Bleeding, Blistering and Observations of the Bowel: A Comparative Analysis of Hospital Treatment in the Mid-Nineteenth Century

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Abstract

Contributions to the extensive array of research on nineteenth-century medical history must surmount stereotyped images by placing emphasis not so much on the achievements of doctors or the acquisition of knowledge, but on the events and issues important to those experiencing life within the institutions – the patients themselves. Using the experiences of patients recorded in medical case histories, this thesis provides a comparison of care provided to inmates both before and after death at three very different nineteenth-century hospitals – the New Norfolk Hospital, located in rural Van Diemen's Land, the Royal Naval Hospital, set in the isolated location of Bermuda, and St Bartholomew's Hospital, situated in the bustling metropolis of London. By examining the traditional perceptions of medical institutions and their staff through the filter of inmates' own experiences, it explores the evolving role of the patient in an increasingly medicalised society.

Through an examination of the physical environments of each of these institutions, and the methods of diagnosis and treatment utilised within them, this thesis dispels the notion that advancement originated in urban centres of learning and gradually seeped out to colonial peripheries. Indeed, the innovative research and treatment delivered by colonial surgeons in response to the peculiar nature of the convict state demonstrates that patients at New Norfolk Hospital benefited from the practical implementation of developments and advances in medical science which were transforming the wider provision of medical care in the period 1830-1850.

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Abbreviations

Colonial Secretary's Office	CSO
Governor's Office	GO
National Archives	NA
New South Wales	NSW
Public Works Department	PWD
Royal Derwent Hospital	RDH
Royal Naval Hospital	RNH
St Bartholomew's Hospital	SBH
St Bartholomew's Hospital Archives and Museum	SBHAM
State Library of Tasmania	SLT
Tasmanian Archive and Heritage Office	TAHO
United States of America	USA
Van Diemen's Land	VDL

Chapter One

Introduction

The contribution of nineteenth-century hospitals to the health of patients and the wider communities they served has been a subject of heated controversy for many decades.[1] Opinions, both contemporary and modern, on the care and treatment within these institutions range from invectives damning the ravages of epidemic infections and unsanitary wards,[2] to more optimistic views expounding on the admirable dedication and fervour of practitioners working with limited resources and incomplete knowledge.[3] A comprehensive analysis of hospital treatment regimes must, however, surmount these stereotyped images by placing emphasis not so much on the

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[1] See, for example, L. Granshaw and R. Porter (eds.), *The Hospital in History* (Routledge, London, 1989); R. Porter and A. Wear (eds.), *Problems and Methods in the History of Medicine* (Croom Helm, Kent, 1987), especially G. Risse, 'Hospital History: New Sources and Methods'; G. Risse, *Hospital Life in Enlightenment Scotland* (Cambridge University Press, Cambridge, 1986); B. Abel-Smith, *The Hospitals, 1800-1948: A Study in Social Administration in England and Wales* (Heinemann, London, 1964); J. Woodward, *To Do The Sick No Harm: A Study of the British Voluntary Hospital to 1875* (Routledge and Kegan Paul, London, 1974); G. Risse, *Mending Bodies, Saving Souls: A History of Hospitals* (Oxford University Press, Oxford, 1999).

[2] T. McKeown and R. Brown, 'Medical Evidence Related to English Population Changes in the Eighteenth Century', *Population Studies*, 9 (1955); J. Howard, *Account of the Principal Lazarettos in Europe with Various Papers Relative to the Plague* (T. Cadell, London, 1789).

[3] S. Cherry, 'The Role of a Provincial Hospital: The Norfolk and Norwich Hospital, 1771-1880', *Population Studies*, 26 (1972); J. Tooth, *Human and Heroic: The Life and Love of a 19th Century Country Doctor* (Artemis Publications, Hobart, 2007); E. Sigsworth, 'Gateways to Death? Medicine, Hospitals and Mortality, 1700-1850' in P. Mathias (ed.), *Science and Society, 1600-1900* (Cambridge University Press, Cambridge, 1972).

achievements of doctors or the acquisition of knowledge, but on the events and issues important to those experiencing life within the institutions – the patients themselves.

Using the experiences of these patients as they are recorded in medical case histories, this thesis will provide a comparison of care provided to inmates at three very different nineteenth-century hospitals – the New Norfolk Hospital, located in rural Van Diemen's Land, the Royal Naval Hospital, set in the isolated location of Bermuda, and St Bartholomew's Hospital, situated in the chaotic and bustling metropolis of London.[4] By examining the stereotypical perceptions of medical institutions and their staff through the filter of inmates' own experiences, the evolving role of the patient in an increasingly medicalised society can be explored.

The interest in social history over the past three decades has fostered the expansion of hospital and asylum histories based on patient case notes, such as Berkenkotter's examination of the Royal Edinburgh Hospital, Porter and Williams' analysis of Aberdeen's City Hospital, Reaume's investigation into Toronto Hospital, and Stow and Cockayne's exploration of a mid-nineteenth-century casebook from a Suffolk hospital.[5] As has been argued elsewhere, many medical histories have focused on the personalities and achievements of "healers and benefactors," thus neglecting the experiences of the patient.[6] This thesis will seek instead to contribute to our understanding of the types and outcomes of treatments – both typical and unusual – of the nineteenth-century hospital patient. It will do so through a comparative framework, which will

[4] The New Norfolk Hospital is also known as the Royal Derwent Hospital.
[5] C. Berkenkotter, *Patient Tales: Case Histories and the Uses of Narratives in Psychiatry* (University of South Carolina Press, South Carolina, 2008); I. Porter and M. Williams, Epidemic Diseases in Aberdeen and the History of the City Hospital (Aberdeen History of Medicine Publication, Aberdeen, 2001); G. Reaume, *Remembrance of Patients Past: Patient Life at the Toronto Hospital for the Insane* (University of Toronto Press, Toronto, 2009); E. Cockayne and N. Stow (eds.), Stutter's Casebook: A Junior Hospital Doctor, 1839-1841 (The Boydell Press, Woodbridge, 2006). See also M. Gorsky and S. Sheard (eds.), Financing Medicine: The British Experience Since 1750 (Routledge, London, 2006); A. Borsay and P. Shapely (eds.), *Medicine, Charity and Mutual Aid: The Consumption of Health and Welfare in Britain, 1550-1950* (Ashgate Publishing, Aldershot, 2007); M. Summers and S. Bowman, *Of Poor Law, Patients and Professionals: A History of Bristol's Southmead Hospital* (self-printed, Bristol, 1997); E. Heaman, *St Mary's: The History of London Teaching Hospital* (McGill-Queen's University Press, Quebec, 2003).
[6] See, for example, J. Hickie,, *The Thinkers: A History of the Physicians and the Development of Scientific Medicine at St Vincent's Hospital, Sydney, 1857-1997* (Playwright Publishing, Caringah, 2000); Risse, 'Hospital History' in Porter and Wear (eds.), *Problems and Methods*, p. 175.

explore hospital practice and patient experience in both metropolitan and colonial hospitals, and amongst institutions which treated patients who were both free and unfree. Comparative work such as this is uncommon;[7] Simpson's examination of two hospitals in Arbroath, Scotland, and Waterville, United States of America, for example, is one of a very small group of studies that have attempted this kind of comparative perspective.[8] Piddock's comparison of psychiatric asylums in Tasmania, South Australia, and Britain and Jonathan Reinartz's investigation of nine British voluntary hospitals also offer valuable insights in comparative frameworks.[9]

One key aspect linking the studies in this small category is their extensive use of hospital records. These sources can provide vast amounts of detail not only regarding patients, but also about the institutions themselves. They contextualise the hospitals' social, political and economic foundations, and reveal the ideology supporting the practice of medicine, education and professionalism within the institutions and the wider discipline. While these records filter the patient's experiences through the practitioner's own perceptions, biases and training, they nonetheless provide insight into "what the sufferers dreaded or demanded" from their treatment.[10] Risse's examination of the Royal Infirmary of Edinburgh, for example, uses rich sources of data such as case histories, admission registers, ward journals, and outcome of treatment statistics to build a highly detailed picture of the experience of the patient, set against an examination of the institution's daily administrative functioning (based on annual hospital

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[7] I. Löwy, 'Beyond the Local;, *The Social History of Medicine*, 20 (2007), pp.465-481.
[8] S. Piddock, *A Space of Their Own: The Archaeology of Nineteenth-Century Lunatic Asylums in Britain, South Australia and Tasmania* (Springer, New York, 2007); L. Topp, J. Moran, and J. Andrews (eds.), *Madness, Architecture and the Built Environment: Psychiatric Spaces in Historical Context* (Routledge, London, 2007); J. Simpson, *Custom and Practice in Medical Care: A Comparative Study of Two Hospitals in Arbroath, Scotland, U.K. and Waterville, Maine, U.S.A.* (Oxford University Press, Oxford, 1968); see also J. Melling and B. Forsythe (eds.), *Insanity, Institutions and Society, 1800-1914: A Social History of Madness in Comparative Perspective* (Routledge, London, 1999); K. Webb, *From County Hospital to NHS Trust: The History and Archives of NHS Hospitals, Services and Management in York, 1740-2000* (University of York, York, 2002); D. Gagan and R. Gagan, *For Patients of Moderate Means: A Social History of the Voluntary Public General Hospital in Canada, 1890-1950* (McGill-Queen's University Press, Montreal, 2002).
[9] Piddock, *A Space of Their Own*; J. Reinartz, *Health Care in Birmingham: The Birmingham Teaching Hospitals, 1779-1999* (The Boydell Press, Woodbridge, 2009).
[10] R. Porter, 'The Patient's View: Doing Medicine from Below', *Theory and Society*, 14 (1985), p. 183; F. Krantz, *History from Below: Studies in Popular Protest and Popular Ideology* (Blackwell, Oxford, 1988).

reports and statistics, financial records, and minutes of meetings).[11] Such a 'total' history makes visible the interactions between internal and external factors, and allows a realistic and holistic reconstruction of hospitals activities.[12] These historical accounts are also well-suited to comparative analyses – by examining institutions as a whole, the experiences of the patient are illuminated and thus more easily contrasted with those of the sick in other hospitals.

The potential of case notes has long been recognised by social historians, and they are widely utilised in the rapidly growing genre of social research. Other than Risse's analysis of the Royal Infirmary of Edinburgh, studies using patient notes to investigate a single institution include Dupree's examination of the characteristics of fever patients at the Royal Infirmary in Glasgow, Andrews' exploration of patients' experiences of insanity and internment at Gartnaval Royal Asylum, also in Glasgow, and Digby's analysis of patients' experiences of madness, morality and medicine at the York Retreat.[13] Case notes have also been employed to obtain a new perspective on the analysis of wider movements in hospital systems, such as Rosenberg's examination of the development of American medical institutions.[14]

As Warner notes, medical records offer valuable new methods of uncovering human experiences, both within the hospital and the wider community.[15] The historian is offered a rare opportunity to reconstruct clinical activities based on clinical events – a chance to examine the actual practice of medicine contextualised by the relationships in action between doctors and

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[11] Risse, 'Hospital History' in Porter and Wear (eds.), *Problems and Methods*, pp. 176-200.
[12] Risse, 'Hospital History' in Porter and Wear (eds.), *Problems and Methods*, p. 201.
[13] Risse, 'Hospital History' in Porter and Wear (eds.), *Problems and Methods*, pp.176-200; Risse, *Hospital Life*; M. Dupree, 'Family Care and Hospital Care: The 'Sick Poor' in Nineteenth Century Glasgow', *Social History of Medicine*, 6 (1993), especially pp. 202-210; J. Andrews, 'Case Notes, Case Histories and the Patient's Experience of Insanity at Gartnaval Royal Asylum, Glasgow, in the Nineteenth Century', *Social History of Medicine*, 11 (1998), pp. 255-281; A. Digby, *Madness, Morality and Medicine: A Study of the York Retreat, 1796-1914* (Cambridge University Press, Cambridge, 1985).
[14] E. Rosenberg, *The Care of Strangers: The Rise of America's Hospital System* (John Hopkins University Press, New York, 1987).
[15] J. Warner, 'The Uses of Patient Records by Historians: Patterns, Possibilities and Perplexities', *Health and History*, 1 (1999), p. 101.

patients.[16] While contemporary textbooks and journal articles can provide representations of ideal medical treatments, professional performance, or hospital design, records such as case notes reveal events as they occurred, illuminating that crucial link between medical *ideology* and medical *behaviour*.[17]

Thus, hospital patient histories are able to add another level of understanding to the knowledge of historical medicine. These records can also provide unparalleled insight into the understandings of health and sickness held by the working classes, which are otherwise largely inaccessible. For example, patients' earlier medical histories and attempts at treatments, both at home and under the care of other practitioners, are often revealed. On a primary level, this can supplement knowledge of home-based medical care, but at a secondary level these records can also provide a deeper understanding of the motivation behind hospital admission, and of the tripartite relationship between home remedies, medicines available from apothecaries and general practitioners, and hospital treatment.[18] Furthermore, in the case of convict patients at the New Norfolk Hospital and the Royal Naval Hospital in Bermuda, the impact of removing the network of alternative sources of healthcare can be explored.[19]

Studies which examine the development of British healthcare – from religious and charitable foundations to scientific research and teaching centres – provide a valuable context against which to set the analyses undertaken in this thesis.[20] Abel-Smith, for example, examines the administrative and professional development of voluntary hospitals with a focus on the influence

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[16] G. Risse and J. Warner, 'Reconstructing Clinical Activities: Patient Records in Medical History', *Social History of Medicine*, 5 (1992), p. 184.
[17] Warner, 'The Uses of Patient Records', p. 101
[18] See, for example, P. Martyr, *Paradise of Quacks: An Alternative History of Medicine in Australia* (Macleay Press, Paddington, 2002), J. Crellin, *Home Medicine: The Newfoundland Experience* (McGill-Queen's University Press, Montreal, 1994); L. Curth, *From Physick to Pharmacology: Five Hundred Year of British Drug Retailing* (Ashgate Publishing, Hampshire, 2006); I. Loudon, 'General Practice and Obstetrics: A Brief History', Journal of the Royal Society of Medicine, 101 (2008), pp. 531-535.
[19] Porter, 'The Patient's View', p. 188.
[20] Granshaw and Porter (eds.), *The Hospital in History*.

of the Poor Laws and the evolution of public responsibility for the sick poor.[21] While Abel-Smith largely overlooks specifically patient-related issues (such as treatments), Woodward utilises hospital records to assess the types of conditions for which patients sought hospital care, and uses an analysis of public health strategies to examine the effectiveness of this treatment.[22] Risse, too, uses the experiences of individual patients as a lens through which to identify the wider social and scientific transformations of the hospital from its Greek and Roman origins to the twenty-first century.[23]

From the early eighteenth century, hospitals and their treatments were understood within medical historiography to have played a fundamental role in both the maintenance of health and the fostering of medical knowledge.[24] In the mid-1920s, Griffith and Buer asserted that these roles actively advanced the increase of population during the early period of the Industrial Revolution.[25] In 1955, however, the ability of medical care in general (and hospital treatment specifically) to reduce mortality in the eighteenth and nineteenth centuries was dismissed by prominent demographic historians such as Habakkuk and Helleiner.[26] McKeown and Brown, perhaps the most well-known exponents of these disparaging perspectives of health care, even went so far as to state that hospital admittance, far from benefitting the patient, "positively did [them] harm."[27] Although it was conceded that a small number of drugs and medical and surgical procedures were effective if used appropriately – including mercury, *Digitalis* and *Cinchona*, inoculation for smallpox, lithotomy, incision of abscesses and cataract operations –

