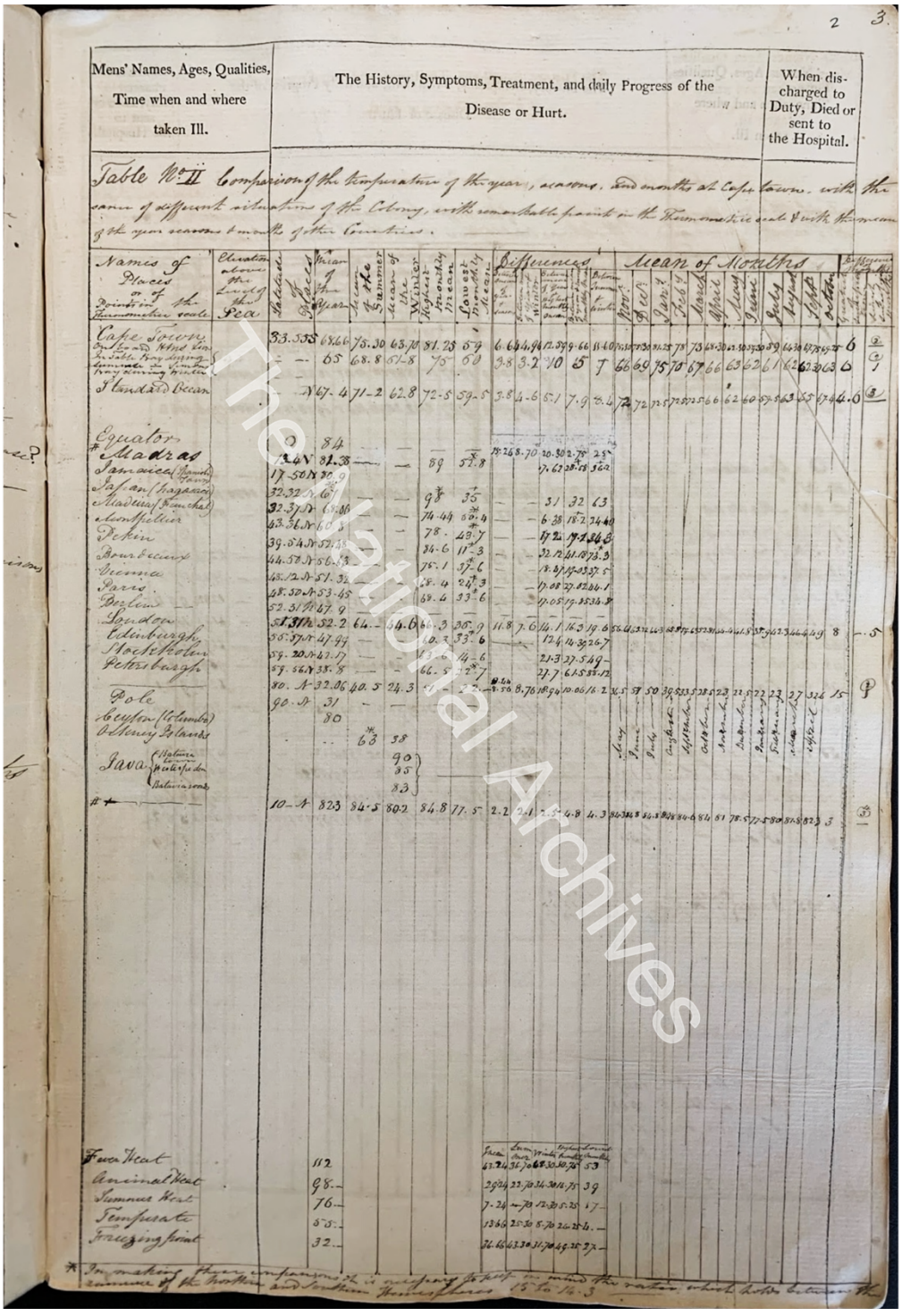

Figure 15. TNA, ADM 101/106/4, HMS *Lion*, 1812: Table II 'Comparison of the temperature of the year, seasons, and months at Cape Town with the same of different situations of the Colony'. Reproduced with the permission of The National Archives.

These differing methods of acquiring knowledge to determine disease patterns often produced results at odds with one another. On fevers, Todd explains that 'whatever may be the cause of yellow fever, a mean temperature of 75° is sufficient to support it', while 'typhus would not exist as an epidemic with a temperature as high as 63°'.[80] Then, drawing from the medical history of the region, Todd notes that the typhus was rare and 'yellow fever has never happened' in the Cape. Todd further noted that the high temperatures of this climate should be unfavourable to variola and rubeola, yet 'variola and rubeola have appeared epidemically at different times, in very malignant form' in the Cape colony. Further, since 'pestis [plague] is said to owe its existence to temperature alone', in a range between 68 and 70 degrees, Todd concluded that: 'it is probable therefore that it would exist at the Cape of Good Hope'. The practical application of this information was summarised in his conclusions where he noted 'that the peculiarities of this climate render it very liable to pestis, and consequently imposes a salutatory caution'. Thus, Todd's examination of mean temperatures highlighted where disease rates based on climate theory differed from the regional history or his lived experience.

Surgeon Todd's study used a variety of sources to construct knowledge on the effects of meteorology on disease aetiology and progression. These sources included a synthesis of other surgeons' (unpublished) journals, regional accounts, and histories, though how he acquired these remains unclear. His own data, acquired through direct observation with the aid of instruments to measure temperature, humidity, and other meteorological phenomena, was placed in contrast with weather and climate findings from other regions, suggesting that he also had access to this data in some format, whether he brought books on ship with him or consulted libraries in the Cape. His use of William Cullen's nosology has already been discussed above, but there is also evidence he read medical periodicals. When considering atmospheric pressure, Todd states '*we* can have no hesitation in admitting that the removal of all pressure would be attended with fatal consequences' for the human body; 'this *we all* know has been

[80] TNA, ADM 101/106/4, f. 4, HMS *Lion*, 1812.

frequently exemplified with experiments on some of the smaller animals'.[81] Todd was clearly well-read, but the explicit use of 'we' also suggests that he was integrated into a broader scientific community and thus familiar with these experiments. This does not reflect a passive participation in a broad scientific community but rather the construction of a professional identity as a medical philosopher actively involved in the construction of knowledge through observations and experiments.

An understanding among surgeons of the severity of certain illnesses in the climates in which they practised medicine served an obvious practical purpose for a Navy transporting hundreds of men across the globe, necessitating that we acknowledge the imperial forces that guided their practice. Surgeon Todd concluded his study of the climate of the Cape of Good Hope with the following remark: 'the influence of the annual state of the climate is consequently auspicious', though he does not specify to what end.[82] However, his study on the correlation between climate, weather, and disease on the southern tip of Africa was positioned to enable imperial expansion and global warfare. Naval surgeons' interest in and examination of disease susceptibly in foreign climates served a very practical purpose: it enabled the fleet to continue to operate efficiently in foreign locations.

East Indies: Agents of Empire

Much like surgeon Todd on the *Lion*, surgeon W. H. Banks of HMS *Hussar* organised his journal in a manner that facilitated generalised analysis of diseases. However, he was focused on climate and activity, and its correlation to disease. Stationed in the East Indies in 1812–1813, Banks divided his journal by classification of disease, thus indicating a more systematic inquiry into the diseases experienced under his watch. Throughout, Banks emphasised his unique position on ship, basing his remarks on practical, empirical observations. As I will argue, Banks was making a claim about the naval surgeon's particular role within the naval medical offices as the key actor in this transmission of knowledge within the imperial medical complex. Though not all surgeons were as explicit as Banks, the way he articulated his role in the imperial project warrants analysis here.

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[81] TNA, ADM 101/106/4, f. 7, HMS *Lion*, 1812. Emphasis mine.
[82] TNA, ADM 101/106/4, f. 10, HMS *Lion*, 1812.

Instead of the chronological case notes expected by the Admiralty, Banks created sections in his journal with subheadings for different diseases, such as 'Fevers', 'Venereals', 'Ulcers', and 'Wounds'. In each section, Banks provided little individualised information on his patients except for their name, rank, age, dates on the sick list, and discharge information. Signs, symptoms, and treatment plan were all omitted. As we can see for fevers in **Figure 16**, Banks provided a returns table in which each episode was tabulated in a hand-drawn chart at the bottom of the journal's page. Following the patient list and table, Banks then wrote an essay on each disease experienced on board in which he analysed the aetiology and progression of the diseases and postulated on the various factors that affected disease progression. Given the format, it is perhaps most likely that Banks kept a more traditional logbook with patient cases in chronological order that he used to compile this more analytical version; however, this is the only journal from Banks that survives in ADM 101.

To explore these ideas, we will focus on Banks' section on fevers.[83] The *Hussar*'s crew experienced a number of different fevers—categorised as 'slight', 'bilious remittent', and 'continued'—in the twelve months of their voyage. After listing the basic patient information, Banks compiled a table with the number of patients afflicted by each type of fever, the location and leg of the journey the illness occurred, and how many patients were discharged to duty, invalidated, hospitalised, deceased, or transferred as a patient case into the next journal (transcribed in **Table 1**).

Place	Year	From	To	Slight Fever	Bilious Remittent Fever	Continued Fever	Duty	Inval.	Hosp.	Died	New Journal
Diamond Harbour	1812	Oct 10	Nov 8	1	33	7	40	1			
Passage from Calcutta to Bombay	1812	Nov 8	Jan 1	2	7	3	11	1			
Bombay and passage to Bengal	1813	Jan 4	Mar 15			11	11				
Saugor & Passage to Sambas	1813	Mar 15	July 1			6	6				
Sambas Batavia, & Palambang	1813	July 1	Sept 1	5	23	2	25		1		2
Passage to Madras	1813	Sept 8	Oct 9		9		8			1	1
				8	72	29	94	2	1	1	3

Table 1. Transcription of table in W. H. Banks' General Return of Fever, HMS *Hussar*, 1812–1813.

The table stresses first and foremost, the time and place of the cases, followed by a specification of the type of fever and number of patients afflicted on each leg. In presenting his data, Banks seems keen to demonstrate the correlation between the

[83] TNA, ADM 101/104/6, f. 2, HMS *Hussar*, 1812–1813.

ship's mobility, seasonality, and type of fever, drawing on theories of climate and weather. This numerical data reveals that rates of both 'slight' and 'continued' fevers

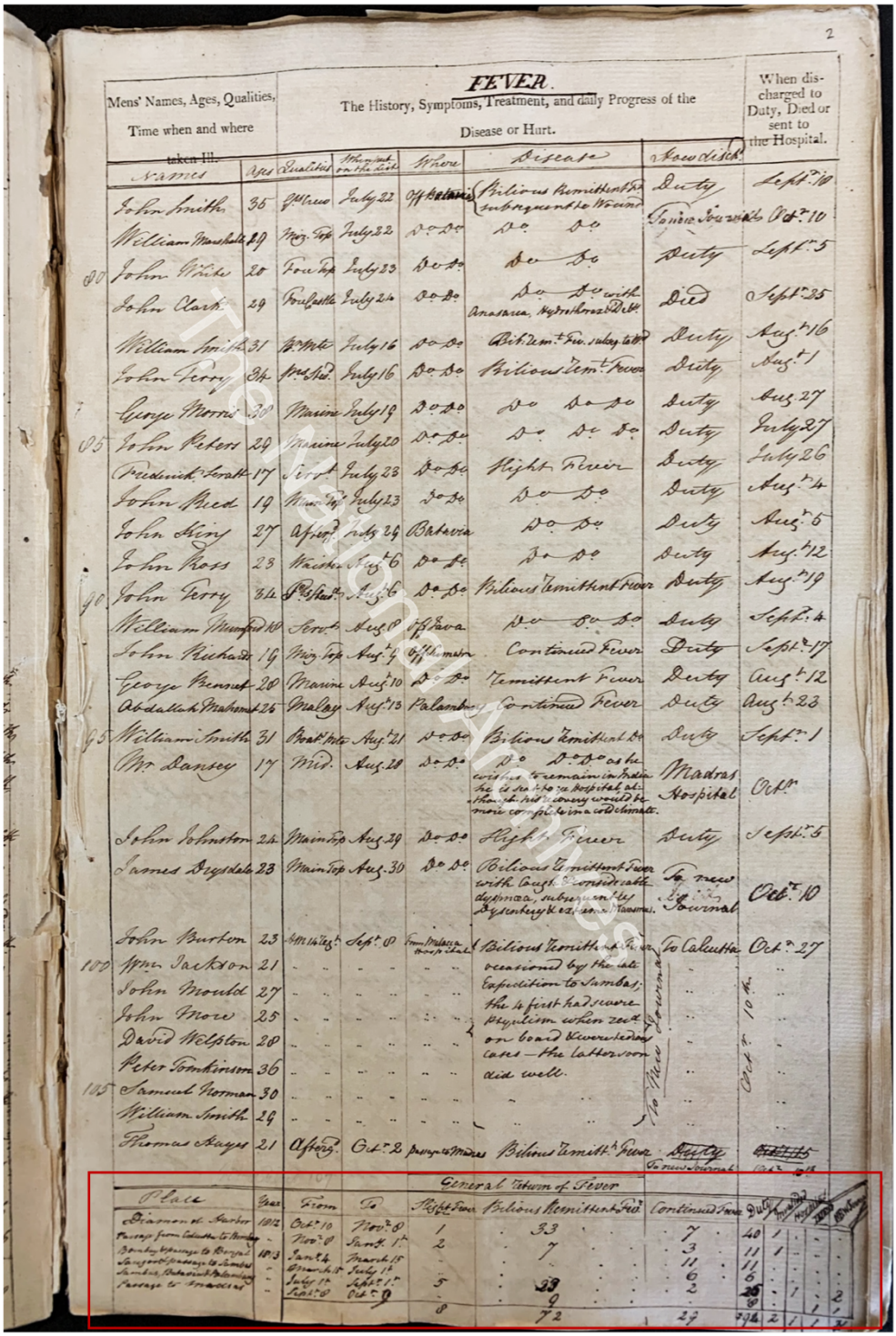

Figure 16. TNA, ADM 101/104/6, HMS *Hussar*, 1812–1813. Section on Fevers. Reproduced with the permission of The National Archives.

remained relatively stable through the year, with the continued fevers carrying a higher morbidity and a slight uptick in cases between Bombay and Bengal in the first months of 1813. The cases of 'bilious remittent fever' were more prevalent at Diamond Harbour (Calcutta) in October 1812 and at Sambas in Batavia in July and August of 1813. The number of cases of this subtype of fever in these locations clearly interested Banks as they would feature heavily in his essay, written across the following dozen folios.

This compilation of patient data into tabulated numerical data to identify significant trends for further analysis is exactly the same sort of statistical analysis that would soon come to define Gilbert Blane and his impact in the Navy, as described in an earlier section of this chapter. Banks's case, though certainly atypical among the journals I have examined, shows that some surgeons on these ships were also inclined to participate in this early quantification of patient data. Banks decided he was best suited to do the analysis rather than leaving the raw data for the Board. This shift in recording and presenting information numerically as a synthesis, rather than as an abbreviated case series, was part of a broader trend in defined medical recordkeeping.[84]

After the table, Banks turned to analysis and interpretation of the data. Banks began his essay on fever, noting 'the frequency, obstinacy, and fatality of the fevers of hot climates' which 'necessarily impress our minds with sorrow'.[85] But the prevalence of these fevers also encouraged 'us', by which we can presume he referred to the naval medical branch, 'to persevere with energy in the arduous task' of investigating their causes. Banks was drawn to a more systematic study of the diseases experienced under his watch and planned to investigate 'the various remote approximate causes, the several phenomena, symptoms, and appearances of the disease'. His numerical compilations served to identify key areas for inquiry. He was less interested in those 'confined to solitary cases', and favoured analysis of those 'so general as to claim attention in the progress and treatment of similar fevers'.

To understand the causes of such a high case load in these tropical climates, Banks considered disease aetiology, symptomology, and other contributing factors. He covered a variety of topics in his essay such as location, climate, and diet, but also the

[84] Volker Hess and J. Andrew Mendelsohn, 'Case and Series: Medical Knowledge and Paper Technology, 1600–1900', *History of Science* 47 (2010): 287-314.
[85] TNA, ADM 101/104/6, f. 2, HMS *Hussar*, 1812–1813.

physiological and psychological effects of military engagements and the characteristics and temperaments of the types of patients most affected. This holistic assessment of health required that the collector and interpreter of these data be situated on the ship and alongside the men, rather than back in Britain. Further, the language used by Banks when describing the fevers allows us to examine the medical theories and publications upon which he was drawing, thus inserting him within a broader medical community outside of his ship.