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[21] Abel-Smith, *The Hospitals*.
[22] Woodward, *To Do The Sick No Harm*.
[23] G. Risse, *New Medical Challenges During the Scottish Enlightenment* (Editions Rodopi, Amsterdam, 2005), especially Chapter 7; Risse, *Mending Bodies, Saving Souls*.
[24] F. Smith, *The People's Health* (Croom Helm, London, 1979), p. 249.
[25] M. Buer, *Health, Wealth and Population in the Early Days of the Industrial Revolution* (G. Routledge and Sons, London, 1926); G. Griffith, *Population Problems in the Age of Malthus* (Cambridge University Press, Cambridge, 1926).
[26] H. Habakkuk, 'English Population in the Eighteenth Century', *The Economic History Review*, 6 (1953), p. 127; K. Helleiner, 'The Vital Revolution Reconsidered', *The Canadian Journal of Economics and Political Science*, 23 (1957), pp. 6-7.
[27] McKeown and Brown, 'Medical Evidence', p. 125. See also T. McKeown, *The Modern Rise of Population* (Edward Arnold, London, 1976), particularly chapters 3, 5, 6 and 8.

most were not considered 'life-saving', and, as such, unable to significantly impact upon mortality or population rates.[28]

Although in more recent decades the analyses introduced by McKeown and his colleagues have been somewhat superseded by newer interpretations, these early studies paved the way for further examinations of nineteenth-century medical care and expanded the emerging field of the social history of medicine.[29] In recent decades, a shift has occurred towards local histories and the potential of these studies to contribute to an understanding of the role of medicine at national and international levels. This transformation has been accompanied by the universal trend also apparent in wider social history – the movement away from 'top-down' history (which, in the case of medicine, primarily focuses on doctors and their achievements) to history 'from below' (with an emphasis on local communities, individual hospitals, and small groups of patients).[30] These analyses make more cautious use of the emphatically scientific and statistical basis of works such as McKeown's, mitigating the use of quantitative information with qualitative evaluations of the role of regional variations, the evolution and progression of disease types and classification, and contemporaneous observations of the nineteenth-century medical profession.[31] For example, historians such as Cherry, Sigsworth, and Woodward use hospital records to challenge the negative perception of institutional care, and concluded that it is possible that hospitals did indeed support community health by preventing an increase in mortality statistics, while others such as Szreter and Harris also contributed to the debate by with

[28] McKeown and Brown, 'Medical Evidence', p. 120, p. 123, p. 126; Habukkuk, 'English Population', p. 127; Helleiner, 'The Vital Revolution', p. 6.
[29] A. Hardy, 'Diagnosis, Death and Diet: The Case of London, 1750-1909', *Journal of Interdisciplinary History*, 18 (1988), p. 387.
[30] R. Porter, 'The Historiography of Medicine in the U.K.', *Medicina nei Secoli*, p. 255; Porter, 'The Patient's View', p. 175.
[31] Hardy, 'Diagnosis, Death and Diet', p. 401.

a partial defence of McKeown's theories, with Guha and Woods offering more critical opinions.[32]

While these works have presented data which throws a more positive light upon the contribution of hospital medicine, most do not go so far as to suggest that hospital treatment actively reduced mortality rates.[33] Rather, these studies emphasise the possibility that while hospitals treated insufficient numbers of patients to diminish national mortality statistics, their influence on communities at the local level should not be underestimated.[34] Indeed, Cherry concludes that these institutions were able to make positive contributions to community health by successfully treating diseases and conditions which were significant causes of suffering and death.[35]

This historiographical framework has supported the growth of hospital histories. While numerous informative works have been written on the development of particular medical institutions, often by retired staff members or local historians, these studies generally focus exclusively on the facts, dates, and personalities specific to the evolution of a hospital, dispensary or infirmary. Accounts of institutions particularly relevant to this thesis include, among many others, studies of the New Norfolk Hospital by Gowlland, Crabbe and Cullen, analysis of The Royal Hobart Hospital by Rimmer, an examination of the history of the Launceston General Hospital by Craig, an exploration of the establishment of the Parramatta Hospital undertaken by

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[32] S. Cherry, 'The Hospitals and Population Growth: Part 1, The Voluntary General Hospitals, Mortality and the Local Populations in the English Provinces in the Eighteenth and Nineteenth Centuries', *Population Studies*, 34 (1980), pp. 59-60; Cherry, 'The Role of a Provincial Hospital', pp. 291-306; E. Sigsworth, 'A Provincial Hospital in the Eighteenth and Nineteenth Centuries', *College of General Practitioners, Yorkshire Faculty Journal* (1966), pp. 31-36; J. Woodward, *To Do The Sick No Harm*; S. Szreter, *Health and Wealth: Studies in History and Policy* (University of Rochester Press, Rochester, 2007); B. Harris, 'Public Health, Nutrition, and the Decline of Mortality', *Social History of Medicine*, 17 (2004), pp. 279-307; S. Guha, *Health and Population in South Asia from Earliest Times to the Present* (Hurst and Co, London, 2001); R. Woods, *Demography of Victorian England and Wales* (Cambridge University Press, Cambridge, 2000).

[33] There are however, exceptions – some authors, such as Hardy, assert that "in terms of curative medicine, medical intervention made a positive contribution to the mortality decline" (Hardy, 'Diagnosis, Death and Diet', p. 400).

[34] Cherry, 'The Hospitals and Population Growth: Part 1', p. 60.

[35] S. Cherry, 'The Hospitals and Population Growth: Part 2, The Voluntary General Hospitals, Mortality and the Local Populations in the English Provinces in the Eighteenth and Nineteenth Centuries', *Population Studies*, 34 (1980), p. 265.

the Health Department, investigations into the development of medicine in Bermuda by Hollis-Hallett, and examinations of the long history of St. Bartholomew's Hospital by Waddington, Moore, Medvei and Thornton, and Power and Waring.[36] One drawback of this factual approach is that these individual studies generally suffer from a lack of wider contextualisation, and appear somewhat detached from the medical, social and political atmosphere in which the institution developed.[37] As Risse suggests, such context is essential to embed the hospital and the experiences of its patients into a wider analysis of nineteenth-century social composition.[38] Without it, a historical account risks being nothing more than a linear, overly-positivistic narrative of 'onwards and upwards' medical progress.

To prevent such a narrow view of the history of medicine, the maintenance of a number of theoretical frameworks ensures that a "healthy pluralism and diversity" is retained.[39] This allows analyses to balance delicately somewhere between a 'Whiggish' depiction of linear medical advancement, evident in many earlier institutional accounts, and the modern trend towards a more relativist approach which evaluates each theory and practice of medicine individually.[40] Early medical histories tended towards oversimplification, appearing, as Porter states, as "the

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[36] Information regarding the Royal Naval Hospital in Bermuda is scarce, Brief paragraphs exist in a small handful of works; one detailed study of the institution written by Staff Surgeon Christopher Harvey in 1878 is held by the National Archives, but is so fragile that it cannot be examined. Another by J.R. Williams (*Care: 100 Years of Hospital Care in Bermuda* [Camden Editions, Bermuda, 1994]) focuses on a later period and does not cover the establishment of this hospital. However, insight can be gleaned from the little that is available, particularly including C. Hollis-Hallett, *Forty Years of Convict Labour: Bermuda, 1823-1863* (Juniperhill Press, Bermuda, 1999); C. Hollis-Hallett, 'Bermuda's Convict Hulks', *Bermuda Journal of Archaeology and Maritime History*, 2 (1990), pp. 87-104. Australian references include R. Gowlland, *Troubled Asylum: The History of the Royal Derwent Hospital* (self-published, New Norfolk, 1981); G. Crabbe, *History of Lachlan Park Hospital* (Department of Health Services, Hobart, 1966); L. Cullen, *Royal Derwent Hospital, Past to Present, 1936-1976* (self-published, New Norfolk, 1978); W. Rimmer, *Portrait of a Hospital: The Royal Hobart* (Royal Hobart Hospital, Hobart, 1981); C. Craig, *Launceston General Hospital: First Hundred Years, 1863-1963* (Board of Management of the Launceston General Hospital, Launceston, 1963); *Caring for Convicts and the Community: A History of Parramatta Hospital* (Cumberland Area Health Service, Westmead, 1988), while British sources include K. Waddington, *Medical Education at St Bartholomew's Hospital, 1123-1995* (The Boydell Press, Woodbridge, 2003); N. Moore, *The History of St Bartholomew's Hospital* (C. Arthur Pearson Limited, London, 1918).; K. Waddington, *Charity and the London Hospitals, 1850-1898* (The Boydell Press, Woodbridge, 2000); V. Medvei and J. Thornton, *Royal Hospital of Saint Bartholomew's 1123-1973* (St Bartholomew's Medical College, London, 1974); D. Power and H. Warring, *A Short History of St. Bartholomew's Hospital, 1123-1923* (C. Whittington and Griggs, London, 1923); N. Moore, *The History of St Bartholomew's Hospital* (C. Arthur Pearson Limited, London, 1918).

[37] Risse, 'Hospital History' in Porter and Wear (eds.), *Problems and Methods*, p. 175.

[38] Risse, 'Hospital History' in Porter and Wear (eds.), *Problems and Methods*, p. 175.

[39] Porter, 'The Historiography of Medicine', p. 254.

[40] Porter, 'The Historiography of Medicine', p. 253.

unproblematic chronicle of how dreadful diseases had been conquered by great doctors."[41] This often produced a forced and artificial account, in which links were made between tenuously related events or periods in an attempt to produce a teleological storyline. While some historical accounts still suffer from a sense of unnaturally continuous progress and advancement, the relativist perspective challenged this view. Influenced by Foucaultian theories, it was suggested that each phase of medical development could not be understood or analysed outside its social and historical context, as those contexts were integral parts of the practice and ideology themselves.[42] The rejection of a simplistic acquisition of knowledge, however, does not automatically assume that medical knowledge has not progressed.[43] While each phase of medical history is undoubtedly unique, it is equally true that each of these phases has augmented knowledge to the practice of healthcare – knowledge of the human body, both in its normal ('natural') state, and in its countless and endlessly diverse states of sickness.

Debate over the finer points of historical analyses heavily influenced works on broader medical history which offer insight into the stratification of the provision of health care in Britain and, to a lesser extent, the Australian colonies. Comprehensive overviews of medicine and medical care in Britain are to be found in Porter's numerous works and offer, for example, exploration of the development of hospitals and the role of medical science in this evolution.[44] Bynum and Smith have also written valuable synopses of British healthcare during the 1800s.[45]

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[41] Porter, 'The Historiography of Medicine', p. 254.
[42] M. Foucault, *The Birth of the Clinic* (Routledge, London, 2003); C. Jones and R. Porter (eds.), *Reassessing Foucault: Power, Medicine and the Body* (Routledge, London, 1998); A. Peterson and R. Bunton (eds), *Foucault, Health and Medicine* (Routledge, London, 1997).
[43] Porter, 'The Historiography of Medicine', p. 254.
[44] Porter's works include R. Porter (ed), *The Cambridge Illustrated History of Medicine* (Cambridge University Press, Cambridge, 1996) and R. Porter, *The Greatest Benefit to Mankind: A Medical History of Humanity from Antiquity to the Present* (Fontana Press, London, 1999).
[45] Smith, *The People's Health*; W. Bynum, *Science and the Practice of Medicine in the Nineteenth Century* (Cambridge University Press, Cambridge, 1996). Porter and Bynum also co-edited the *Companion Encyclopaedia of the History of Medicine* (Routledge, London, 1993).

Although there are far fewer histories of early Australian medical care, a small group of valuable investigations of colonial healthcare provide perspective to the comparative research presented within this thesis. Earnshaw's 'The Lame, the Blind, the Mad, the Malingerers', for example, examines the treatment of sick and disabled convicts, with a focus on the use of their labour in establishing the colonies.[46] Penal healthcare is also examined in works such as Maxwell-Stewart's 'Crime and Health', which offers a wider examination of convicts' medical treatment and its interconnections with the colonial disciplinary system, and Morris' exploration of the treatment of convict patients at penal stations and hospitals such as Port Arthur and New Norfolk.[47] Additionally, MacFie and Bonet's study of the relationship between the medical treatment of prisoners at Port Arthur and their diet and labour adds detail to the understanding of the experiences of convict patients.[48] In the 1930s, authors such as Cleland and Crowther also wrote pieces examining various aspects of early Australian healthcare, such as levels of morbidity and mortality at particular penal settlements.[49] Cummins' overview of the development of healthcare in New South Wales and Cumpston's examination of the evolution of public health in colonial Australia both offer indispensible factual information by recounting the evolution of the structure of colonial medicine.[50]

Building on the research undertaken by these and many other authors, this thesis examines the provision of care to patients at the New Norfolk Hospital, the Royal Naval Hospital, and St

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[46] B. Earnshaw, 'The Lame, the Blind, the Mad, the Malingerers: Sick and Disabled Convicts within the Colonial Community', *Journal of the Royal Australian Historical Society*, 81 (1995), pp. 25-38.
[47] H. Maxwell-Stewart, 'Crime and Health: An Introductory View' in P. Richards, B. Valentine and T. Dunning (eds.), *Effecting a Cure: Aspects of Health and Medicine in Launceston* (Myola House of Publishing, Launceston, 2006), pp. 35-54; M. Morris, *Invalids, Paupers and Lunatics: Port Arthur, New Norfolk and Other Peninsula Stations* (unpublished, written for the Port Arthur Historic Site Management Authority, 2002).
[48] P. MacFie and M. Bonet, *Convict Health at Port Arthur and Tasman Peninsula, 1830-1877: The Relationship between Diet, Work, Medical Care and Health* (unpublished paper written for the National Parks and Wildlife Service, Hobart, 1984).
[49] J. Cleland, 'Morbidity and Mortality in the Convict Settlement at Port Arthur, Tasmania, from 1830-1835', *The Medical Journal of Australia*, 2 (1932), pp. 347-350; W. Crowther, 'Some Aspects of Medical Practice in Van Diemen's Land, 1825-1839', *The Medical Journal of Australia*, 1 (1935), pp. 511-519.
[50] C. Cummins, *The Colonial Medical Service* (New South Wales Department of Health, North Sydney, 1974); J. Cumpston, 'Public Health in Australia: Part 1, the First Forty-Two Years', *The Medical Journal of Australia*, 1 (1931), pp. 491-500; J. Cumpston, 'Public Health in Australia: Part 2, the Second Period, 1830-1850', *The Medical Journal of Australia*, 1 (1931), pp. 591-597.

Bartholomew's Hospital. These institutions were selected to allow a comparison of care in hospitals specialising in the treatment of the sick poor (in the case of St Bartholomew's), convict patients (at New Norfolk and, to a lesser extent, Bermuda) and of naval and military inmates (at Bermuda). The records from these three hospitals were all compiled between the years of 1830 and 1848, thus allowing effective comparison of treatment methods. While this was a period of great change in medicine, with scientific innovations and pathological advances transforming the theoretical and professional foundations of the discipline, day-to-day practice developed much more gradually.