For example, on the fever that erupted in October of 1812 at Diamond Harbour outside Calcutta, he noted: 'the vacancies made by this mortality were chiefly filled with young men recently from Europe, some of whom were plethoric to a degree bordering on inflammation, while others were full blooded young men with fluids vitiated by salt diet during a long voyage from England'.[86] The table did not record any deaths on the *Hussar* at Diamond Harbour, so it is possible that Banks was relaying information he acquired from other ship surgeons in the region. More interesting is His discussion of diet and 'vitiated fluids', revealing that he was drawing upon the revised theories of Gilbert Blane and Thomas Trotter in the 1780s and 1790s, that described scurvy as a deficiency disease, rather than one caused by putrefaction.[87]

In his essay on fevers, Banks took into account the men's age, general health, and diet, as well as considering their prior exposure to the climate and the exhausting journey that preceded their service. This level of detail suggests that he was working off another journal for daily practice that does not survive. Banks explained each symptom and how it manifested, the treatments he used, and which were the most effective, before drawing up a list of enumerated conclusions. He concluded that the fever at Diamond Harbour was caused by a shift from 'extreme heat and excess oxygen in the atmosphere during the day', which resulted in 'a diminution of sensorial power' that prevented the body from 'remit[ing] the effects of cold damp air'. It was the extreme exertion of this 'sensorial power', which included 'violent increased arterial action' that gradually 'exhaust[ed] the powers of the system', leading to death.[88] In this description, there are clear hints that Banks was drawing Erasmus Darwin's *Zoonomia* (pub. 1794–1796) in which Darwin theorised about the 'sensorial power' of animals

[86] TNA, ADM 101/104/6, f. 3, HMS *Hussar*, 1812–1813.
[87] Mark Harrison, *Medicine in an Age of Commerce and Empire*, 241.
[88] TNA, ADM 101/104/6, f. 3-4, HMS *Hussar*, 1812–1813.

that provided a 'spirit of animation'.[89] Thomas Trotter also ascribed to this theory and discussed it in *Medicina Nautica* (1797) in relation to Yellow Fever in the West Indies.[90]

When describing a fever that followed an attack on the Batteries of Sambas, months later, Banks demonstrates a similar propensity towards empirical observation and deep, holistic inquiry to ascertain the manifold causes of the disease and the most effective treatment. The seamen, who would succumb to the fever thirteen days later, had been in charge of clearing a path in the jungle for five to six hours for passage of the troops. On this, surgeon Banks wrote: 'thus performing the most arduous, and the most laborious duties, they wrought continually while the troops rested frequently until a clear road was made for them'. Here, Banks articulated subtle disdain for the passivity of the Army troops in contrast to the labouring seamen.[91] Later, the seamen were at the forefront of the assault and tasked with carrying the ladders—and thus doing all the work, Banks implied—despite losing their shoes at some point during the trek, and suffering numerous injuries as wooden spikes placed around the batteries tore through the bones and tendons of their feet. These injuries became significant when, two weeks later, fevers ravaged the wounded from the battle and surgeon Banks evaluated whether these men were suffering from tetanus.

Banks' assessment of this episodes of fever at Sambas highlights his proximity to his patients and direct involvement in their lives. After many discursive ramblings, Banks concluded that it was the extreme labour, excitement, and exhaustion leading up to and through the battle, followed by a long period of rest and complacency while wounded on ship, that led to the fever. Without the ability to stand on their injured feet, the men were languid, unable to exercise, and 'inactive in body'.[92] Their spirits were depressed as well after such excitement and action, including the disappointment over the 'unproductive result' with its lack 'of pecuniary advantage'—in other words, no plunder or prize money was gained from this expedition.[93] The seamen waited, injured and recovering on board, as the battle carried on for over a week. Banks noted the lack of diversion was punctuated by occasional bouts of curiosity, novelty, and excitement when boats or news returned to the ship. Banks' descriptions make clear

[89] Harrison, *Medicine in an Age of Commerce and Empire*, 242.
[90] Trotter, *Medicina Nautica*, v. 1, 334-336.
[91] TNA, ADM 101/104/6, f. 4, HMS *Hussar*, 1812–1813.
[92] TNA, ADM 101/104/6, f. 5, HMS *Hussar*, 1812–1813.
[93] TNA, ADM 101/104/6, f. 5, HMS *Hussar*, 1812–1813.

that he was attributing these fevers to 'nervous disorders' or 'nervous excitability'—theories that were becoming increasingly prevalent in the early nineteenth century. Trotter himself increasingly ascribed to this theory which attributed emotional excitability, languor, and any other kind of under- or over-stimulation of the mind or body to disease.[94] James Johnson, a naval surgeon stationed in India and East Indies around the same time as Banks, would come to publish a book in 1818 discussing the role of the nervous system in regulating bowel disorders.[95]

Banks' holistic approach to the physical, mental, and emotional state of the men led the surgeon to conclude that these constant fluctuations underlined by general debility brought on the fever. The fever itself manifested in alternating hot and cold fits, and relapses were common. The single most effective cure that Banks applied was 'cold affusion', a practice whereby the sick would be cooled down quickly with buckets of cold water thrown atop them and subsequently dried with flannel. Banks ends his essay on fevers with an example of this technique of cold affusion used to immediate benefit; 'A fact', he reasoned, 'will also tend to illustrate more fully than long a studied reasoning the high degree of power which this remedy possesses in all diseases attended with pyrexia [fever]'.[96] Similar to Warner on the *Alfred* and Todd on the *Lion*, surgeon Banks emphasised that direct experience and observation were preferable over 'studied reasoning', yet all three authors regularly drew upon an assortment of medical opinions, scholarship, and theories.

In Banks's general remarks after the sections on diseases, Banks argued that it was his proximate and practical expertise that drove his medical conclusions, not great theorising. In advocating for the use of one particular medicine in the tropical climates to cure dysentery, he noted it will 'stand the test of experience when fleeting theories shall be forgotten'.[97] He argued that it was his 'practical knowledge of the subject', seeing the success of this treatment directly, that enabled his expertise.[98] He reiterated the value of direct observation in his findings. Banks noted that he had sent very few of his patients to hospital, thereby affording him 'the opportunity of observing not

[94] Harrison, *Medicine in the Age of Commerce and Empire*, 240-253.
[95] Harrison, *Medicine in the Age of Commerce and Empire*, 227-236.
[96] TNA, ADM 101/104/6, f. 7, HMS *Hussar*, 1812–1813.
[97] TNA, ADM 101/104/6, f. 30, HMS *Hussar*, 1812–1813.
[98] TNA, ADM 101/104/6, f. 29, HMS *Hussar*, 1812–1813.

only the commencement and progress of disease but also the termination'.[99] He had, therefore, 'acquired a more competent idea of the History of Diseases than could possibly have been accomplished had our patients been sent on shore [to hospital], when their diseases became serious or dangerous'.[100] To Banks, his patients had become his experiments, and the ship, his laboratory, providing him the best opportunity to comment on the disease's progression from prior to the onset of symptoms to the recovery. It was his proximity to his patients on the ship that established his position as distinct from the physicians back home in universities or supervising the fleet's hospitals. Regardless of the merit of his conclusions, the significance here is methodological: the surgeon was best placed to understand the health of the seamen within this context.

Banks considered it his duty to improve medical care in the Royal Navy as part of a broader imperial project. In his comments on the British 'liberation' of Java from the French, he repeatedly presented health as one of the benefits of British imperialism:

> […] how gratifying must the reverse of it be when an extensive island like Java, won by the most consuminate [sic] courage and perseverance from an enemy under whose sway it had been constantly the terror and grave of Europeans become no longer an object of fear to those whose duty calls them thither, when the vessel of commerce will safely visit its ports and the ships of war no longer be a scene of disease and death.[101]

Here, Banks suggests that this British invasion of Java secured 'safer' and more open ports under British commercial control. A more overt paternalistic and colonising undertone was also present in Banks's logic:

> How grateful too, ought that people to be to the nation which conquers their forts and island to give them comparative liberty to that [which] they have previously enjoyed, and to render healthy their towns and habitations as the same time that those diseases which have usually proved fatal cease to be the bane of enjoyment and to be considered as necessarily the certain path to death.[102]

The local population, consisting of the indigenous Javanese population under a well-integrated Dutch colonial framework, were expected to be grateful for such liberation

[99] TNA, ADM 101/104/6, f. 30, HMS *Hussar*, 1812–1813.
[100] TNA, ADM 101/104/6, f. 30, HMS *Hussar*, 1812–1813.
[101] TNA, ADM 101/104/6, f. 29, HMS *Hussar*, 1812–1813.
[102] TNA, ADM 101/104/6, f. 29, HMS *Hussar*, 1812–1813.

from French imperial expansion, thus attaining greater 'liberty' under British rule. Aside from the obviously problematic rhetoric of this claim of liberation, Banks offers some insight into where he placed the role of the surgeon within the Royal Navy and British Empire. Banks advocated for his profession, explaining that 'the effects of discovering the proper mode of treating the endemic diseases of such an island' was of prime importance in the success of the commercial expansion of British power.[103] This was not only to preserve the health of the ship's crew but the whole empire. It is clear in these passages that he viewed his role as treating patients on ship and developing an understanding of the diseases they faced as one that would benefit the colonies themselves, and thereby the British imperial project.

Thus, Banks described his role as two-fold, while placing himself as a vital actor within the British imperial project. First, he claimed that the health of the seaman was of great importance to the strength of the Royal Navy and consequently British imperial power, so, as the surgeon on board, Banks viewed himself as playing an integral role in ensuring such strength in manpower. And second, as a surgeon gaining a deeper understanding of the endemic diseases in these locations, Banks also played a role in advancing medical knowledge through his direct observation and experience to the benefit of empire. His journal reveals that his findings were intended to build such knowledge. Instead of organising his records through case series, Banks took considerable effort to alter the format to one more suited to his more scientific and inquiring needs. This structure allowed for more generalised observations on these diseases, showcasing the journal as an analytical document with scope for data interpretation. His journal clearly reflects the performance of an identity as a 'medical philosopher' seeking to use his expertise to improve the health of the Navy.

Medical Philosophers within the British Medical Community

As we have seen, surgeon John Tweedy Todd went on to publish scientific findings in the *Philosophical Transactions* and a full-length book on medical and scientific inquiry after his service. Todd is among a group of naval surgeons who pursued medical

[103] TNA, ADM 101/104/6, f. 29, HMS *Hussar*, 1812–1813.

degrees and wrote dissertations or books based on their observations in service.[104] Benjamin Outram, whom we met in chapters one and two, is another such example, passing his MD at Edinburgh in 1809 with a dissertation on continuous fevers.[105] A full study of naval surgeons' subsequent contributions to published research is beyond the scope of this thesis, but this section will briefly demonstrate how examining their participation in the British medical community can add to our understanding of their professional identity as 'medical philosophers' while in naval service.

Scholarly participation in a textual medical community through medical and scientific periodicals has been a fruitful way for scholars to examine the performance of identities.[106] As we saw with the discussions of nitrous fumigation in chapter two, naval surgeons were regular readers of the *Medical and Physical Journal* (1799–1814), but they were also regular authors. The *Journal* was a monthly medical periodical based in London and founded and edited by Thomas Bradley (1748/9–1813), an Edinburgh-trained physician and licentiate of the Royal College of Physicians. His aim was to turn the periodical into a 'centre of communication' for 'discoveries, improvements, and medical cases'.[107] The naval surgeons' contributions to the *Medical and Physical Journal* provide an opportunity to explore how they used this periodical to build connections to the British medical community. Periodicals also offered a space for naval surgeons to disseminate their findings to one another. While the ship journals analysed in this

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[104] Laurence Brockliss, John Cardwell and Michael Moss, *Nelson's Surgeon, William Beatty, Naval Medicine, and the Battle of Trafalgar* (Oxford: Oxford University Press, 2005), 20 cf. 47.

[105] Benjamin Fonseca Outram, *Dissertatio medica inauguralis, de febre continua* (Edinburgh, 1809).

[106] This idea of textual communities from Benedict Anderson's *Imagined Communities: Reflections on the Origin and Spread of Nationalism* (London: Verso, 1983) is employed in Gowan Dawson, Bernard Lightman, Sally Shuttleworth, and Jonathan R. Topham, eds., *Science Periodicals in Nineteenth-Century Britain: Constructing Scientific Communities* (Chicago: Chicago University Press, 2020). On the importance of the periodical press as a centre of scholarly scientific debate, see G. Dawson, R. Noakes and J. R. Topham, 'Introduction', in *Science in the Nineteenth-Century Periodical, Reading the Magazine of Nature,* G. Cantor, G. Dawson, G. Gooday, R. Noakes, S. Shuttleworth and J. R. Topham, eds. (Cambridge: Cambridge University Press, 2004), 1-37. For more on medical periodicals specifically, W. Bynum, S. Lock, and R. Porter, eds. *Medical Journals and Medical Knowledge* (London: Routledge, 1992), and on its role in identity-creation and medical improvement, see Alison Moulds, *Medical Identities and Print Culture, 1830s–1910s*, (Cham, Switzerland: Palgrave, 2021); Megan Coyer, *Literature and Medicine in the Nineteenth-Century Periodical Press: Blackwood's Edinburgh Magazine, 1817–1858* (Edinburgh: Edinburgh University Press, 2017); Megan Coyer, 'Medicine and Improvement in the Scots Magazine; and Edinburgh Literary Miscellany (1804–17)', in *Cultures of Improvement in Scottish Romanticism, 1707–1840,* A. Benchimol and G.L. McKeever, eds. (London: Routledge, 2018), 191-212.

[107] The following is all taken from the preface of the first volume: *Med Phys J.* 1, n. 1 (Mar 1799). Bradley practiced as a physician to Westminster Hospital and to the Asylum for Female Orphans, alongside occasionally lecturing on the Theory and Practice of Medicine, according to the journal's prefatory material. See also [Anon.] and Michael Bevan, 'Bradley, Thomas (1748/9–1813), Physician', Oxford Dictionary of National Biography; 23 Sep 2004.

thesis suggest a one-way hierarchical dissemination of findings to the Sick and Hurt Board, examining naval surgeons' scholarly publications outside the naval apparatus suggests the alternate ways that surgeons engaged in professional communication with their peers.

Through an survey of the thirty-two volumes of the *Medical and Physical Journal* published during the sixteen years of the French Wars, I have identified 80 papers in which the author can be clearly identified as a naval practitioner, associated with a naval station, hospital, or ship; this includes naval physicians of the fleet and at station hospitals.[108] Naval surgeons published most frequently on topics that were distinctive to their practice—including tropical diseases, such as yellow fever; common naval afflictions such as ulcers and scurvy; and wounds acquired through battle or the occupational hazards of ship labour.[109] Though naval surgeons also submitted papers on more general complaints such as rheumatism, their submissions to the journals were by and large those that fitted outside of the realm of regular civilian medical practice. It was the uniqueness of their medical experiences that facilitated their participation.

Using naval surgeons' submissions on ulcers as an example, I will explore why they engaged in this medical community and what they sought to achieve from their participation. John Ballard, a young surgeon in the Royal Navy, wrote from Portsmouth to the *Journal* in 1800 to describe the particularly pernicious ulcers he encountered while serving aboard HMS *Triumph* in 1798.[110] Ballard 'was struck with the appearance of the ulcers […]; they were very different from the appearance of any ulcers I had ever seen before, either in private practice, or during my attendance at the

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[108] Submissions were frequently anonymous or pseudonymous, see Roy Porter, 'The Rise of Medical Journalism in Britain to 1800' in *Medical Journals and Medical Knowledge* (London: Routledge, 1992), 6-28, on anonymity, see 15.

[109] On yellow fever: P. O'Berne, 'Observations on the Fevers of Hot Climates', *Med Phys J.* 10, n. 53 (Jul 1803): 36-40; A. Noble, 'On Yellow Fever', *Med Phys J.* 15, n. 83 (Jan 1806): 17-20. On ulcers and scurvy: Ralph Cumming, 'On Old Ulcers', *Med Phys J.* 6, n. 30 (Aug 1801): 156-157; J. Howe, 'Description of Sea Scurvy', *Med Phys J.* 23, n. 136 (Jun 1810): 479. Though battle wounds were comparatively few in the ship journals, they were certainly more common in naval practice than in civilian medicine: John Browne, 'Case of a Wounded Artery', *Med Phys J.* 21, n. 122 (Apr 1809): 317-321; A. Baird, 'Mr. Hammick's Case of Gun-Shot Wound', *Med Phys J.* 27, n. 158 (Apr 1812): 265-269; James Litle, 'On the Fatal Termination of Wounds in the Navy', *Med Phys J.* 28, n. 162 (Aug 1812): 89-93. Wounds were also acquired as an occupational hazard of working on a ship: W. Warnock, 'On Sudden Death', *Med Phys J.* 18, n. 104 (Oct 1807): 309.

[110] Ballard explains that the cases became so pervasive, that they were forced to solicit aid from Thomas Trotter, then Physician of the Channel Fleet, to send a large number of patients to hospital.

General Hospital near Birmingham'.[111] This distinction between the type of ulcers encountered in the Navy and those in civilian practice, encouraged Ballard to 'pay very peculiar attention to them'. Ballard had collected information 'from my professional friends on board' during his service—a practice we know was common, as indicated in our discussion above on Warner of the *Alfred*.