Since the 1980s, a burgeoning interest in social history has lent some urgency to the quest for new ways to examine the daily experiences of the past.[51] Case notes are one such source.[52] By combining quantitative and qualitative perspectives, they provide the means to construct a multi-dimensional analysis of healthcare as it evolved over time, encompassing less studied aspects such as interaction between doctors and among medical staff and patients, as well as more standard explorations of treatment and medical advancements.[53] As records of the day-to-day practicalities of hospital care, they allow a critical perspective on the actions of doctors, and insight into the relationship between medical staff and patients.[54] Case notes offer a means to explore disparities between the medical ideal delivered by textbooks and manuals, and the

[51] J. Warner, 'The Uses of Patient Records by Historians: Patterns, Possibilities and Perplexities', *Health and History*, 1 (1999), p. 101.
[52] J. Andrews, 'Case Notes, Case Histories and the Patient's Experience of Insanity at Gartnaval Royal Asylum, Glasgow, in the Nineteenth Century', *Social History of Medicine*, 11 (1998), p. 255.
[53] Risse and Warner, 'Reconstructing Clinical Activities', p. 185, p. 189.
[54] G. Davis, *The Cruel Madness of Love: Sex, Syphilis and Psychiatry in Scotland, 1880-1930* (Editions Rodopi, Amsterdam, 2008); U. Tröhler, 'Quantification in British Medicine and Surgery, 1750-1830, with Special Reference to its Introduction into Therapeutics' (unpublished Ph.D. dissertation, University of London, 1978), Risse and Warner, 'Reconstructing Clinical Activities', p. 183; T. Turner, *A Diagnostic Analysis of the Casebooks of Ticehurst House Asylum, 1845-1890* (Cambridge University Press, 1992).

practical realities of bedside care, and also provide a unique pathway to access details of the patient's experience.[55]

That these experiences changed dramatically throughout the nineteenth century is clear.[56] Between the 1770s and the 1840s the patient lay at the very centre of the theory and practice of medicine.[57] The sick person's own report of their bodily and emotional condition formed the basis of the practitioner's treatments; here, physical and psychological health were integrated and examined jointly by patient and doctor. From the early to mid-nineteenth century, however, there was a sudden and dramatic shift from the patient as a person to a "collection of synchronized organs," one or more of which was responsible for causing disease.[58] The identification of this disease was based not on a consultative process between patient and doctor, but on the explanation and diagnosis of the condition as expressed by the practitioner. The verbal description of illness relayed by the sick person was discredited as ignorant and/or emotional, and was replaced by a comprehensive physical examination, undertaken by a doctor, which aimed to correlate the manifestation of external symptoms with internal lesions.[59] This dismissal of patients' self-knowledge and their understanding of the meaning of sickness and of health acted to endorse and sanction practitioners' accounts of disease and prognosis.[60] As the patient's expression of the experience of illness and the practitioner's understanding of abnormal pathological findings came to be unequally weighted, fundamental concepts of disease were revised. For the first time, diseases could be articulated and embodied outside the person.

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[55] As Warner states, "what textbooks and journal articles said clinicians should do is not a reliable index of what they actually did. By turning to patient records, we have a way of telling" (Warner, 'The Uses of Patient Records', pp. 102-103).
[56] See also E. Ackerknecht, Medicine at the Paris Hospital, 1794-1848 (The Johns Hopkins Press, Maryland, 1967).
[57] N. Jewson, 'The Disappearance of the Sick-Man from Medical Cosmology, 1770-1870', *Sociology*, 10 (1976), pp. 227-229.
[58] Andrews, 'Case Notes', p. 263; Jewson, 'The Disappearance of the Sick-Man', p. 229.
[59] Jewson, 'The Disappearance of the Sick-Man', p. 229.
[60] Andrews, 'Case Notes', p. 263.

The period from which the case notes utilised in this research are drawn dwells ambiguously on the boundary between these two very different medical cosmologies, and therefore incorporates aspects of both. While reminders of the dominance of heroic regimes of bleeding and blistering lingered on in the still-enthusiastic prescription of physical methods of treatment, patients were simultaneously described with increasing frequency as case studies, their explanations of their suffering belittled as quaint and irrational when examined in the light of scientifically-justified pathology and anatomy.[61] In such a situation, where the language and practice of medicine were rapidly changing, extreme caution must be used when transcribing and analysing data to prevent generalisations, and to avoid succumbing to the temptation of forcing nineteenth-century medical terminology and diagnostic nomenclature into twenty-first century categories.[62]

To further support the use and meaning of terms as they appears in the records, and to provide clarification and additional information, it is essential to analyse the content of case notes in conjunction with other contemporary records.[63] While these documents may convey little about the experiences of the patient, they reveal a great deal about the environment (both physical and social) in which inmates underwent treatment and convalescence.[64] As with any historical document, it is also important to maintain an awareness of the interests and motives of the author – whether censorship was intentional or unconscious, what it may have been beneficial to record, and what may have been omitted.[65] As Andrews asserts, case notes were not written as a complete account of a patient's experience in a medical institution; rather, these records were widely used as teaching aids, with the aim of improving the clinical and theoretical practice of scientific medicine.[66]

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[61] Andrews, 'Case Notes', p. 263.
[62] Risse and Warner, 'Reconstructing Clinical Activities', p. 186, p. 193.
[63] Andrews, 'Case Notes', p. 264.
[64] Warner, 'The Uses of Patient Records', p. 102.
[65] Andrews, 'Case Notes', p. 265; Risse and Warner, 'Reconstructing Clinical Activities', p. 191.
[66] Andrews, 'Case Notes', p. 266, p. 280.

The impact of the movement from 'bedside medicine' to 'hospital medicine', dominated by the advance of science, is evident in the case notes of all three institutions.[67] It is perhaps present mostly clearly in the records from St Bartholomew's Hospital. As a large urban teaching institution, heavy emphasis was placed upon clinical aspects of cases rather than personal characteristics of patients – the pathological and anatomical over the physical, the psychiatric over the emotional, the statistically significant over the individual. At the New Norfolk Hospital, and to a lesser extent the Bermudian institution, patients retained something more of their distinctiveness. The differences between the depictions of these three groups of patients are as much an illustration of the diversities in the records and their authors as they are a rendering of the variations between the institutions themselves.

The records from New Norfolk Hospital were selected primarily because a complete set was available for a six year period.[68] A total of four hundred and two cases from this institution were transcribed in their entirety. The majority of the New Norfolk records were written by Dr Frederick George Brock, an Edinburgh-trained surgeon who arrived in Van Diemen's Land in 1830.[69] In 1848 Brock was reappointed to the colonial hospital in Port Arthur, while Dr John Meyer and Dr George Huston assumed the responsibilities of patient care and documentation at New Norfolk.[70] These three practitioners, like all colonial surgeons, were required to keep comprehensive records on their patients' conditions and the treatments used to tend them. These notes were the property of the Government Medical Department, and formed a key component of the systematic documentation which was used to manage prisoners. In 1849, Dr

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[67] See Jewson, 'The Disappearance of the Sick-Man'.
[68] The records from New Norfolk Hospital were available at the Tasmanian Archive and Heritage Office on microfilm.
[69] Tasmania Archive and Heritage Office, *Governor's Office*: *F.G. Brock to Earl Grey* (GO 33/72), p. 813.
[70] MacFie and Bonet, *Convict Health at Port Arthur and Tasman Peninsula, 1830-1877: The Relationship between Diet, Work, Medical Care and Health* (written for the National Parks and Wildlife Service, Hobart, 1984), p. 46; TAHO, GO: *F.G. Brock to Earl Grey* (GO 33/64), p. 78.

William Dawson, Deputy Inspector of Hospitals, wrote to Lieutenant-Governor William Denison emphasising that it was:

> the duty of all Medical Officers to keep a Medical Register in which should be detailed the History and treatment of every case of disease under their care…In these Registers…everything which might elucidate the real nature of the sickness of the Prisoners [should be recorded.][71]

It appears that most colonial surgeons understood the significant role of these records in the wider functioning of the colony. Practitioners took care to methodically explore the conditions and circumstances of their patients in an effort to provide comprehensive case notes. Some doctors, however, felt the burden of such research and record-keeping , and required a sharp reminder of their duties. While Brock was stationed at Port Arthur, he and his senior medical officer, Dr Lee, were berated by Dawson for records "so negligently kept and so abounding in deficiencies and inconsistencies as to be valueless as public documents from which one could expect any true information."[72]

Despite this disparagement, Brock's case notes were generally of a high standard. The records of his New Norfolk patients are, indeed, unusually comprehensive in their length and remarkably comprehensive in their detail.[73] Brock, Meyer and Huston documented each patient's medical history (both prior to transportation and since their arrival), recording symptoms and performing physical examinations, including relevant facts such as occupations. Accordingly, their notes feature copious details of patient's lives, and sometimes provide up to two pages of details before discussion of treatment is commenced.

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[71] TAHO, *Colonial Office: Letter from W. Dawson* (280-248-576), (transcribed by Port Arthur Historic Site Management Authority).
[72] TAHO, CO: *Letter from W. Dawson* (280-248-576), [transcribed by Port Arthur Historic Site Management Authority]).
[73] TAHO, *New Norfolk (Royal Derwent) Hospital Patient Records - Case Books* (1842-1847), (HSD 246/1/4-6).

In colonial Van Diemen's Land, case notes were simultaneously medical records and government documents. Alongside their ability to augment medical knowledge, these notes played a very particular role in colonial society. While in British asylums case notes had traditionally been used to monitor mentally unstable patients, in Van Diemen's Land, where the accurate identification and classification of prisoners was a crucial aspect of their domination by the state, these records intensified the surveillance of convict bodies and prevented malingerers from usurping the authority and the resources of the state.[74] A 'paperwork panopticon' was constructed around each prisoner, with comprehensive records detailing the height, age and appearance of each prisoner and describing everything from the colour of their eyes to the length of their nose.[75] Case notes, however, were able to provide information regarding the mental and emotional state of convicts which went beyond these physical descriptions.[76]

To match the complexity and depth of records from the New Norfolk Hospital, case notes from other institutions were sought which had a similar level of detail and patient information. However, the rarity of complete or near-complete runs of detailed patient records from the nineteenth century considerably increases the challenge of selecting three institutions with comparable records. As few sets of data were available for study, records had to be selected on the basis of limited information. Inevitably, differences between the three samples became apparent during the course of the study. Yet, while the format and purposes to which the three groups of records were originally put differed, by focusing on the content and subject matter of the notes (both that recorded and that omitted), the disparities became less significant. Details such as diagnoses, medical and physical treatments, and use of patient narrative were present in

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[74] Earnshaw, 'The Lame', p. 33; Digby, "A Human Face to Medicine", p. 103; J. Gascoigne, *The Enlightenment and the Origins of European Australia* (Universsity of Cambridge, Cambridge, 2005), pp. 134-135; Andrews, *Case Notes*, p. 256.
[75] J. Bradley and H. Maxwell-Stewart, 'Embodied Explorations: Investigating Convict Tattoos and the Transportation System' in I. Duffield and J. Bradley (eds.), *Representing Convicts: New Perspectives on Convict Forced Labour Migration* (Leicester University Press, Leicester, 1997), p. 191.
[76] In cases of absconding or other offenses, a description of the offender would be published to assist in recapture or punishment (see, for example, State Library of Tasmania, *David Tilbury's Description* [per *Pestonjee Bomanjee*], [CON 18/39]).

most records, while previous medical histories, length of stay in hospital, diet, and post-mortem records were also available in many cases.

Records from the Royal Naval Hospital in Bermuda and St Bartholomew's Hospital in Londonwere identified as covering the same era and, from samples of notes obtained, initially appeared to contain similar levels of patient detail. From the Bermudian institution a total of four hundred and thirteen cases were selected, while at St Bartholomew's a smaller group of one hundred and eighty-four records were transcribed.[77] All the cases selected were male (of the three institutions, St Bartholomew's was the only hospital to admit female medical patients).[78]

There are, however, some notable differences in the nature of the three groups of records, many of which only became apparent as research progressed. The records from the New Norfolk Hospital encompass all the medical cases admitted to the institution as in-patients between 1842 and 1848. They are case histories, with copious and detailed notes on symptoms, treatment, and regular updates on the patient's progress (see Figure 1). These notes also include a brief medical history and, in cases which terminated fatally whilst under treatment, a post-mortem report.

The St Bartholomew's records are predominantly detailed post-mortem records, although a significant proportion includes brief and sporadic details of diagnosis and treatment (see Figure 2). These records were taken by Dr Edward Latham Ormerod in bustling surgical and medical wards at the large metropolitan hospital between the year 1842 and 1848. Comprehensive though these case notes are, they do not record the details of every patient who entered the

[77] Records from the Royal Naval Hospital in Bermuda were obtained from the National Archives (the original records were photographed and digitised), and the same process was used to obtain records from the St Bartholomew's Museum and Archive.

[78] Female cases from St Bartholomew's Hospital were entered into the database used during this research; however, this was simply to ensure the whole dataset was transcribed – female cases were *not* used in any analyses in this research. The innate complexity of an examination of gender constructs was beyond the capacity of this thesis, particularly as such a discussion seemed less than relevant given that only one of the three medical institutions admitted female patients.

institution over this period. Rather, they are individual cases selected for their unusual features or their ability to illustrate a particular medical point. Accordingly, these records represent the surgeon's personal interests rather than an objective snapshot of cases admitted to St Bartholomew's.

While the records from the Royal Naval Hospital are less subjective, they are also not case notes, but letters which accompanied patients as they were transferred from ships' sick bays to the shore-based hospital (see Figure 3). Written by surgeons on board naval and convict vessels between 1832 and 1836, these despatches encompass a brief outline of the patient's complaint, any recent treatments, and the reason for transfer to hospital. Included with these letters are a single post-mortem, and a tiny handful of cases in which a second or third follow-up report accompanies the first.

An attempt at a simple comparison between the three hospitals would, due to these disparities, be rendered unrepresentative and somewhat illusory. The points of similarity, however, allow specific parts of the records to be effectively contrasted, permitting insightful investigations of particular issues. Additionally, the notes also offer glimpses of the diversity of the institutions and the differences between the patient groups treated at each of the three institutions. Due to the remarkable depth of detail of the records from the New Norfolk Hospital, supported by the meticulous paperwork kept on each transported prisoner and now preserved in the Tasmanian Archive and Heritage Office, a great deal of information can be discovered about each Vandemonian patient. The conduct registers of convict patients, for example, reveal a number of unique details about each prisoner, including notes on many pre-existing disabilities and diseases.

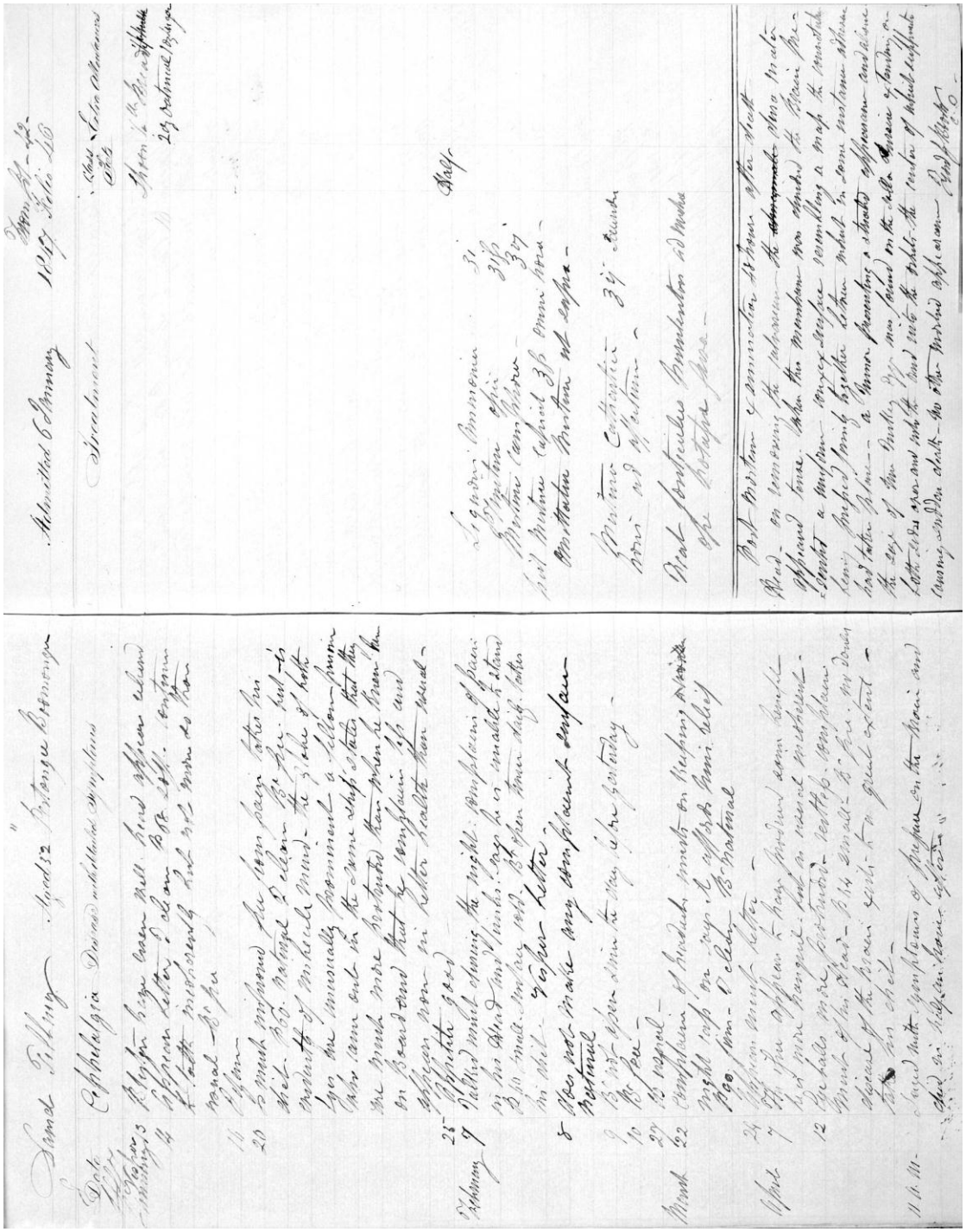

Figure 1: Case note from New Norfolk Hospital (Tasmanian Archive and Heritage Office, *Royal Derwent Hospital: David Tilbury* [HSD 246/1/4/46]).

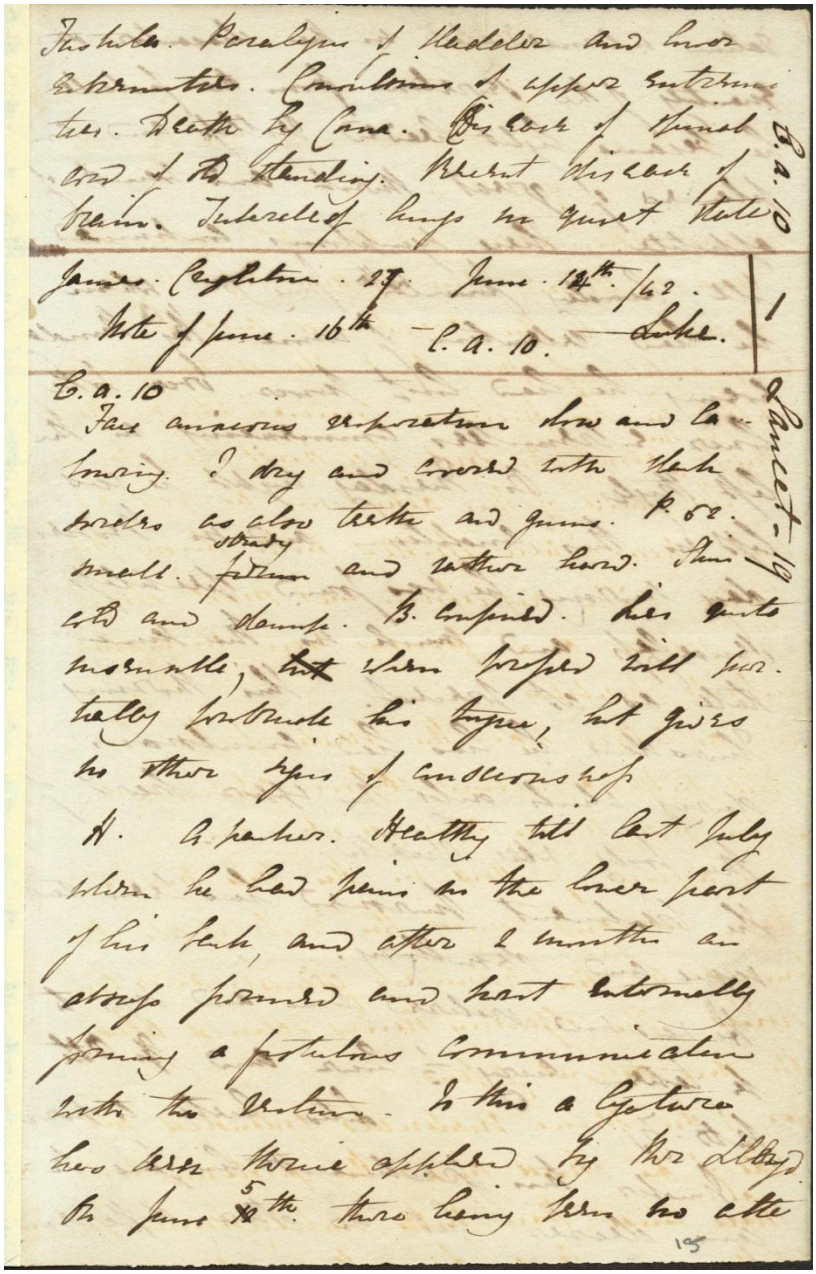

Figure 2: Case note from St Bartholomew's Hospital (St Bartholomew's Hospital Archive and Museum, St Bartholomew's Hospital, *Medical and Surgical Case Notes of Edward Latham Ormerod, Diseases of the Central Nervous System, Kidneys, Abdominal and Infectious Skin Diseases: James Craghton* [MR 16/6/15]).

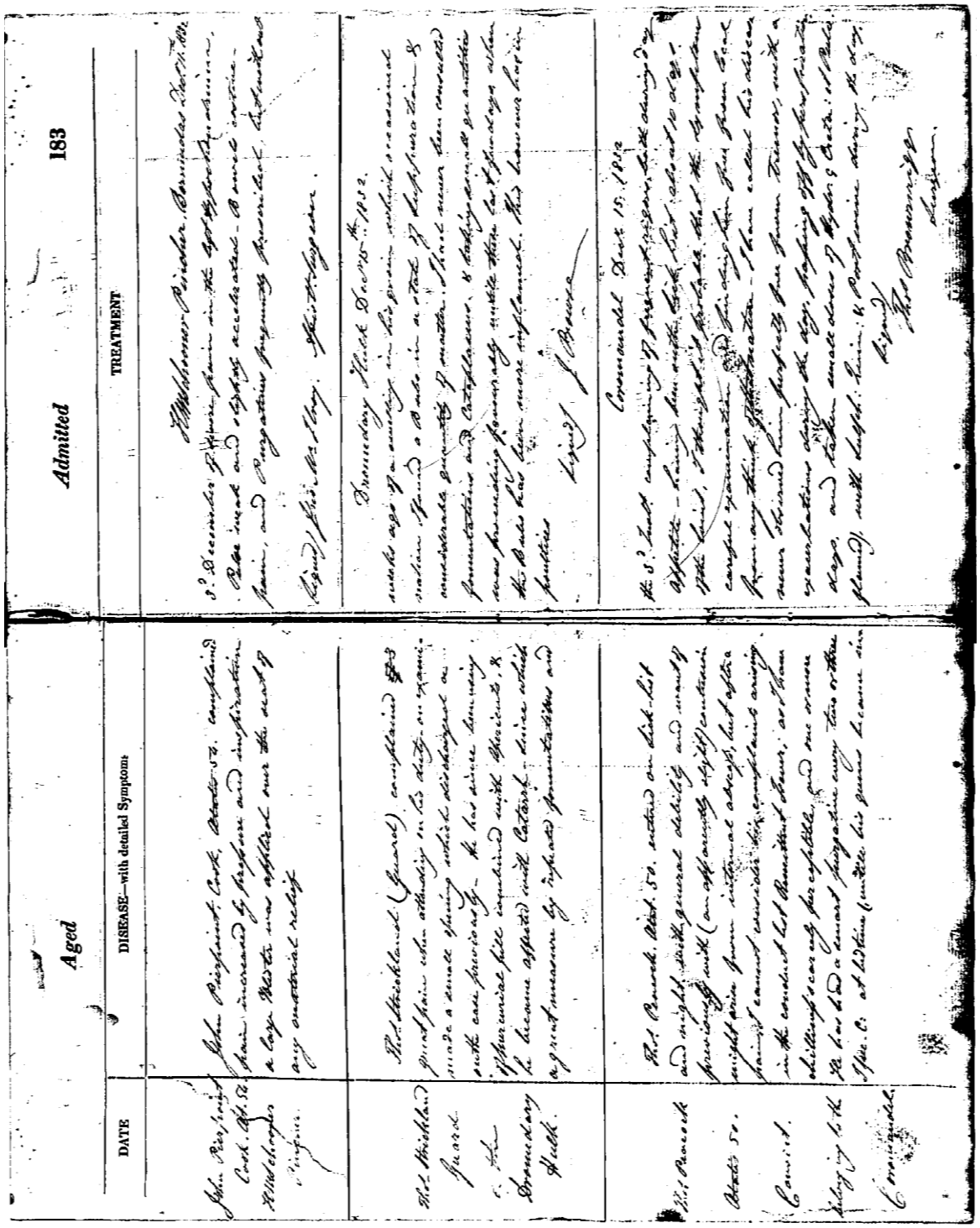

Figure 3: Case note from the Royal Naval Hospital, Bermuda (The National Archives, *Admiralty and Predecessors, Office of the Director General of the Medical Department of the Navy and Predecessors, Service Registers and Registers of Deaths and Injuries: Case Book, Royal Naval Hospital, Bermuda* [ADM 104/98, p. 00026]).

Of the four hundred and two cases from this institution, close to eight percent (thirty-one cases) arrived with pre-existing conditions or illnesses (see Table 1). This rate is higher than that found

by Earnshaw in her examination of 'Sick and Disabled Convicts in the Colonial Community'; in the 1820s, slightly more than five percent of male convicts transported to New South Wales from England and Ireland arrived with a documented disability or chronic disease, while this rate dropped still further during the 1830s to just under four percent.[79] New Norfolk's rate is also significantly higher than the rate of impairments reported in male convicts arriving in the probation era, which mirrored the rate of 1830s New South Wales at slightly less four percent.[80] Significant, however, is that of the thirty-one prisoners who arrived in Van Diemen's Land with a pre-existing condition or illness, the majority would have remained physically able to perform some type of labour – their condition did not entirely preclude employment. If the prisoner had been utterly incapable of any kind of labour, they would have been discounted as a suitable candidate for transportation and rejected during the medical assessments before embarkation.

Pre-Existing Condition or Illness	Number of Cases in Sample	Number per Thousand Cases
Visual Impairment	13	32
Hand Impairment	7	17
Impediment of Speech	4	10
Scrofular	3	7
Ear or Hearing Impairment	2	5
Heart Condition	1	2
Limb Impairment (Leg)	1	2
Total Cases	**31**	**77**

Table 1: Proportion of patients at New Norfolk Hospital who arrived in Van Diemen's Land with pre-existing conditions or illnesses.[81]

[79] Earnshaw, 'The Lame, the Blind', p. 26; Maxwell-Stewart, 'Crime and Health' in Richards, Valentine and Dunning (eds.), *Effecting a Cure*, p. 40.
[80] Maxwell-Stewart, 'Crime and Health', in Richards, Valentine and Dunning (eds.), *Effecting a Cure*, p. 40.
[81] TAHO, *Royal Derwent Hospital: Case Notes* (HSD 246/1/1, HSD 246/1/4, HSD 246/1/6); TAHO, *Conduct Registers of Male Prisoners Arriving in the Period of the Probation System* (CON 33/1).

In an era when medicine was unable to cure or even treat many disfiguring and disabling diseases, and when the mechanisation of many trades and the expansion of factories caused high rates of workplace injuries, it was normal for the disabled to work alongside the able-bodied.[82] Despite complaints by colonial officials that such workers were a drain on the meagre resources of a new colony, amputees and those with other physical impairments were viewed as competent and perceived as able to function as self-supporting members of the community.[83] Many were able to perform the same jobs as their able-bodied counterparts, perhaps with some modifications, while others took on light work such as cleaning or nursing in colonial hospitals or barracks. As convicts were viewed essentially as a labour force, transporting healthy and physically effective workers was necessarily a high priority.[84] The almost complete lack of alternative provisions for sick or otherwise incapable convict labourers in the infant Australian colony would also have been an important consideration.

Just as prisoners with severe disabilities and acute medical conditions were rejected for transportation, so too were those who were considered too elderly to be effective labourers. This, however, was not consistently enforced, with many convicts transported in their fifth and sixth decades of life. Accordingly, colonial institutions were forced to accommodate inmates who needed no active medical treatment, but could no longer care for themselves or be supported in the community. As a result, New Norfolk Hospital tended to relatively large numbers of patients over the age of forty years when compared to the other two institutions (see Figure 4). The relatively consistent number of patients aged between forty and seventy-nine received at New Norfolk, and the steady decrease of this age category in both Bermuda and London, reveals the significant role the Vandemonian institute played as an invalid depot in the

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[82] See P. Weindling (ed.), *The Social History of Occupational Health* (Croom Helm, Kent, 1985); R. Cooter and B. Luckin (eds.), *Accidents in History: Injuries, Fatalities and Society Relations* (Editions Rodopi, Amsterdam, 1997), especially Chapter 4, A. McEvoy, 'An Ecological Approach to Industrial Health and Safety'.
[83] Earnshaw, 'The Lame, the Blind', p. 27, Maxwell-Stewart, 'Crime and Health' in Richards, Valentine and Dunning (eds.), p. 39.
[84] S. Nicholas (ed.), *Convict Workers: Reinterpreting Australia's Past* (Cambridge University Press, Cambridge, 1988).

colony. In contrast, the lack of elderly patients at Bermuda reflects the rapidity with which infirm patients were returned to England or transferred to other colonial stations. A similar absence at St Bartholomew's was more likely to be a result of the activity of wider community networks of family, friends, and parish – the availability of other options for the infirm made the hospital a last resort for the aged.