The real intention of Ballard's paper, however, was not to describe the distinctiveness of these ulcers but rather to convey a method of treatment to the Navy and other ship surgeons. 'I should not have ventured to give this account to the public, for I am a very young surgeon', he wrote, perhaps implying false modesty, but 'I cannot, in conscience, withhold what I think the only means of eradicating them [i.e. the ulcers] from the navy'. Ballard suggested the destruction of all bandages and implements used to dress the ulcers on an afflicted ship, a method he had learned from another naval practitioner in the West Indies and used himself to great success. He concluded his paper:

> From these evidences, I most sincerely recommend a similar mode of proceeding in every ship in his Majesty's service, in which these cases exist, for I am convinced that no other means will be effectual in banishing them from the Navy.[112]

While naval surgeons may have interacted with colleagues in passing at local stations, a broader communication apparatus was needed to reach more of their colleagues. Ballard's use of the *Journal* suggests that naval surgeons were lacking their own venue for global intellectual communication and were making use of established networks within a broader medical community to reach colleagues beyond their personal networks.

Implicit in this presumption is that the readership of this periodical also comprised, among others, of naval surgeons. Indeed, a few months later, a W. Edwards, ex-surgeon from the Royal Naval Hospital at Haslar, wrote to the journal citing the article by 'Mr. Ballard, surgeon in the Royal Navy, inserted in No. XXI of your valuable journal'.[113] In response to Ballard's suggested management of ulcers, Edwards supplied more methods of treatment. Edwards revealed his own regular

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[111] John Ballard, 'On a Particular Species of Ulcer', *Med Phys J.* 4, n. 21 (Nov 1800): 408-410, quote from 409.
[112] Ballard, 'On a Particular Species of Ulcer', 410.
[113] W. Edwards, 'On Ulcers', *Med Phys J.* 5, n. 25 (Mar 1801): 217.

readership in his sign-off: 'If you think the above sketches worth inserting in your Journal, you will oblige a constant reader by doing so'.[114]

The significance of such a space for communication between naval practitioners is highlighted in another interaction between two surgeons about ulcers in 1808. W. Warnock, who signed off as an assistant surgeon in the Navy, wrote to the periodical to caution against the 'unlimited use of adhesive straps' in the treatment of ulcers. 'By far the majority of ulcers you meet with on board of a man of war, partakes in a scorbutic taint, […] I am certain, from my experience in the treatment of those sores, that nothing is so bad as to apply straps of adhesive plasters', which only trap the purulent matter leading to purulent wounds.[115] This seemingly sensible suggestion was not met with universal approval. Another ship surgeon, Jacob Smellie, responded contemptuously, emphasising in italics that 'an *Assistant* Surgeon' had wrongly drawn universal conclusions based on his implied lack of experience and low status. Smellie added: 'That the practice [of applying straps] he speaks of is not universal', and 'I can state from my own experience, […] that it is not more generally or indiscriminately adopted in the Navy than on shore'.[116] The irony that Smellie himself was drawing universal conclusions based on his own experiences appears to have been lost on him. But what this public exchange does emphasise is that surgeons in the Royal Navy struggled to capture what, if anything, was 'universal' about their practice.

Though naval surgeons such as Warner or Ballard clearly found ways to maintain some connections with colleagues on station hospitals or perhaps on board if the ship was big enough to warrant multiple assistants, naval service cut surgeons off from a sense of 'universal practice'. Though all naval surgeons were *de facto* practising naval medicine, just what that looked like could be entirely dependent on the ship or station to which they were sent, and whatever connections they did muster. The *Medical and Physical Journal* served to build a community for naval medical practice that existed outside the naval bureaucracy and perhaps reflected the lack of a community in the naval medical offices after the dissolution of the Sick and Hurt Board, despite Trotter's reformative aims. Periodical publications could help build a

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114 W. Edwards, 'On Ulcers', 217.
115 W. Warnock, 'On Adhesive Straps in Ulcers', *Med Phys J.* 20, n. 114 (Aug 1808): 110–111, quote from 111.
116 Jacob Smellie, 'On the Treatment of Ulcers at Sea', *Med Phys J.* 20, n. 116 (Oct 1808): 322–323.

common experience of naval medical practice, but the disjointed nature of this participation alongside access to journals while stationed abroad added a layer of difficulty to building a common practice. While some naval surgeons made active efforts to remain connected to their profession during service through these sorts of publications, a great many more did not or could not.

Conclusion

John Bell's depiction of a professionally isolated naval surgeon, which opened this thesis, was not entirely incorrect; professional ties were more challenging to maintain when practising on a ship at sea. However, as this chapter has demonstrated, naval surgeons were not quite stuck below deck and 'deprived of all communication' during service.[117] Many of them utilised the opportunities provided by naval service to engage in medical inquiry in the ship space and communicate with their peers in colonial stations, and some managed to retain connections to Britain through periodicals. Naval surgeons continued to engage both professionally and intellectually through their service, even though this frequently took place outside of the British medical establishment.

Examining the journals of some of these surgeons demonstrates their aspirational identity-construction as 'medical philosophers'. The complete deviation of their journals from the prescribed format was an active and intentional attempt to structure information in a manner that facilitated generalised observations and analysis, and an attempt to elegantly convey their own scientific efforts to the Board. Rather than provide the data requested in the pre-printed format, these surgeons took analysis and interpretation into their own hands. Surgeons were not only 'scattered rays' providing data to be condensed by the analytical power of the Board, as described by Trotter; some attempted to be centres of calculations in their own right.

Operating aboard ships throughout the contested imperial holdings of the British empire, naval surgeons tapped into regional complexes of medical knowledge and conducted their own investigations and analyses. This was further facilitated by their direct exposure to the daily lives of their patients, which offered a unique

[117] John Bell, *Memorial Concerning the Present State of Military and Naval Surgery* (Edinburgh: Longman & Rees, and Cadell & Davies, 1800), 8-9.

opportunity to consider how activity, behaviour, and labour affected their patients. In doing so, they operated as intermediaries in the transmission, construction, and dissemination of medical knowledge. As knowledge brokers within a global military apparatus, naval surgeons connected various complexes of knowledge: British, colonial, military, naval, indigenous, regional, and maritime. Their investigations into tropical diseases, climate and weather in foreign stations, and the impacts of warfare and battle were all embedded in the imperial project and its goals.

The history of naval medicine has largely focused on published, prescriptive texts, as well as bureaucratic records, highlighting elite physicians and well-known actors involved in advancing medical reform and inquiry occurring in the top echelons of the medical offices of the Navy. This chapter has revealed how medical inquiry was also occurring on ship among a select group of inquiring surgeons. By examining the descriptive records of their practice, we can better capture the direct participation of naval surgeons in the type of inquiry fostered by Thomas Trotter and Gilbert Blane. Incorporating naval surgeons, as the middling practitioners of the fleet, into this narrative of medical progress and reform reveals the participation of rank-and-file practitioners both in naval medical reform and the imperial project.

Conclusion

The heightened need for naval surgeons during the French Wars provided an opportunity for naval surgeons to reposition themselves professionally on ship and within the naval medical bureaucracy. The reforms of 1805, which granted surgeons a pay rise and uniform alongside reimbursement for all their medications, was recognised as a turning point by many contemporaries writing in the aftermath, such as Peter Cullen and William Turnbull.[1] However, social perceptions take time to fully permeate through society, and naval surgeons still found themselves having to defend their profession within the British medical community.

In a letter to the *Medical and Physical Journal* in 1807, Edward Boys, a naval physician at Boyne Hospital, Haslar, expressed dismay towards some of the recent submissions to the journal:

> It had been so usual for me to experience gratification in the perusal of the *Medical and Physical Journal*, that it was with infinite regret I witnessed in the latter Numbers of it, the introduction of a subject which should be accounted totally foreign to the nature and essence of the work; I allude to a very grave attack which has been made on the character of a particular class of gentlemen, the Surgeons of the Royal Navy.[2]

Boys was responding publicly to a series of submissions in the *Journal* which had attacked the knowledge and skill of naval surgeons. 'Among any body of men, there are always some to be found, who do not possess equal abilities with others, and particular circumstances of neglect and want of skill', Dr. Boys admitted, but this was, he said, universal among all medical practitioners, whether on land or at sea.[3] Dr. Boys asked: 'Has it been either reasonable or decorous to cast stigmas on a whole corps? On men, whose skill and humanity have been acknowledged, on many memorable occasions, to have solaced heroes bleeding for their country?'[4] The disparagement of naval practitioners was not only inaccurate, but also a slight against their perceived sacrifice for their country. He added: 'I do the Surgeons of the Navy only justice in

[1] William Turnbull, *The Naval Surgeon; Comprising the Entire Duties of Professional Men at Sea* (London: Richard Phillips, 1806), ix; Peter Cullen, 'Memoirs of Peter Cullen', *Five Naval Journals, 1789–1817*, H.G. Thursfield, ed., Navy Records Society, v. 91 (1951), 54-55.
[2] Edward Boys, 'On the Medical Officers of the Navy', *Med Phys J.* 17, n. 97 (Mar 1807): 250.
[3] Boys, 'On the Medical Officers of the Navy', 252.
[4] Boys, 'On the Medical Officers of the Navy', 252.

stating, that I have often seen them, by perseverance and attention, surmount difficulties peculiarly attendant on their situations'.[5] Dr. Boys cited the victories at the battle of St. Vincent's, Camperdown, Aboukir, Trafalgar, as testament to the skill and commitment of this corps of medical practitioners.