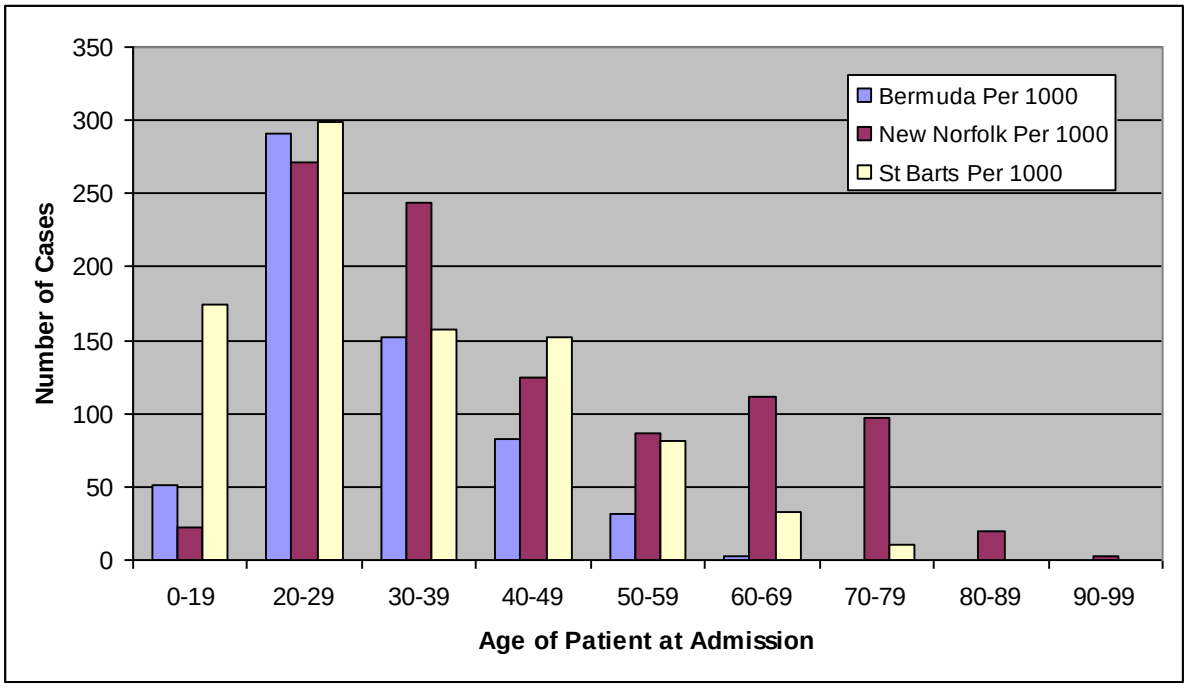

Figure 4: Age distribution of patients at the Royal Naval Hospital, Bermuda, New Norfolk Hospital, and St Bartholomew's Hospital.

At the other end of the age spectrum, however, St Bartholomew's admitted the highest number of young patients; although its admission policy generally precluded the treatment of children, the occasional 'interesting' case was slipped past the porter. Additionally, urban children were forced into work at a young age, and suffered injuries at a high rate due to the vulnerability of their unsupervised employment in dangerous conditions.[85] Few children were admitted to either

[85] One such case was that of William Hatley, who was admitted to St Bartholomew's in early July 1843. Hatley was ten years old when he was brought to the hospital suffering a horrific wound over his left hand and forearm, where the skin had been stripped from the limb by "the large teeth" of a carding machine. Beneath the mangled flesh, the bones of Hatley's wrist were broken and the tendons were torn. Surprisingly, despite the magnitude of the wounds, they initially appeared to be healing healthily and "there was no constitutional disturbance such as to cause

colonial hospital, although a number of convicts and sailors were only just in their teens.[86] Predictably, the largest number of cases can be observed in the age bracket twenty to thirty-nine years, the period during which labour productivity would be expected to be the highest, and medical attention accordingly most keenly sought after.

In order to contextualise the types of treatments provided to these patients in these three very different institutions, it is important to look at the development of healthcare in Britain in more detail, a task undertaken in Chapter Two. While this research is primarily focused on the treatment provided in hospital wards, it is also essential to briefly examine the role of unlicensed or 'quack' methods of healing which figured so significantly in the lives of many patients during the nineteenth century and earlier. It is important to recognise, however, that sources of healthcare which appear 'alternative' to modern eyes may have been fully accepted by the sick amongst the working classes – perhaps even perceived as more legitimate than the treatments provided by doctors in hospitals.[87] Indeed, in the first half of the nineteenth century the responsibilities of the doctor were often quite limited, with the roles of relatives, friends, and the wider community holding greater importance than the fleeting appearance of a hospital surgeon.[88] Dupree supports this view, commenting that when the sick had access to other sources of healthcare – ranging from family and friends to local apothecaries and unorthodox healers – medical institutions such as hospitals were less utilised.[89]

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apprehension for the boys [sic] life." Just days later, however, Hatley was "writhing with pain," his pale face bathed in perspiration and the skin of his left hand and arm red and swollen. Gradually tetanic contractions seized his body; after suffering agonising opisthotonic spasms Hatley died less than a week after he was admitted to hospital (St Bartholomew's Hospital Archive and Museum, St Bartholomew's Hospital, *Medical and Surgical Case Notes of Edward Latham Ormerod, Diseases of the Central Nervous System, Kidneys, Abdominal and Infectious Skin Diseases: William Hatley* (MR 16/6/133-MR 16/6/135a).

[86] One or two 'native born' children were admitted to New Norfolk Hospital (such as Danial Denny – see TAHO, *Royal Derwent Hospital: Danial Denny* [HSD 246/1/6/195]).

[87] Porter, 'The Patient's View', p. 188.

[88] Porter, 'The Patient's View', p. 175, p. 182, p. 192, p. 194.

[89] Dupree, 'Family Care', pp. 195-196.

Major public hospitals such as St Bartholomew's were, thus, one among several options for healthcare available to the British working classes during the eighteenth and nineteenth centuries.[90] Other than the hordes of unqualified practitioners, the medical needs of the poor were met – or not – by workhouse and public infirmaries, dispensaries and voluntary hospitals. The aristocracy and members of the upper classes were treated by elite physicians in their own homes, while the middle class was becoming increasingly enamoured with the multi-skilled general practitioner, who was able to contend with issues ranging from surgical procedures to midwifery, as well as offering the usual advice and prescriptions.[91] Alternatives for professional medical care available to lower classes were, however, less appealing. For most, the treatment offered by qualified practitioners in hospitals represented the last port of call, sought only by the desperately ill.

Chapter Three traces the concurrent development of the built environments of the hospital. While almshouses and small hospices proliferated across Britain from the sixteenth century, it was not until well into the following century that purpose-built medical institutions grew in popularity. Fortified by charitable generosity, hospitals increased both in size and in the significance of their role within society, with scientific innovations becoming physically manifest in the architecture and design of their buildings.

From an examination of the hospital buildings in Chapter Three, Chapter Four will explore the vast array of diseases and conditions treated within the walls of the three institutions. The varying rates of these illnesses will be considered, including the roles of different geographic and climatic conditions upon health. This analysis is contextualised by an examination of the process

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[90] See, for example, J. Pickstone, 'Medicine, Society and the State' in Porter (ed), *The Cambridge Illustrated History of Medicine*, p. 309; Porter, *The Greatest Benefit to Mankind*, pp. 288-289; L. Picard, *Victorian London* (Phoenix, London, 2006), p. 231.

[91] E. Shorter, 'Primary Care' in Porter (ed.), *The Cambridge Illustrated History of Medicine*, p. 126.

of diagnosis and the growing influence of anatomy and pathology during the nineteenth century, alongside the constantly evolving nomenclature of disease.

Chapters five and six will examine how such changes were gradually implemented in treatments received by patients in these three hospitals. The physical and medicinal treatments provided in medical institutions during the nineteenth century are areas which have been hitherto neglected by historians, although a few works provide valuable insights, such as those by Sturdy, Marland, and Curth.[92] The records of all three hospitals provide information (in varying levels of detail) regarding the frequency, uses, and types of treatments employed and the purposes for which they were prescribed. Chapter Five focuses on physical and surgical treatments. This broad category encompasses the spectacular, such as amputations and trephining, and the less dramatic but more common procedures of venesection, blistering, and cupping. Chapter Six explores the wide range of drugs utilised by British practitioners as the expansion of chemistry thrust ancient ingredients aside to make way for innovative metallic and mineral based elements. Despite the survival of a number of nineteenth-century inventories, very few examinations of hospital pharmacopoeias exist.[93] Risse's outstanding study of the Royal Infirmary of Edinburgh's pharmacopoeia and analysis of patterns of drug use is, however, a notable exception, and will inform the construction of comparisons of medicine and treatments undertaken for this thesis.[94]

Chapter seven will examine the final stage of hospital treatment experienced by some patients. The records of St Bartholomew's and New Norfolk Hospitals both include detailed post-

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[92] S. Sturdy, *Making Medicine Scientific: John Burdon Sanderson and the Culture of Victorian Science* (John Hopkins University Press, Baltimore, 2002); H. Marland, *Medicine and Society in Wakefield and Huddersfield, 1780-1870* (Cambridge University Press, Cambridge, 1987; L. Curth (ed.), *From Physick to Pharmacology: Five Hundred Years of British Drug Retailing* (Ashgate Publishing, Aldershot, 2006).

[93] For example, primary source pharmacopoeias include *Pharmacopoeia of St Bartholomew's Hospital* (J.E. Adlard, London, 1869); *Pharmacopoeia of the Middlesex Hospital* (publisher unknown, London, 1888); *The Pharmacopoeia of the London Hospital* (publisher unknown, London, 1868). Secondary works on nineteenth century pharmacology include F. Poynter (ed.), *The Evolution of Pharmacy in Britain* (University of Michigan, Michigan, 1965); S. Anderson (ed.), *Making Medicines: A Brief History of Pharmacy and Pharmaceuticals* (Pharmaceutical Press, London, 2005); R. Porter and M. Teich (eds.), *Drugs and Narcotics in History* (University of Cambridge, Cambridge, 1996).

[94] Risse, 'Hospital History' in Porter and Wear (eds.), *Problems and Methods*, pp. 192-194; Risse, *Hospital Life*.

mortem reports, allowing a glimpse at the treatment of the dead in two very different nineteenth-century medical institutions. From the Vandemonian hospital, mortality rates can also be analysed; this data can then be compared with statistics published by contemporary British institutions and with rates at other colonial hospitals. To die in hospital was often equated to dying alone, unprotected by family or friends and vulnerable to the insidious advances of the anatomist. The laws and regulations surrounding the use of corpses gleaned from hospital dead rooms are explored in this chapter, alongside the perceptions of dissection and anatomy expressed by both the working classes and the medical profession.

The overall aim of the thesis will be to open up a window into the daily life of medical institutions in the first half of the nineteenth century by exploring what it meant to be a hospital patient. This will involve an examination of the physical surroundings in which inmates spent their days, as well as the types of diseases and conditions from which they suffered, and the medicines and therapy with which they were treated. It will also entail an investigation of the practices applied to the corpses of those who died in institutions. In addition to this, evidence will be sought of the practical implementation of developments and advances in medical science which were transforming the wider provision of medical care in the period 1830-1850. This study thus provides an opportunity to trace the impact that these developments made on both treatment and patient experience in metropolitan and colonial hospitals. By contrasting these experiences in geographically isolated penal colony and naval hospital with one of the largest teaching hospitals in Britain, this thesis offers an opportunity to make a detailed examination of the everyday events which together comprised the wider patterns of changes and continuities in the practice and discourse of medicine in an era associated with dramatic change.

Chapter Two

Provision of Health Care

Prior to the 1850s, medicine had not yet attained the scientific dominance of later centuries. The role of the hospital was limited, with doctors perceived as possessing scarcely more practical ability to cure disease than the sufferer themselves.[95] Healthcare was widely undertaken in the home, with family and community networks providing support through sickness, assisted (as need and affluence permitted) by a diverse assortment of professional and lay practitioners. How, then, did the hospital come to dominate the provision of healthcare by the mid-nineteenth century? Were smaller colonial institutions, such as those in Bermuda and New Norfolk, as heavily influenced by the advance of medical and scientific knowledge as major urban hospitals such as St Bartholomew's in London? This chapter will seek answers to these questions by examining the development of healthcare available to the working classes, that "large body of persons" from which each of the three hospitals in this analysis predominantly drew their patients.[96] While each hospital targeted a specific element of the population – the New Norfolk

[95] P. Lloyd, 'A History of Medical Professionalisation in NSW: 1788-1950', *Australian Health Review*, 17 (1994), p. 15.
[96] Mayhew, cited in R. Maxwell, 'Henry Mayhew and the Life of the Streets', *The Journal of British Studies*, 17 (1978), p. 91.

Hospital was primarily run for the treatment of serving convicts, Bermuda Naval Hospital was established for ill or wounded sailors (although it also tended to prisoners), and St Bartholomew's was founded to care for the sick poor – all these groups were predominantly drawn from the British working classes.

Disease fostered a state of dependency, but those who sought hospital treatment – whether in Britain or its colonies – generally had no community networks to support them through their illness. When compounded by sickness, the interconnected influences of disintegrating family structures, unemployment, and economic instability necessitated the need for outside support – as Fissell contends, "illness alone did not make a hospital patient."[97]

Britain

The existing framework of British medical care informed that which was established in colonies such as Bermuda and Van Diemen's Land; thus, it is important to begin with an understanding of the origins and development of this system. Until the nineteenth century, strong local networks of working-class family and friends supported each other during times of sickness in both urban and rural communities. While apothecaries, drug-vendors, and other unorthodox practitioners were plentiful, hawking dubious medicines from their shopfronts and on the streets, the demanding tasks of nursing the ill were undertaken in the home.