The slander that had been laid against naval surgeons in the *Medical and Physical Journal* had begun in August 1806 when a naval practitioner, Dr. G. Bellamy of HMS *Glory*, submitted a case study of a diseased bladder 'for criticism as well as the information of the medical public'.[6] The account provided a day-by-day update of the perplexing case of a crew member with a tumorous growth on his perineum, for which Bellamy sought help through the journal. The responses he received were far from gracious. In the following September issue, a Mr. Chalmers, a formal naval surgeon who had transferred to the Army militia, noted Bellamy's hesitant word choice in the case description: 'it appears strange, that the medical gentleman should labour under any doubt, whether the tumour was chronic or acute'.[7] To Mr. Chalmers, Bellamy represented 'a lameness too general in the navy', and though Chalmers was 'sorry to hurt the feelings of a whole class of men, by throwing out aspersions injurious to their character' he relied on his own previous experience as a surgeon in the Navy 'to relate in the most candid terms of equity and truth, what I have seen'.[8] Indeed, Chalmers appeared to have a vested interest in condemning naval practitioners. Responding a few months later to a submission about gastritis from a Mr. Denmark, Chalmers was 'led to conclude he is a naval practitioner, even if he had not informed me', which he apparently deduced from the 'strangeness of his language'.[9]

Chalmers was not the only respondent to criticise the language and presentation of naval surgeons' submissions. Mr. Dawson, a practitioner (presumably a surgeon) from Sunderland, was even harsher on Dr. Bellamy:

> Dr. Bellamy in relating his case of a diseased bladder, has invited criticism by the strangeness of his language, the singularity of his

[5] Boys, 'On the Medical Officers of the Navy', 252.
[6] G. Bellamy, 'Dr. Bellamy's Case of Diseased Bladder', *Med Phys J.* 16, n. 90, (Aug 1806): 141.
[7] W. Chalmers, 'On Dr. Bellamy's Case of Diseased Bladder', *Med Phys J.* 16, n. 91 (Sep 1806): 251.
[8] Chalmers, 'On Dr. Bellamy's Case of Diseased Bladder', 253.
[9] Chalmers, 'On Pneumonia, &c', *Med Phys J.* 17, n. 96 (Feb 1807): 158. In response to the following publication: Alexander Denmark, 'Case of Gastritis' *Med Phys J.* 16, n. 94 (Dec 1806): 535-538.

> practice, the originality of his reflections, and the ambiguity of his descriptions. This he has done so palpably as to render it irksome.[10]

Line by line, Dawson criticised Bellamy's word choice and its lack of exactitude. '[Bellamy's] case was published "for criticism" and to criticism it has been subjected', admitted Dawson.[11] While some of his remarks were perhaps earnest assessments of Bellamy's medical practice, his hints of condescension about Bellamy's recounting of the patient's history, signs, and symptoms were equally about language and the display of a certain gentlemanly medical identity. Bellamy's quick, observational play-by-play of this patient's case, sent from a ship, did not, apparently, pass muster as serious medical inquiry. Dawson assumed that Bellamy was an 'old practitioner' unversed in the 'improvements of modern surgery'.

Embedded in both Chalmers' and Dawson's critiques was the correction of outdated medical practice, hinting at their belief that naval surgeons lacked opportunities for professional development in service and were thus unable to perform a very specific kind of medical identity in this community. The debate in the *Medical and Physical Journal* shows that John Bell's vision of naval surgeons, which opened this thesis, was pervasive in the British medical community at the beginning of the nineteenth century.[12] And, indeed, it was precisely this reputation that the naval medical reforms, spearheaded by Trotter and Blane, sought to remedy. However, there is also something else going on here. More than just a debate on medical skill, the criticisms of naval practitioners underscored a fundamental difference in the crystalising professional identities of naval surgeons during this period.

Arguments about naval surgeons continued to appear in the *Medical and Physical Journal* over the next eighteen months. Dr. Boys, the physician at Haslar mentioned above, was joined by other naval practitioners who responded the critiques of naval medical practice. A Mr. Thomas from HMS *Resolue* wrote in, perceptively noting:

> The bare form and phraseology of Dr. Bellamy's paper are not calculated to conciliate the good opinion of its readers. The whole seems to be a literal transcript of the book, which is usually kept by Surgeons of the Navy, and where their daily practice is hastily noted down. In a large ship, the number of patients being generally from

[10] G. P. Dawson, 'On Dr. Bellamy's Case of Diseased Bladder', *Med Phys J*. 16, n. 91 (Sep 1806): 253.
[11] Dawson, 'On Dr. Bellamy's Case of Diseased Bladder', 259.
[12] John Bell, *Memorial Concerning the Present State of Military and Naval Surgery* (Edinburgh: Longman & Rees, 1800), 8-9.

> twenty to thirty, we cannot reasonably expect to meet with such elegance of perspicacity of diction in a volume of this nature.[13]

Going through Bellamy's case in detail, Thomas contextualised Bellamy's decision-making within the realities of medical practice on a ship. The uncertain language and simple prose that Chalmers and Dawson derided, Thomas explained, was testament to the heavy workloads of naval service. Naval surgeons simply did not have the time to turn their case studies into eloquent natural histories of disease; they had more important things to do, suggested Thomas. The fissure with the 'medico-gentility', which prioritised the performance of gentility and 'polite and ornamental knowledge', is most evident in Thomas' explanation.[14] Citing an earlier series of articles in which similar remarks had been made about naval surgeons, Thomas insinuated that such disparagement of naval surgeons was tiresome and outdated.[15]

Mr. Chalmers, the Army surgeon, came under fire as he claimed to have served in the Navy. Mr. Thomas expressed his doubts about this, and even if were true, 'he could not have acquired information enough to have formed such as sweeping and comprehensive judgement, as he had given of the Naval Medical Profession'.[16] Another defender, Mr. Prior, an assistant surgeon in the Navy, critiqued one of Chalmer's previous submissions on venesection, claiming that Chalmer's own observations were basic and lacklustre.[17] On Chalmers' disparagement of the naval service, Prior inquired: 'Whence has this pique (for such it is) against your naval brethren originated? […] Was it produced by solitary confinement on the poop of a two decker?' To Prior, Chalmers represented more than the condescending rebuke of a country practitioner such as Dawson. Chalmers was a *failed* naval practitioner, 'turned out' of the Navy and seeking 'refuge' in the militia regiment; Chalmers represented the class of medical men who were 'more induced by the charms of a red coat', rather 'than a desire of exercising their profession'.[18] Articulating the very concerns we discussed in chapter one of this thesis, Prior admitted that the Navy offered little

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[13] Charles Thomas, 'On Dr. Bellamy's Case of Diseased Bladder', *Med Phys J.* 17, n. 95 (Jan 1807): 35-36.
[14] Michael Brown, *Performing Medicine: Medical Culture and Identity in Provincial England, c.1760–1850* (Manchester University Press, 2011), 48-81.
[15] Thomas, 'On Dr. Bellamy's Case of Diseased Bladder', 38. Thomas cited the July, August, and September 1805 issues alongside November 1806 for further instances.
[16] Thomas, 'On Dr. Bellamy's Case of Diseased Bladder', 28.
[17] James Prior, 'In Answer to Mr. Chalmers', *Med Phys J.* 18, n. 101 (Jul 1807): 57.
[18] Prior, 'In Answer to Mr. Chalmers', 58-59.

inducement into service and a difficult professional life, thus the men that remained in service were 'men of abilities' with a strong sense of duty.[19] For both its defenders and its detractors, naval practice was seen as being distinct in some fundamental way.

Prior's delightfully scathing reply accused practitioners such as Chalmers of merely posturing, using the medical press to do so:

> Every petty practitioner now aspires to be an author; new hypotheses, new practices, and systems are daily issuing forth; the press groans under the weight of half-organized medical imaginations, from Theorists without genius, and Authors without common sense.[20]

Historians have discussed how these medical journals, alongside the Colleges and more informal medical societies, were used to draw boundaries between the different professions as well as to enhance professional status.[21] This is reflected in Prior's statement about this new trend among medical professionals to disparage the professions of others in a competitive medical marketplace where professional boundaries were in a state of ambiguity and transition. Thomas, Prior, and Boys' responses to the attacks on naval surgeons demonstrates the solidarity these men felt to one another, bound together in a collective identity based on their profession. An undercurrent of their response was to address the misunderstandings that the British medical community still held about their status and reputation. Though the reforms in the naval medical branch sought to change this reputation and the standards of naval medical practice, this would take time.

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This thesis has explored how the professional identity of a class of medical practitioners was cultivated, contested, and performed during a significant moment of professional identity-creation within the British medical community. Through this thesis, I have demonstrated how naval surgeons sometimes donned the culture of

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[19] Prior, 'In Answer to Mr. Chalmers', 59-60.
[20] Prior, 'In Answer to Mr. Chalmers', 57.
[21] Irvine Loudon, *Medical Care and the General Practitioner Medical Care and the General Practitioner 1750–1850* (Oxford: Oxford University Press, 1986); Alison Moulds, *Medical Identities and Print Culture, 1830s–1910s* (Cham, Switzerland: Palgrave, 2021); Fiona Macdonald, 'Medicine', in *The Edinburgh History of the Book in Scotland, Volume 2: Enlightenment and Expansion, 1707–1800*, S. W. Brown and W. McDougall, eds., (Edinburgh: Edinburgh University Press, 2012), 494-502; Megan Coyer, 'Medical Discourse and Ideology in the Edinburgh Review: A Chaldean Exemplar', in *Before Blackwood's: Scottish Journalism in the Age of Enlightenment,* A. Benchimol, R. Brown and D. Shuttleton, eds. (London: Pickering & Chatto, 2015), 103-116.

gentility and sociability present in the British medical community in the years around 1800 and, at other times, prioritised a more practical, applicable medicine centred around the needs of this institution.[22] The tension between these two identities reflects the competing requirements of their participation with the British medical community and within the naval medical bureaucracy. Naval surgeons had historically suffered from low status and reputation through much of the eighteenth century, which impacted the recruitment of medical professionals into service. The centralisation and reform of the naval medical bureaucracy during a period of sustained global conflict was an effort to remedy the acute labour demand for medical practitioners and improve medical care. This helped cultivate a distinct class of medical practitioners who used their expertise to perform a new professional identity, at once rooted in the contemporary culture of 'medico-gentility' in Britain, while also representing a distinct new institutional identity, constructed in the Navy, to act as stakeholders in the health of this public institution.[23]

The use of medical records to analyse actual medical practice, practitioner behaviour, and institutional trends has now been well established.[24] By comparing prescriptive regulations and guidelines to accounts of actual ship-board practice in the surgeons' journals of ADM 101, I have been able to examine the tensions between theory and practice. In doing so, my thesis has identified how institutional trends and contemporary medical theories interfaced with the realities of actual ship-borne medical practice. I examined just how surgeons in the British Royal Navy fulfilled, negotiated, and extended their professional roles on ship, in the naval medical bureaucracy, and the wider medical community. Throughout, I have argued that naval surgeons during the French Wars were emblematic of the hybrid practitioners, much like surgeon-apothecaries, prevalent in the British medical community at the close of

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[22] Brown, *Performing Medicine*; Catherine Kelly, *War and the Militarization of British Army Medicine, 1793–1830* (London: Pickering and Chatto, 2011).
[23] Brown, *Performing Medicine.*
[24] Guenter B. Risse and John Harley Warner, 'Reconstructing Clinical Activities: Patient Records in Medical History', *Journal for the Social History of Medicine* 5, n. 2 (1992): 183-205; John Harley Warner, *The Therapeutic Perspective: Medical Knowledge, Practice, and Identity in America, 1820–1885* (Cambridge, MA: Harvard University Press, 1986); Fiona Macdonald, 'Reading Cleghorn the Clinician: The Clinical Case Records of Dr. Robert Cleghorn, 1785–1818', in *Science and Medicine in the Scottish Enlightenment*, Charles W. J. Withers and Paul Wood, eds. (East Linton, UK: Tuckwell Press, 2002), 255-279: Guenter B. Risse 'Britannia Rules the Seas: The Health of Seamen, Edinburgh, 1791–1800', *Journal of the History of Medicine and Allied Sciences* 43, n. 4 (1988): 426-446.

the eighteenth century. Harnessing these blurred disciplinary boundaries, the naval surgeon's medical practice encapsulated a wide range of duties, interests, and roles in health management and medical inquiry. These dual influences of the British medical establishment and the Navy shaped how naval surgeons constructed and performed their medical identities, casting themselves as key stakeholders in the naval medical bureaucracy, negotiators of health management within the ship œconomy, knowledge brokers within imperial medical knowledge complexes, and medical philosophers in the British medical community.

I explored how naval surgeons operated as medical practitioners within the naval service, highlighting their roles in the administration and management of the ship œconomy and their intervention in ship health and order. Chapters two and three provided nuance to previous assessments of surgeons as authoritarian and institutional 'managers' in charge of diet, hygiene, and discipline, underscoring the limitations to their authority. Despite the focus on prevention and discipline in contemporary medical literature, they did not experience a concrete systematic expansion of jurisdiction over preventative health within a centralised naval medical bureaucracy as Christopher Lawrence has argued.[25] Instead, I argued that the surgeons' medical practice was, of necessity, responsive and collaborative due to conflicting jurisdictional boundaries and the nature of medical practice in a global, permeable, and transient environment. The limitations of universalised and standardised systems necessitated autonomy and adaptability in the surgeons' practice, relying on the continuation of de-centralised paternalistic systems of care and collaboration within the ship œconomy, rather than standardised institutional structures. Surgeons cemented their role and medical authority over ship health and order by placing themselves as key stakeholders and negotiators between ship captains, the naval medical bureaucracy, the Admiralty, and the wider medical community.

Paying close attention to how surgeons navigated tensions between these institutional pressures, prescriptive demands, and medical guidance, offers important insights into the ways surgeons operated within and outside of these structures—using them, adapting them, or re-enforcing them. For example, some enterprising surgeons

[25] Christopher Lawrence, 'Disciplining Disease: Scurvy, the Navy and Imperial Expansion, 1750–1820', in *Visions of Empire: Voyages, Botany, and Representations of Nature*, David Phillip Miller and Peter Hans Reill, eds. (Cambridge: Cambridge University Press, 1996), 96.

took it upon themselves to advocate for systemic changes to the provisioning structures that so affected their daily practice. To do this, they used their journals to pitch prospective reforms to the naval medical bureaucracy, which operated as a centralising force concerned with improved medical care and oversight. As highlighted in chapter three's discussion of medical invalidation, surgeons were under increased pressure to identify malingering and police certain kinds of behaviours. Their role was supported by contemporary medical discourses around the medicalisation of drunkenness and other 'diseases of the mind', which established that certain problematic behaviours fell under the purview of the surgeon. While surgeons certainly exhibited suspicions around malingering, they continued to send patients to hospital or invalidate them due to irreparable damage. Rather than some authoritarian regime within an increasingly interventionist naval medical board and the Admiralty's increasingly institutionalised control, we can see the flexibilities to surgeons' practice whereby they played a negotiatory role in health management.

Deviations between theory and practice have allowed me to interrogate those moments when surgeons appeared to perform entirely new roles. Chapter four explored how some surgeons transformed the structure of their journals to perform a new role as 'medical philosophers'. I turned to a select group of inquiring surgeons who demonstrated a marked investment in medical inquiry and research through their journals. This inquiry was facilitated by the state's intervention in health management as described by Erica Charters.[26] I argue, with Catherine Kelly and Mark Harrison, that the practitioners operating within the colonial and imperial project played a crucial role in the development of an experimental culture of medical science.[27] I demonstrated that some naval surgeons harnessed their unique position in the Navy to cast themselves as 'medical philosophers', calling upon a medical identity that signalled their participation within an elite and learned community concerned with improvement and inquiry. They collected medical and scientific observations, data, and new practices, and collaborated with colleagues at station hospitals to contribute to the production of a practical knowledge that would help improve troop health management, thus

[26] 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).
[27] Mark Harrison, *Medicine in an Age of Commerce and Empire: Britain and its Tropical Colonies, 1660–1830* (Oxford: Oxford University Press, 2010); Kelly, *War and the Militarization of British Army Medicine.*

expanding the professional identities and roles that naval surgeons performed in the Navy and within the British medical establishment.

Applying Londa Schiebinger's concept of 'medical knowledge complexes', I explored how surgeons centred themselves within various overlapping regional constellations of medical knowledge, positioning themselves as 'knowledge brokers' by transmitting and interpreting their medical findings.[28] The journals were one way they transmitted their findings—placing themselves as stakeholders in the medical inquiry and research that was being undertaken by the naval medical bureaucracy. But naval surgeons also intersected with the British medical community through the circulation of medical periodicals, thus participating in a textual medical community through readership and knowledge exchange. Positioning themselves in this way, naval surgeons expanded their professional purviews to operate within imperial and domestic knowledge complexes.