As the influence of Christianity spread throughout the Middle Ages, so too did charitable virtues such as hospitality, service, and love. Accordingly, most early hospitals were established within

[97] M. Fissell, 'The 'Sick and Drooping Poor' in Eighteenth-Century Bristol and its Regions', *The Social History of Medicine*, 2 (1989), p. 35; M. Dupree, 'Family Care and Hospital Care: The 'Sick Poor' in Nineteenth-Century Glasgow', *Social History of Medicine*, 6 (1993), p. 196.

religious orders such as monasteries and convents, although a small number were launched independently.[98] These institutions identified the sick poor as particularly deserving of charitable assistance, but also offered assistance to other vulnerable groups such as the homeless, the aged, and travellers – people on the edge of society, the dispossessed who found themselves with nowhere else to turn.[99] Accordingly, the term 'hospital' encompassed four basic types of institutions – leprosaria, almshouses, houses established to tend for travellers and pilgrims, and those founded for the sick poor.[100]

Within these mediaeval institutions (particularly the last category, which most closely aligns with nineteenth-century perceptions of a 'hospital'), medical attention was unlikely to be provided by a 'qualified' medical practitioner.[101] Rather, volunteers and members of the associated religious order would tend to the needs of their inmates, with medical care being administered alongside food, clothing, and spiritual guidance.[102] This medical attention would have consisted of the provision of a warm bed, a hot bath, and a substantial meal – medicines were rarely administered in medieval institutions.[103]

The vulnerable and sick were recognised as a group which was dependant on the assistance of the community as a whole.[104] This tallied neatly with the Biblical emphasis on the rich coming to the assistance of the poor, where those with plenty gave generously to those who had little. Successful long-term practical application of these pleasant sentiments, however, was

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[98] K. Park, 'Medicine and Society in Medieval Europe, 500-1500' in A. Wear (ed.), *Medicine in Society: Historical Essays* (University of Cambridge, Cambridge, 1992), pp. 84-85.
[99] While members of the hospital's own community would be received without question, strangers might be required to provide evidence of their need before they would be offered assistance (G. Risse, *Mending Bodies, Saving Souls: A History of Hospitals* (Oxford University Press, Oxford, 1999), pp. 73-74; K. Park, 'Healing the Poor: Hospitals and Medical Assistance in Renaissance Florence' in J. Barry and C. Jones (eds.), *Medicine and Charity Before the Welfare State* (Routledge, London, 1991), pp. 26-27).
[100] M. Carlin, 'Medieval English Hospitals' in L. Granshaw and R. Porter (eds.), *The Hospital in History* (Routledge, London, 1989), p. 21.
[101] Carlin, 'Medieval English Hospitals' in Granshaw and Porter (eds.), *Hospitals in History*, p. 31.
[102] Granshaw and Porter (eds.), *Hospitals in History*, p. 4.
[103] Carlin, 'Medieval English Hospitals' in Granshaw and Porter (eds.), *Hospitals in History*, p. 31; M. Rubin, 'Development and Change in English Hospitals, 1100-1500' in Granshaw and Porter (eds.), *Hospitals in History*, p. 51.
[104] Park, 'Healing the Poor' in Barry and Jones (eds.), *Medicine and Charity*, p. 27.

uncommon. The vast majority of medieval hospitals established in the wave of economic, social and demographic expansion during the twelfth and thirteenth centuries disappeared as the fourteenth, fifteen, and sixteenth centuries wore on, forced to close their doors due to the effects of the Reformation combined with poor management, insufficient funds, and the impact of famines and epidemic disease.[105]

As the economic situations of mediaeval institutions fluctuated, and their capacity to provide care for the sick varied accordingly, concepts of charity and hospitality demanded constant reassessment. As the availability of financial support decreased, poverty and the poor came to be seen as socially threatening. Consequently, the capacity of religious orders and their hospitals to provide care for the sick poor was constrained, and forced to manifest itself in alternative forms which were financially and socially more sustainable.[106] Those institutions which managed to survive often did so through conversion to more profitable enterprises, with many being transformed into almshouses or educational institutions, where those who could afford to pay fees were admitted in preference to the poor.[107] Markus describes hospitals and these almshouses as essentially "a different kind of institution for the same kind of inmate" – the sick and vulnerable were admitted to both facilities, but the use of space was altered, allowing patrons of the almshouses greater independence than hospital patients.[108]

Amidst these social and economic upheavals, a small group of royal hospitals, including St Bartholomew's, were able to survive as their land and income were protected by law.[109] However, as these institutions occupied large swathes of property in the centre of London (from

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[105] Rubin, 'Development and Change' in Granshaw and Porter (eds.), *Hospitals in History*, p. 43, p. 52.
[106] Rubin, 'Development and Change' in Granshaw and Porter (eds.), *Hospitals in History*, p. 55.
[107] Carlin, 'Medieval English Hospitals' in Granshaw and Porter (eds.), *Hospitals in History*, p. 34; Rubin, 'Development and Change' in Granshaw and Porter (eds.), *Hospitals in History*, p. 53.
[108] T. Markus, *Buildings and Power: Freedom and Control in the Origin of Modern Building Types* (Routledge, London, 2004), p. 97.
[109] See Chapter three for further detail on these royal hospitals.

which much of their income was derived) and were overseen by influential local authorities, they were peculiarly vulnerable to political turmoil.[110] As St Bartholomew's governors were staunchly devoted to the Crown, it was perhaps the least affected of the royal hospitals by such political disturbance, although it nonetheless experienced numerous changes in power. This was particularly evident during the late seventeenth century when many hospital governors were dismissed from positions of power (including those who had only recently been instated in an attempt to displace Whigs from any position of public influence).[111]

By 1800, London had a population of over one million people. Seven hospitals, providing a combined total of just two thousand beds, served the sick poor of the city, while a similar number of institutions offered care to the remainder of England and Wales.[112] Compounding this staggering shortage was the displacement of family and social structures, particularly in rural areas, triggered by the industrial revolution.[113] This effectively meant that the labourers flooding urban centres lacked any form of traditional community support in the event of illness. As increasing urban populations placed ever more pressure on these limited hospital facilities, public authorities were forced to confront the severe need for easily accessible health care for the lower classes.[114] Although periodic attempts at reform had been made in the past, usually under the menace of uncontrolled epidemics, as soon as any immediate threat had passed the health boards and hospital committees were disbanded.[115]

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[110] C. Rose, 'Politics and the London Royal Hospitals' in Granshaw and Porter (eds.), *Hospitals in History*, pp. 142-143.
[111] Rose, 'Politics and the London Royal Hospitals' in Granshaw and Porter (eds.), *Hospitals in History*, p. 143; Granshaw and Porter (eds.), *Hospitals in History*, p 8.
[112] B. Abel-Smith, *The Hospitals: A Study in Social Administration in England and Wales* (Heinemann, London, 1964), pp. 4-5.
[113] A. Clark-Kennedy, *The London: A Study in the Voluntary Hospital System* (vol. 2, Pitman Medical, London, 1963), p. 1.
[114] S. Cherry, 'The Hospitals and Population Growth: The Voluntary General Hospitals, Mortality and Local Populations in the English Provinces in the Eighteenth and Early Nineteenth Centuries (Part 1)', *Population Studies*, 34 (1980), p. 66.
[115] H. Richardson, *English Hospitals 1660-1948: A Survey of the Architecture and Design* (National Monuments Record Centre, Swindon, 1998), p. 10.

Where no public institutions served the need, private individuals sought to capitalise on the desperation of the sick poor. By the end of the eighteenth century, irregular practitioners outnumbered orthodox medical men at a ratio of nine to one.[116] These 'quacks' are often presented in modern accounts of nineteenth-century medicine as charlatans, selling ineffective – and sometime dangerous – medicines to ignorant and gullible consumers for exorbitant prices.[117] This generalisation is in some cases accurate, but these unorthodox practitioners did also provide a significant portion of the population with accessible, commonsense health care.

Those who could afford it would visit the 'sixpenny doctor' at the local dispensary for care, where for a small fee they would receive care and medicine.[118] Unfettered by the restrictive admission criteria of the hospitals, general practitioners were able to provide affordable care to large numbers of people suffering a wide variety of illnesses using the dispensary as their shopfront.[119] Some incorporated small in-patient facilities, but most primarily aimed to deliver medical, surgical, and obstetric treatment to out-patients, either on site at the dispensary or in the sufferers' homes.[120] By 1834 London had thirty-five dispensaries, founded by donations and subscriptions to alleviate the poverty-inducing illnesses suffered by the 'deserving poor', the "worthy working man and his family."[121]

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116 P. Martyr, 'No Paradise for Quacks? Nineteenth Century Health Care in Tasmania', *Tasmanian Historical Studies*, 5 (1997), p. 141; Abel-Smith, *The Hospitals*, p. 3; L. Picard, *Victorian London: The Life of a City, 1840-1870* (Phoenix, London, 2006), p. 231.
117 F. Smith, *The People's Health: 1830-1910* (Croom Helm, London, 1979), p. 255; Fissell, 'The 'Sick and Drooping Poor", p. 36; J. Taylor, *Hospital and Asylum Architecture in England, 1840-1914: Building for Health Care* (Mansell, London, 1991), p. 38.
118 I. Loudon, 'The Origins and Growth of the Dispensary Movement in England', *Bulletin of the History of Medicine*, 55 (1981), p. 322.
119 A. Crowther and M. Dupree, 'The Invisible General Practitioner: The Careers of Scottish Medical Students in the Late Nineteenth Century', *Bulletin of the History of Medicine*, 70 (1996), p. 407; J. Andrews, 'A Respectable Mad-Doctor? Dr Richard Hale, F.R.S. (1670-1728), *Notes and Records of the Royal Society of London*, 44 (1990), p. 169; Loudon, 'The Origins and Growth of the Dispensary Movement', p. 330.
120 I. Loudon, 'Deaths in Childbed from the Eighteenth Century to 1935', *Medical History*, 30 (1986), pp. 17-19; Loudon, 'The Origins and Growth of the Dispensary Movement', p. 322.
121 Fissell, 'The 'Sick and Drooping Poor", p. 36; Taylor, *Hospital and Asylum Architecture in England*, p. 26; Loudon, 'The Origins and Growth of the Dispensary Movement', p. 326.

From the 1720s, however, the influence of a new type of hospital had gradually been increasing across Britain.[122] Reminiscent of much earlier Christian influences, voluntary hospitals were established as a means for the wealthy to support the underprivileged, thus merging medicine and the relief of the poor.[123] While the upper classes patronised private physicians, and the pauperised were theoretically provided for by the Poor Law system, voluntary general hospitals were founded to fill a void in the provision of medical care in Britain.[124] The working classes and the 'deserving poor' were worst afflicted by the intertwining of disease and poverty, but had the least access to other forms of medical care. Voluntary hospitals sought to provide:

> relief and comfort of Multitudes who are unable to be at the expence [sic] of Advice or Physick, but are not distinguished by the name of The Poor, because they do not come under the care of a Parish or Workhouse, and yet…They are in present want; and are of the diligent and industrious, that is of the useful and valuable part of all Society.[125]

Affluent donors of all (upper) classes and denominations devoted themselves to the care of the sick poor.[126] In return for their sponsorship and administrative services, these donors were awarded the title of governor and the material and social privilege of nominating cases for admission; the larger the donation, the more patients each governor could recommend for hospital care.[127]

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[122] F. MacDonald, 'The Infirmary of the Glasgow Town's Hospital, 1733-1800: A Case for Volunteerism?', *Bulletin of the History of Medicine*, 71 (1999), p. 64.
[123] These institutions were founded on the contributions of wealthy patrons whose voluntary donations gave the hospitals their name (MacDonald, 'The Infirmary of the Glasgow Town's Hospital', p. 65).
[124] S. Cherry, 'The Hospitals and Population Growth: The Voluntary General Hospitals, Mortality and Local Populations in the English Provinces in the Eighteenth and Early Nineteenth Centuries (Part 2)', *Population Studies*, 34 (1980), p. 254.
[125] *An Account of the Establishment of the First County Hospital at Winchester with the Proceedings of the Governors etc. from the First Institution on St Luke's Day, 18 October, 1736, to Michaelmas, 1737* (Point 8) cited in E. Sigsworth, 'Gateways to Death? Medicine, Hospitals and Mortality, 1700-1850' in P. Mathias (ed.), *Science and Society, 1600-1900* (Cambridge University Press, Cambridge, 1972), p. 99.
[126] C. Stevenson, *Medicine and Magnificence: British Hospital and Asylum Architecture* (Yale University Press, New Haven, 2000), p. 107.
[127] Picard, *Victorian London*, p. 222; Taylor, *Hospital and Asylum Architecture in England*, p. 14, pp. 33-34; Sigsworth, 'Gateways to Death?' in Mathias (ed.), *Science and Society*, p. 99; Stevenson, *Medicine and Magnificence*, p. 106.

To secure admission to hospital, a sufferer was required to obtain a governor's recommendation (commonly known as 'lines' or 'tickets').[128] Accidents and emergency cases were rare exceptions which were accepted without tickets; indeed, general hospitals were perhaps better suited to the treatment of acute injuries.[129] All other potential patients, however, were required to petition a hospital governor, demonstrating their need for hospital admission and their inability to pay for alternative forms of care. To obtain a ticket, social networks were often more crucial than was medical necessity – a well-connected friend or benevolent employer was more likely to supply lines to an acquaintance than a stranger.[130] Once they had secured their recommendation, there remained still more hurdles to cross before they could hope to find themselves in a hospital bed.

Voluntary hospitals typically admitted inpatients on just one day per week, a narrow timeframe which precluded many acutely ill from accessing treatment.[131] Admission criteria were restrictive, stipulating that:

> No woman big with child, nor child under six years of age…no persons in consumption, disordered in their sense, or subject to epileptic fits, suspected to have the smallpox, venereal disease, itch, or any other infectious distemper, no persons having habitual ulcers on their legs, cancers not admitting operations or dropsies in their last stages, or apprehended to be in a dying condition, or incurable, be admitted in-patients.[132]

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[128] Smith, *The People's Health*, p. 250.
[129] Loudon, 'The Origins and Growth of the Dispensary Movement', p. 335.
[130] Dupree, 'Family Care and Hospital Care', p. 196, pp. 207-208; Sigsworth, 'Gateways to Death?' in Mathias (ed.), *Science and Society*, p. 99.
[131] Abel-Smith, *The Hospitals*, p. 10; Taylor, *Hospital and Asylum Architecture in England*, p. 14.
[132] In mediaeval times, however, hospitals established alongside religious orders often tended to young unwed mothers, with some institutions even established solely for their care. St Bartholomew's had a ward to accommodate pregnant women, and was known for "keeping women in childbirth until their purification and sometimes feeding their infants until weaned." The hospitals also sought to care for infants from Newgate prison, which was located close by (Carlin, 'Medieval English Hospitals' in Granshaw and Porter (eds.), *Hospitals in History*, p. 33; Sigsworth, 'Gateways to Death?' in Mathias (ed.), *Science and Society,* p. 100; quote from S. Cherry, 'The Role of a Provincial Hospital: The Norfolk and Norwich Hospital, 1771-1880', *Population Studies*, 26 (1972), p. 295).

Furthermore, any person able to afford private medical care was also excluded, as were paupers; their place was the workhouse.[133] These restrictive regulations were not always followed rigidly, to some extent because contemporary knowledge of the progression of various diseases was limited (meaning, for example, that cases of infectious diseases may be inadvertently admitted at a stage when the condition did not appear to be contagious).[134] The very existence of such narrow admission criteria was, however, an impediment to those in desperate need of medical attention.[135]

Almoners and porters, the gatekeepers of the hospital, then selected patients for admission. If there were no available beds, even those proffering tickets were turned away.[136] Those rejected by the porters could present themselves at an outpatient's department for assistance. It was an unappealing and humiliating option – deliberately made to be so to discourage the attendance of those wealthy enough to afford to pay for their medical care.[137] Patients faced a long wait on hard wooden benches crowded with other sufferers, the coughs of consumptives and the smell of foetid dressings and unwashed children mingling with the nauseating sights of congealed blood and weeping ulcers. Those courageous or desperate enough to persevere made their way through the queues until they had their few moments with a physician's or surgeon's junior assistant, who was constantly on the lookout for 'interesting' cases. Any patient exhibiting atypical or uncommon symptoms was admitted without the need for a ticket, and tended by the hospital's senior practitioners.[138] The vast majority of outpatients, however, were treated with generic cathartics or emetics and sent home, with more complicated prescriptions being filled by the local apothecary.[139]

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[133] Cherry, 'The Hospitals and Population Growth (Part 2)', p. 251.
[134] Sigsworth, 'Gateways to Death?' in Mathias (ed.), *Science and Society,* p. 101.
[135] Loudon, 'The Origins and Growth of the Dispensary Movement', p. 334.
[136] Smith, *The People's Health*, p. 254.
[137] B. Duncum, 'The Development of Hospital Design and Planning' in F. Poynter (ed.), *The Evolution of Hospitals in Britain*, (Pitman, London, 1964), p. 214.
[138] Smith, *The People's Health*, p. 250, p. 260; Abel-Smith, *The Hospitals*, p. 39.
[139] See Chapter Six for more detail on medicinal treatments (Smith, *The People's Health*, p. 257).

With a distinct lack of first-hand evidence of working-class patients' views of the experience it is difficult to conclude whether or not these brusque encounters satisfied the needs of the sick poor.[140] It is irrefutable, however, that these patients were fortunate to have any form of access to a professionally trained practitioner. Governors, too, appreciated this chaotic, collective form of medical treatment. The crowds which presented at outpatient departments provided evidence of a busy and well-used hospital – crucial evidence with which to persuade donors (potential and continuing) to be generous towards the charitable institution.[141]

Patients who made it past the hospital's gates and were admitted by the porter were entitled, on presentation of their tickets, to a defined period of hospital care provided by the sponsorship accorded by the governor's donation. While a sponsored patient was usually admitted for forty days, in some cases this was extended up to eight weeks, after which patients would be summarily discharged if they were unable to renew their sponsorship.[142] There were frequent disputes over the benefits and disadvantages of the subscription system, with hospital governors and medical staff generally ranged on opposite sides of the debate.[143] The conflict between the two groups was essentially a matter of control, a question of whose influence and authority was greater.

The governors wholeheartedly endorsed the subscription scheme. It provided them with the opportunity to sate their philanthropic inclinations via a means which offered the potential for ample public recognition and scope for influencing the management of a major social institution, but simultaneously allowed them to remain at a comfortably physical and social distance from

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[140] Illiteracy would present the main barrier to the passing on of tales of working-class patients' encounters with medical practitioners. Interestingly, it appears that the convicts transported to Australia were marginally better educated than the general working-class population in Britain; Richards suggests that this may be a result of selecting convicts with higher skill levels for transportation (E. Richards, 'An Australian Map of British and Irish Literacy in 1841', *Population Studies*, 53 (1999), p. 355; Smith, *The People's Health*, pp. 257-258, p. 264.
[141] Duncum, 'The Development of Hospital Design' in Poynter (ed.), *The Evolution of Hospitals*, p. 214.
[142] Abel-Smith, *The Hospitals*, pp. 36-37; Taylor, *Hospital and Asylum Architecture in England*, p. 14).
[143] MacDonald, 'The Infirmary of the Glasgow Town's Hospital, p. 97.

their charges. Governors demanded value for their donations, and usually succeeded in having their patients remain in hospital until they were cured, relieved, or died.

Surgeons and physicians, however, were less enamoured of the subscription system, as it restricted the growth of voluntary hospitals by curbing the number of beds each institution could support.[144] The focus for practitioners was obviously the 'medicalisation' of the hospital – the more patients the hospital could admit and treat, the more material available for teaching and the advancement of knowledge.[145] The emphasis was accordingly on a rapid patient turnover, which would enable acutely ill patients who may actively benefit from care to make use of hospital beds. Accordingly, surgeons sought to strictly enforce the length of time each individual was permitted to remain in the hospital, and often tried to use their influence to have a patient discharged. If a patient's stay became protracted, medical staff tended to lose interest in the patient and seek to have them dismissed from the hospital, usually by asserting that their disease was incurable or chronic in nature, and would not be relieved or cured by further hospital treatment.

Those chronic or incurable patients who remained in hospital may have paradoxically suffered a worse fate than those discharged.[146] Francis Cartwright, a "kind and gentle" seventeen year-old apprentice, was admitted to St Bartholomew's Hospital in 1846 with mania brought on by an attack of rheumatism.[147] He lay delirious in his bed for two or three days "until the cause was discovered in an abscess over the right hip, which soon after [its detection] relieved itself by

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144 Loudon, 'The Origins and Growth of the Dispensary Movement', p. 334.
145 MacDonald, 'The Infirmary of the Glasgow Town's Hospital', p. 98.
146 This is a difficult subject on which to generalise, particularly with the lack of first-hand accounts which has already been noted above. In hospital, patients were close to medical attention should it be urgently required. At home, the sick would be close to family and friends in a more relaxed and comfortable environment. However, the presence of a sick person in the home, possible requiring significant levels of care and attention, would prevent other members of the household working, and drain funds and resources away from those who were also in need of them.
147 St Bartholomew's Hospital Archives and Museum, St Bartholomew's Hospital, *Medical and Surgical Case Notes of Edward Latham Ormerod, Diseases of the Central Nervous System, Kidneys, Abdominal and Infectious Skin Diseases: Francis Cartwright* (MR 16/6/201).

bursting."[148] Cartwright's delirium eased, and he was able to speak sensibly, although slowly and without interest. The surgeon attending his case held hopes of his recovery, but over the following days Cartwright gradually became increasing emaciated. Within a fortnight the skin on his back was sloughing away and he had become so thin that his pelvic bone had become visible through the wound on his hip.

As Cartwright's chances of recovery declined, so too did any interest in his case. His notes record that for the final few days of his life the teenager "lay just alive and no more."[149] The surgeons and nurses recognised that Cartwright's condition was terminal; his case could not warrant any further care, which would be better offered to patients who presented more favourably. Francis Cartwright was left alone, lying "almost unnoticed" in the gloomy ward until he passed away almost three lonely months after his admission.[150]

Intriguingly, this neglect of patients is not apparent at the colonial institutions. A patient at St Bartholomew's was all but anonymous, just one of the mass of working-class people which thronged London's streets. A convict patient, however, was one of a much smaller group, where each inmate was painstakingly named, numbered, and described, and where their labour was crucial to the establishment of vulnerable colonies. Accordingly, detailed notes were kept on colonial patients, with their symptoms and treatments meticulously recorded. Dying inmates were accorded particular care, often tended by the surgeon several times a day; Henry Bavin, a twenty-five year-old sawyer, was attended four times by his surgeon at the New Norfolk Hospital the day prior to his death.[151] Remarkably, it appears that in some cases the surgeon even sat by the patient's bed in his final hours. At large public hospitals such as St Bartholomew's, such scenes of tender care were few and far between. The sheer size of the

[148] SBHAM, SBH, *Medical and Surgical Case Notes: Francis Cartwright* (MR 16/6/202).
[149] SBHAM, SBH, *Medical and Surgical Case Notes: Francis Cartwright* (MR 16/6/202).
[150] SBHAM, SBH, *Medical and Surgical Case Notes: Francis Cartwright* (MR 16/6/202).
[151] Tasmanian Archive and Heritage Office, *Royal Derwent Hospital: Henry Bavin* (HSD 246/1/1/219).

London hospital – both in patient and staff numbers – would render such personal care almost impossible.

Some patients succumbed to infections contracted whilst under treatment for other complaints (for example, a labourer admitted with a compound fracture of the arm would have been at an extremely high risk of dying from infection of the wound, rather than from the injury itself), while others fell victim to assorted fearsome 'hospital diseases.'[152] These epidemic infections, such as erysipelas, gangrene, pyaemia, septicaemia and various forms of fever, existed to some extent wherever people were accommodated in overcrowded and unhygienic conditions.[153] Their prevalence meant that hospitals were more closely associated in the public mind with poverty and death than restoration to health, a perception which was fostered by publications such as John Howard's 1789 *Account of the Principal Lazarettos in Europe*.[154] The sick exhausted all other options before seeking admission, so their situations were often desperate by the time they saw a hospital surgeon.[155] This instigated a cruel cycle, with sufferers waiting until they were acutely ill before seeking treatment, by which time many were considered incurable and denied hospital treatment.

Those turned away from hospitals found themselves in a desperate situation. Many were without a family or community support network – if they were able to access such assistance, they would have been less likely to seek admission to a hospital. Denied treatment at a hospital, entrance to another charitable institution – the workhouse – may have been their only alternative. Workhouses had traditionally admitted the sick poor, with those suffering chronic

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[152] Stevenson, *Medicine and Magnificence*, p. 8; Taylor, *Hospital and Asylum Architecture in England*, p. 12.
[153] J. Cumpston, 'Public Health in Australia: Part 1, The First Forty-Two Years', *The Medical Journal of Australia*, 17 (1931), p. 493; A. Dally, 'The Development of Western Medical Science' in R. Porter (ed.), *Medicine: A History of Healing* (The Ivy Press Limited, Thailand, 1997), p. 50; J. Kisacky, 'Restructuring Isolation: Hospital Architecture, Medicine and Disease Prevention', *Bulletin of the History of Medicine*, 79 (2005), p. 2.
[154] J. Howard, *Account of the Principal Lazarettos in Europe with Various Papers Relative to the Plague* (T. Cadell, London, 1789).
[155] R. Haines, *Life and Death in the Age of Sail: The Passage to Australia* (University of New South Wales Press, Sydney, 2003), p. 52; Stevenson, *Medicine and Magnificence*, p. 3.

(and/or untreatable) conditions and venereal or infectious diseases making up the bulk of admissions.[156] The primary difference between workhouse inmates and hospitals patients was, as Markus points out, that the latter were not forced to work, while labour was an integral and unquestioned part of workhouse life.[157] Despite this monotonous and thankless employment, by the early nineteenth-century workhouse dormitories had become severely congested. Overflowing with those who had been refused hospital care because they were infectious, incurable, or simply uninteresting, the beds were crowded with paupers suffering conditions ranging from painful and irritated eyes or shameful venereal diseases to chronic asthma, paralysis or crippling rheumatism.

The 1834 Poor Law Amendment Act was an attempt to ease the pressure placed on the social and health support systems by reducing both claimants and costs.[158] It made no provision, however, for the almost seventy-five percent of paupers who sought assistance due to illness or infirmity.[159] The principle of 'less eligibility' dictated that those receiving assistance were to be kept in conditions inferior to those experienced by the poorest independent labourer.[160] Where the needy had previously been eligible to receive 'outdoor relief' in the form of pensions, the new Prohibitory Order decreed that all able-bodied paupers were now to be routinely admitted to the workhouse.[161] The sick, however, were permitted to continue receiving outdoor relief for as long as they could care for themselves in their own homes.[162] As Abel-Smith comments, "a system which offered relief at home to the sick and punishment in an institution to the able-

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156 Richardson, *English Hospitals*, p. 54.
157 Markus, *Buildings and Power*, p. 98.
158 Clark-Kennedy, *The London*, pp. 5-6.
159 The circumstances and ramifications of the Poor Law comprise an immense topic which cannot be discussed effectively here. For more detailed analysis, see, for example, B. Harris, *The Origins of the British Welfare State: Society, State and Social Welfare in England and Wales, 1800-1945* (Palgrave MacMillan, Hampshire, 2004); S. King, *Poverty and Welfare in England, 1700-1850: A Regional Perspective* (Manchester University Press, Manchester, 2000); A. Digby, *The Poor Law in Nineteenth Century England and Wales* (Historical Association, London, 1982); A. Brundage, *The Making of the New Poor Law: The Politics of Inquiry, Enactment and Implementation, 1832-1839* (Rutgers University Press, New Jersey, 1978).
160 Abel-Smith, *The Hospitals*, pp. 46-47.
161 A. Digby, *Pauper Palaces* (Routledge and Kegan Paul, London, 1978), p. 167.
162 Picard, *Victorian London*, p. 221.

bodied" acted as a recipe for malingering.[163] It was also impractical for the overworked Poor Law Medical Officers, with limited time and resources, to ponder over individual diagnoses; a person's status had to be decided with as little deliberation as possible.

The reforms had been founded on a calculated public fear and repellence of the workhouse, the assumption that houses of industry represented the depths of desperation and destitution. As inmates were automatically 'pauperised', admission to a workhouse represented the very lowest and most miserable rung on the ladder of society. Accordingly, authorities assumed that by making the workhouse the only option for support, the poor would be encouraged to make provision in case of illness – membership of insurance schemes or friendly societies, for example. Although these assumptions were fundamentally correct, the vast majority of the poorer working classes could simply not afford the 1d to 2½d weekly payment required to register in these schemes.[164] The sheer number of those in need of medical care, and the extent of the support required by the sick poor, had also been drastically underestimated.[165]

Eighteenth century houses of industry often incorporated sick wards or 'pesthouses' to protect the main institution from diseases carried by unhealthy inmates.[166] Workhouses established in the 1830s and 1840s, however, were influenced by the lack of provision for the sick and disabled in the Poor Law Amendment Act, and generally accommodated all the inmates together – the able-bodied worked, slept and ate alongside the infirm, the mentally unstable, and the physically ill.[167] As a result, these institutions were teeming with "a motley collection of aged and infirm, destitute chronic sick, orphans, foundlings, mentally defectives, and able-bodied paupers [as well as] a floating population of vagrants and temporarily sick" who had been ignored by the Poor

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[163] Abel-Smith, *The Hospitals*, p. 47.
[164] Digby, *Pauper Palaces*, pp. 175-176.
[165] R. Porter, *The Greatest Benefit to Mankind: A Medical History of Humanity from Antiquity to the Present* (Fontana Press, London, 1999), p. 409.
[166] Richardson (ed.), *English Hospitals*, p. 55.
[167] Smith, *The People's Health*, p. 352; Taylor, *Hospital and Asylum Architecture in England*, pp. 66-67.

Law reforms.[168] It was not until the mid-nineteenth century that some workhouses began to erect dedicated infirmaries alongside the main institutions to treat their sick inmates, while other districts designated one workhouse as a pauper hospital, where all local cases requiring medical care were received.[169] The provision of medical and surgical treatment within workhouse infirmaries was finally ratified in the General Consolidated Order of 1847.

Prior to the 1850s, admission to the workhouse infirmary or a voluntary hospital signalled a failure of community networks to care for their own. This stigma of a charitable institution compounded the dismal reputation of hospitals as places of desperation and despair, rather than health and recovery.[170] For the sick, the hospital represented not the *only* option, but perhaps the *last* option. From the mid-nineteenth century, however, a multifaceted transformation of the hospital gradually revolutionised public perception of institutional medical care. Hospitals became epicentres of advancements in medical science; from earlier anatomical and pathological discoveries to later anaesthetic and surgical breakthroughs, all converged within hospitals. Over a period of two or three generations, mortality rates dropped until it was safer to be treated as an in-patient than at home. For the first time, hospital patients had wider treatment options and improved prospects of recovery compared to those who could afford medical attention in their homes. Advances in knowledge and improved diagnostic practices were only available in hospitals; the poor had access to better medical care than that which was available to the wealthy with their elite physicians and their house calls.[171] To rectify this startling social imbalance, admission policies were broadened and the stigma of hospitals as charitable institutions began gradually to wane. While essentially only curable or 'interesting' adult cases had been admitted

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168 Clarke-Kennedy, *The London*, p. 6.
169 Digby, *Pauper Palaces*, p. 166; Smith, *The People's Health*, p. 352; Taylor, *Hospital and Asylum Architecture in England*, p. 23; Abel-Smith, *The Hospitals*, p. 46, p. 83.
170 A. Scull, *The Most Solitary of Afflictions: Madness and Society in Britain, 1700-1900* (Yale University Press, New Haven, 1993), p. 42, p. 134; Stevenson, *Medicine and Magnificence*, p. 8.
171 Duncum, 'The Development of Hospital Design' in Poynter (ed.), *The Evolution of Hospitals*, p. 223.

earlier in the century, by the 1850s children and those suffering infectious diseases were readily received at general hospitals and specialist institutions.[172]

Although the story of British hospital development throughout the nineteenth century could be in no way considered a tale of 'onwards and upwards' progress, from amidst the chaos of political upheaval and bureaucratic wrangling significant advances emerged. Medical innovations, coupled with the improvements in hospital design and a new emphasis on hygiene and sanitation, aided the gradual disintegration of the negative reputation of hospitals. The number of hospitals multiplied dramatically: by the mid-nineteenth-century London was served by around two hundred and fifty voluntary institutions.[173] Fortified with medical innovations and equipped with improved facilities, these hospitals had the potential to make positive contributions to the health of the working classes.[174] While their ability to combat epidemic diseases remained restricted, medical institutions were nonetheless able to provide curative therapy for increasing numbers of patients. Diseases and conditions that would have been distressing, disabling or even deadly could be treated, whether the outcome was alleviating, reducing or completely eradicating the complaint

Healthcare aboard Ship: Medicine on Convict Voyages

Between their departure from British gaols, and their arrival on the shores of Australia or Bermuda, a systematic welfare programme was employed to tend the needs of convicts. A significant component of this programme was medical care intended to maintain the health of the unfree patients, and to treat those who succumbed to illness during the voyage.