Methodologically, this thesis has used the concept of 'paper technologies' to explore how these pre-printed, standardised medical records were used in practice. Instead of only exhibiting trends towards serialisation, bureaucratisation, and institutionalisation, I have demonstrated how these journals reveal practitioner agency and professional identity.[29] In line with recent scholarship on note-keeping practices, I have focused not only on the journals as epistemic objects of knowledge management, but also as artifacts of living practice and knowledge-production.[30] Through my analysis of different components of the journals, I have demonstrated how surgeons adapted these standardised bureaucratic records to manage health information; convey pleas, requests, and suggestions to the naval medical board; and synthesise scientific and medical inquiry. These were not mere repositories of data and tools of information

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[28] On knowledge-brokers, see Simon Schaffer, Lissa Roberts, Kapil Raj and James Delbourgo, eds., *The Brokered World: Go-Betweens and Global Intelligence, 1770–1820* (Sagamore Beach, MA: Watson Publishing International, 2009); and on medical complexes: Londa Schiebinger, 'The Atlantic World Medical Complex', in *Empires of Knowledge: Scientific Networks in the Early Modern World*, Paula Findlen, ed. (London: Routledge, 2018), 317-341.

[29] This initial trend, though certainly present in the records' format, has been addressed by Volker Hess and J. Andrew Mendelsohn, 'Case and Series: Medical Knowledge and Paper Technology, 1600-1900', *History of Science* 47 (2010): 287-314.

[30] For the adaptable and practical use of notebooks and note-keeping practices, see Michael Stolberg, 'Medical Note-Taking in the Sixteenth and Seventeenth Centuries', in *Forgetting Machines: Knowledge Management Evolution in Early Modern Europe,* Alberto Cevolini, ed. (Amsterdam: Brill, 2016); Matthew Daniel Eddy, *Media and the Mind: Art, Science, and Notebooks as Paper Machines, 1700–1830* (Chicago: Chicago University Press, 2023).

management, but multi-modal paper technologies, adapted to their purpose by the practitioners who used them.

In chapter two marginal notes and general remarks provided valuable insight into how surgeons navigated crises in provisioning and prevention. Here, the journals were clearly used as a tool of communication to the naval medical board—sometimes making suggestions and at other times explaining decisions made in medical practice. Chapter three examined the patient records themselves, focusing on incidental information that accompanied descriptions of patients' signs, symptoms, diagnoses, and recovery. Through an examination of drunkenness, I demonstrated how certain social and cultural biases were embedded in their practice. In contrast, chapter four focused on the surgeons who completely deviated from the form and structure of the journals with the inclusion of charts, tables, and narrative essays on disease. The individuality of these journals highlights the surgeons' autonomy and agency in shaping their medical identities within an increasingly bureaucratised state institution.

It is impossible to capture a collective identity through a small sample of highly variable surviving records. Representability is one limitation of this project. I have aimed to capture a broad swathe of naval surgeons, but I have tended to focus my analysis on surgeons who appeared to be in some way defying the norms of medical practice. In chapter one, we met cases of illiterate surgeons devoid of basic medical skills as well as those with previous professorial appointments in German universities. Chapter two foregrounded cases of surgeons whose interventionist approaches to preventative health measures marked them out as especially entrepreneurial, operating outside the mandates of their jurisdiction. Focusing instead on a medical concern, namely drunkenness, chapter three provided a more inclusive image of naval surgeons, whereas chapter four dealt with a stricter minority of inquisitive surgeons committed to an active participation in medical science.

Another correlated limitation is the narrow focus on the journals alone in this analysis. Though it was a central tenet of my methodological intervention to demonstrate the richness of these medical records, this methodology prevents a deeper understanding of naval surgeons' professional lives, which could perhaps be gleaned through their published works, diaries, financial accounts, etc. This was somewhat mitigated by the excellent prosopographical research undertaken by Cardwell and

Brockliss et al. as well as my brief examination of naval surgeons' submissions in the *Medical and Physical Journal*. However, future avenues of research could include a collection of semi-biographical follow ups, tracing a sample of individual surgeons and their post-service careers.[31] In particular, I would have been keen to track down the possible medical theses, publications, and private practices set up by some of these naval surgeons to better understand how their experience in naval service shaped their medical practice in the long term.

Nonetheless, my thesis has demonstrated how records of medical practice can be used to explore identity-making among medical practitioners, revealing the various influences, pressures, and agencies exhibited in their professional practice. In this way, these medical journals operated not only as paper technologies to manage health information, but also as an extension of the surgeons themselves, as an expression of their identity—both collective and individual. Though the journals reflect a tendency towards bureaucratic standardisation and serialisation through their form and structure, they also contain tremendous variability in the information provided and their adherence to the pre-printed structure. The rigid lines and tables proposed by the Admiralty were interpreted in different ways and sometimes entirely dismissed, while new methods of organising and displaying information were interjected. This variability, much like that of the surgeons themselves, reflects expressions of agency and autonomy in their medical practice and professional identity-making within this increasingly bureaucratic system. By reading these journals in this way, variation in content, form, and structure becomes a conscious effort to create and perform a medical identity.

By reconstructing the professional identities of naval surgeons during the French Wars, this thesis has incorporated these rank-and-file practitioners of the military bureaucracy into the narrative of medical development in this period of change. For half a century now, historians have contested Erwin Ackerknecht and Michel Foucault's theses that modern medicine developed out of revolutionary Paris, demonstrating that tendencies towards modernity had been seen long before 1789,

[31] Laurence Brockliss, John Cardwell and Michael Moss, *Nelson's Surgeon, William Beatty, Naval Medicine, and the Battle of Trafalgar* (Oxford: Oxford University Press, 2005); John M Cardwell, 'Royal Navy Surgeons, 1793–1815: A Collective Biography', in *Health and Medicine at Sea, 1700–1900*, David Boyd Haycock and Sally Archer, eds. (Woodbridge, UK: Boydell Press, 2009), 38-62.

outside of France and, in some cases, Europe, within institutions as various as charitable poor houses, hospitals, universities, and the military, and among various actors and across professional designations, fostered by commerce, imperialism, and Enlightenment values of improvement.[32] Modernity in medicine has been captured and defined in a variety of ways through these studies, but within the military the conversation has tended to orient itself towards increased state intervention, institutionalisation and bureaucratisation of the medical offices of the military, and standardisation and universalisation of medical practice and therapeutics.[33] Naval surgeons represent some of the practitioners who negotiated and expanded their roles in health management and medical inquiry within this state bureaucracy and medical apparatus.

By resituating naval surgeons into the development of the medical profession, I have also resituated the ship as a site of medical inquiry. Scholars have long acknowledged the importance of Royal Navy ships in providing access to global spaces and stimulating scientific inquiry—from natural history in the eighteenth century to ethnography, hydrography, and meteorology in the nineteenth century.[34] By analysing the medical practice and inquiry of naval surgeons within the ship space, I have presented the naval ship as a site of medical development. Naval surgeons themselves were not merely facilitators of 'scientific' collecting, but also participants in medical 'science' and research. Their use of the ship space as a venue of medical practice and inquiry, as well as a tool for access into global spaces and knowledge complexes, must also be integrated in histories of science. This thesis has aimed to do so by situating their participation during a formative moment in 'modern' medicine and global, imperial expansion.

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[32] Michel Foucault, *The Birth of the Clinic: An Archaeology of Medical Perception*, trans. A. M. Sheridan Smith, (London: Tavistock, 1973); E. H. Ackerknecht, *Medicine at the Paris Hospital, 1794–1848* (Baltimore: Johns Hopkins Press, 1967).

[33] Charters, *Disease, War, and the Imperial State*; Harrison, *Medicine in an Age of Commerce and Empire*; Kelly, *War and the Militarization of British Army Medicine.*

[34] Anne Mariss, *Johann Reinhold Forster and the Making of Natural History on Cook's Second Voyage, 1772–1775,* (London: Lexington Books, 2019); Daniel Simpson, *The Royal Navy in Indigenous Australia, 1795–1855: Maritime Encounters and British Museum Collections* (Cham, Switzerland: Palgrave Macmillan, 2021); Simon Naylor, 'Log Books and the Law of Storms: Maritime Meteorology and the British Admiralty in the Nineteenth Century', *Isis* 106, n. 4 (2015): 771-797; Megan Barford, 'D.176: Sextants, numbers, and the Hydrographic Office of the Admiralty', *History of Science* 55, n. 4 (2017): 431-456; Megan Barford, 'Fugitive Hydrography: The Nautical Magazine and the Hydrographic Office of the Admiralty, c.1832–1850', *The International Journal of Maritime History* 27, n. 2 (2015): 208-226.

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