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[172] Cherry, 'The Hospitals and Population Growth (Part 2)', p. 259.
[173] A. Hardy, 'Diagnosis, Death and Diet: The Case of London', *Journal of Interdisciplinary History*, 18 (1988), p. 400; Richardson (ed.), *English Hospitals*, p. 1.
[174] Cherry, 'The Hospitals and Population Growth (Part 1)', p. 71.

The introduction of the surgeon-superintendent in 1815 is perhaps the best known improvement in the medical care of convicts aboard ship. Their appointment marks the culmination of a gradual series of small advancements begun as early as 1797, when surgeons began to receive instructions governing their treatment of convict patients.[175] While these guidelines did produce benefits for prisoners aboard ship, they were ambiguous, inconsistently enforced, and did not extend surgeons' scope of authority much beyond the treatment of disease. As such, they remained but token gestures of reform.[176] As the Napoleonic Wars drew to a close in 1815, Assistant Colonial Surgeon William Redfern was fighting his own battle to reform the state of medical supervision on board convict vessels. He wrote a detailed report outlining the failings of the system, and suggesting, among numerous other proposals, that qualified surgeons should be selected from the Royal Navy and appointed on every convict vessel in the capacity of a government supervisor.[177]

The extension of the surgeon's authority into improving conditions aboard ship was a significant step forward for convict patients. As surgeon-superintendent, he was able to influence the general welfare of the prisoners, encompassing the distribution of rations, the regular cleaning of clothing, bedding, and quarters, adequate ventilation, regular exercise on deck, and the supervision of punishment.[178] The improvement of these aspects had the potential to significantly improve the health of the convicts. A number of patients' case histories from both the Bermudian and Vandemonian hospitals record the negative impact of poor conditions upon health while under sail. Robert Simcoe, a twenty-five -year-old convict transported to Van Diemen's Land, suffered from chronic rheumatism brought about by exposure to cold while

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[175] K. Humphery, 'A New Era of Existence: Convict Transportation and the Authority of the Surgeon in Colonial Australia', *Labour History*, 59 (1990), p. 63.
[176] D. McNeil, 'Medical Care aboard Australia-Bound Convict Ships, 1786-1840', *Bulletin of the History of Medicine*, 26 (1952), p. 124; Humphery, 'A New Era', p. 62.
[177] McNeil, 'Medical Care', p. 129.
[178] B. Smith, *A Cargo of Women: Susannah Watson and the Convicts of the Princess Royal* (New South Wales University Press, Sydney, 1988), p. 24.

aboard ship.[179] John Brooks, Thomas Clarke and Jonathon Wilson were all transferred to the Royal Naval Hospital in Bermuda from their respective ships' sick bays due to lack of space.[180] For some patients, it was the ship's rations which were unsuitable; Bermudian convict James Toole, for example, was unable to "make use of the diet allowed on board," and so was sent to the shore-based hospital to take advantage of the wider range of foods available.[181]

Though reforms had extended the scope of the surgeon-superintendents' remit, the primary focus of the role remained the maintenance of health on board ship. The types of treatment adopted to combat disease essentially mirrored that administered in land-based institutions; whether patients were confined to a hammock aboard a Bermudian hulk or kept to a narrow hospital bed on a vessel bound for in Van Diemen's Land, the common aim was the protection of the health of the convict workforce.

Patients under medical treatment would often be confined to the small hospital on board ship. Here, the surgeon-superintendent would visit the sick at least twice a day, with more frequent checks kept on those "in a precarious state."[182] The sick bay also provided an area suitable for isolating patients in the event of an outbreak of infectious disease.[183] A prisoner exhibiting symptoms of dysentery, fever, or any other type of contagious condition would have his head shaved, and be thoroughly washed with warm water and soap before being admitted to the small sick bay. His bedding and clothing would be fumigated or, if considered completely infested,

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[179] TAHO, *RDH: Robert Simcoe* (HSD 246/1/243).
[180] The National Archives, *Admiralty and Predecessors, Office of the Director General of the Medical Department of the Navy and Predecessors, Service Registers and Registers of Deaths and Injuries: Case Book, Royal Naval Hospital, Bermuda: John Brooks* (ADM 104/98, p. 00040); *Jonathan Wilson* (ADM 104/98, p. 00242); *Thomas Clarke* (ADM 104/98, p. 00120).
[181] NA, *Case Book, Royal Naval Hospital, Bermuda: James Toole* (ADM 104/98, p. 00106).
[182] W. Glascock, *The Naval Service or Officers' Manual for Every Grade in His Majesty's Ships* (2nd ed., Parker, Furnival, and Parker, London, 1848), p. 110.
[183] I. Brand and M. Staniforth, 'Care and Control: Female Convict Transportation Voyages to Van Diemen's Land, 1818-1853', *The Great Circle*, 16 (1994), p. 33.

thrown overboard.[184] Robert Riddell, a New Norfolk patient who was stricken with cholera in 1832, may have been subject to these stipulations.[185]

Instructions such as these, issued in response to Redfern's revealing report, proved to be a turning point in the provision of medical care aboard convict ships. Prisoners who fell ill on board ship prior to 1815 were likely to receive treatment at the hand of a freshly qualified young surgeon, or from poorly trained practitioners who could not support themselves through private practice.[186] The introduction of the surgeon-superintendent, however, provided convict patients with a well-qualified and equipped medical practitioner, operating within an orderly system specifically designed to maintain their health.

The impact of the surgeon-superintendent proved to be so great that the period of convict voyages is now generally divided into two distinct phases, as described by McDonald and Shlomowitz.[187] The first period, 1788-1814, was typified by a high mortality rate resulting from poor hygiene and inadequate pre-voyage screening. The second stage, 1815-1868, began with the introduction of the surgeon-superintendent. Mortality rates in this phase had diminished under the influence of improved screening, better sanitary measures, and improved healthcare on board ship. This increasing emphasis on maintaining and supporting the health of convicts can be observed throughout the narratives of many convict patients. Their experiences mirror the wider medicalisation of colonial society.

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[184] McNeil, 'Medical Care', p. 134; Brand and Staniforth, 'Care and Control', p. 33.
[185] TAHO, *RDH: Robert Riddell* (HSD 246/1/32).
[186] J. McDonald and R. Shlomowitz, 'Mortality on Convict Voyages to Australia, 1788-1868', *Social Science History*, 13 (1989), p. 287.
[187] McDonald and Shlomowitz, 'Mortality on Convict Voyages', p. 300.

Australia: Van Diemen's Land and New South Wales [188]

Colonial Australia presented an opportunity for the British government to establish a completely new structure for the provision of health care.[189] While the configuration of existing British systems of health and social support systems exerted a strong influence over the moulding of this framework, settlers and authorities alike were keen to avoid the dehumanising disadvantages of workhouses and voluntary hospitals.[190] Until the late 1830s, when medical boards were established to investigate the validity of practitioners' qualifications and formally define the boundaries between orthodox and irregular health providers, these groups of practitioners operated alongside one another in an uneasy and unregulated market of government hospitals, charitable dispensaries, voluntary agencies, and private practitioners.[191]

The provision of government healthcare in the Australian colonies was overseen by a principal surgeon, supported by assistant and district surgeons.[192] Together, these practitioners were responsible for the medical care of convicts, officials, emancipists, free settlers, and in some circumstances military personnel.[193] However, the extent of their duty of care towards all but

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[188] It is necessary to examine the history of the provision of healthcare in New South Wales as the Medical Service in Van Diemen's Land was part of New South Wale's for the early period of its history.

[189] N. Barrett, 'The Contribution of Australians to Medical Knowledge', *Medical History*, 11 (1967), p. 321; M. Morris, 'A Matron's Honour: The Trials of Alice Gertrude Kenny', *Island Magazine*, 76 (1998), p. 46.

[190] B. Gandevia, 'Occupation and Disease in Australia since 1788', *The Medical Journal of Australia*, 22 (1971), p. 1105; C. Cummins, *A History of Medical Administration in NSW, 1788-1973* (2nd ed., New South Wales Department of Health, North Sydney, 2003), p. 3.

[191] Medical qualifications were regulated in Australia through the 1837 establishment of the Board of Medical Examiners and the formalisation of the 1838 Bill to Regulate the Practice of Medicine; this process did not occur in Britain until the General Medical Council was formed in 1858 (Lloyd, 'A History of Medical Professionalisation', p. 15, p. 21; Martyr, 'No Paradise for Quacks?', p. 141; K. Russell, 'Medicine in Melbourne: The First Fifty Years', *The Medical Journal of Australia*, 2 (1977), p. 17).

[192] While the principal surgeon was responsible for the day-to-day management of medical services, major decisions such as the distribution of appointments, promotions, and dismissals were overseen by the Governor (Cummins, *A History of Medical Administration in NSW*, p. 14).

[193] See Glossary for definition of terms (C. Craig, *Launceston General Hospital: First Hundred Years, 1863-1963* (Board of Management of the Launceston General Hospital, Launceston, 1963), p. 1).

prisoners under sentence was the subject of ongoing debate.[194] Outside their medical obligations, colonial surgeons were also expected to supervise penal discipline and involve themselves in community affairs, such as the mediation of judicial matters, the establishment of community institutions and participation on inquiry, medical, and lunatic boards.[195]

A hospital was among the first buildings erected upon the arrival of the First Fleet.[196] These facilities, however, were barely functional, consisting of a small village of tents under the authority of Surgeon-General (Principal Surgeon) John White.[197] Demonstrating the urgency of providing improved accommodation for the sick, who lay sweltering under the February heat, and the importance of tending to the health of the convict workforce, just a few weeks later these tents were replaced by a wooden building with a shingled roof and dirt floors.[198] By 1790 a prefabricated hospital had arrived from England; although it was designed to be erected in a matter of hours, the six hundred and two pieces took two weeks to assemble.[199] Vulnerable to the harsh Australian conditions, this hospital soon succumbed to white ants and fell into a state of disrepair, but the ramshackle structure remained Sydney's primary medical institution until the completion of the infamous 'Rum Hospital' in 1816.[200] While this hospital had been pieced together after six years of negotiation (both within the government and between the government

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[194] Upon the amalgamation of civil and military medical services in 1836, military personnel posted at outstations were attended by colonial surgeons, while in urban centres the larger numbers of military personnel could support the dedicated assignment of a naval surgeons (Cummins, *A History of Medical Administration in NSW*, p. 17, p. 20).
[195] W. Anderson, *The Cultivation of Whiteness: Science, Health and Racial Destiny in Australia* (Melbourne University Press, Melbourne, 2005), pp. 68-69.
[196] S. Nicholas, 'The Care and Feeding of Convicts' in S. Nicholas (ed.), *Convict Workers: Reinterpreting Australia's Past* (Cambridge University Press, Cambridge, 1988), p. 192.
[197] E. Ford, 'Medical Practice in Early Sydney: With Special Reference to the Work and Influence of John White, William Redfern and William Bland', *The Medical Journal of Australia*, 2 (1955), p. 42; E. Ford, 'Some Early Australian Medical Publications', *Medical History*, 16 (1972), p. 206; Cummins, *A History of Medical Administration in NSW*, p. 13.
[198] J. Kerr, *Design for Convicts: An Account of Design for Convict Establishments in the Australian Colonies During the Transportation Era* (Library of Australian History, Sydney, 1984), p. 4; Ford, 'Medical Practice in Early Sydney', p. 45.
[199] Kerr, *Design for Convicts*, p. 4; Cummins, *A History of Medical Administration in NSW*, p. 24.
[200] Kerr, *Design for Convicts*, pp. 35-36; Ford, 'Medical Practice in Early Sydney', p. 48; Cummins, *A History of Medical Administration in NSW*, p. 25; R. Hicks, *Rum, Regulations and Riches: The Evolution of the Australian Health Care System* (Australian Hospital Association, Sydney, 1981), p. 1.

and its workforce), and various delays surrounding labour and construction, Parramatta could boast a solid brick hospital as early as 1796.[201]

Sydney's new hospital was comprised of a two-storey building, located in an airy situation free from any damp and well-fenced with high walls.[202] Each of its eight wards could accommodate twenty-two patients. Commissioner John Thomas Bigge, conducting interviews and inspections as part of his inquiry on behalf of the British government, noted with disapproval that a number of these rooms had been appropriated for other purposes, such as use as a court of law and an artist's studio.[203] Kitchens, privies, washing, and bathing rooms were placed behind the main building, at either end of which were located the staff quarters.

As penal and immigrant settlements expanded through New South Wales, more convict hospitals were established in districts such as Windsor, Liverpool, Newcastle, Bathurst, Goulburn, Port Macquarie, and Norfolk Island.[204] In 1823, Bigge noted that a principle surgeon, six assistant surgeons, a hospital assistant, and a superintendent of lunatics oversaw the provision of healthcare in these institutions, while Van Diemen's Land's hospitals had been equipped with four surgeons.[205]

As in New South Wales, convict hospitals in Van Diemen's Land followed the extension of settlement. Hobart Town's sick were distributed between rented houses and gaols from 1804 until the mid-1820s; this accommodation was evidently "ill situated, low, and possessed no

[201] Nicholas, 'The Care and Feeding' in Nicholas (ed.), *Convict Workers*, p. 192; J. Bigge, *Report of the Commissioner of Inquiry, on the State of Agriculture and Trade in the Colony of New South Wales* (1966 facsimile of original, published by The House of Commons, London, 1823), p. 105.
[202] Bigge, *Report of the Commissioner of Inquiry*, p. 106.
[203] Bigge, *Report of the Commissioner of Inquiry*, p. 106.
[204] Cummins, *A History of Medical Administration in NSW*, p. 25; Bigge, *Report of the Commissioner of Inquiry*, pp. 107-108.
[205] Bigge, *Report of the Commissioner of Inquiry*, p. 104, p. 110.

domestic accommodation."[206] By 1825 Hobart could finally boast a permanent medical institution; housed in a long brick building and "standing upon an eminence in a very healthy airy situation."[207] Six years later, when the total nonindigenous population of Van Diemen's Land was close to twenty-one thousand people (of which approximately seven thousand one hundred were prisoners), Launceston, Port Arthur, and New Norfolk each operated a district hospital, while temporary wards were established in George Town, Campbell Town, Bothwell, Jericho, Richmond, Norfolk Plains, Waterloo Point, Macquarie Harbour, and Maria Island.[208] These hospitals were staffed by ten surgeons, a clerk, and a dispenser.[209] Some institutions were also able to offer outpatients' clinics, and all served as bases from which district surgeons travelled to tend convicts assigned in outlying areas.[210]

Until 1831, public works' convicts were treated in government hospitals at no charge. Masters were required to provide rations for their assigned servants while they underwent hospital treatment, but only for their first fourteen days, and only if they wished to have their servants returned to them upon their recovery.[211] Upon receiving Bigge's recommendation, the new Secretary of State, Sir George Murray, was aghast at the level to which the state subsidised the costs of penal medical care, and instructed Governor Darling to implement reform.[212] From June 1831, masters were required to pay a fee of one shilling per day towards their servants' hospital expenses for a period of thirty days if they wished to be reunited with their charges after

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[206] B. Kelly, *A Background to the History of Nursing in Tasmania* (Mercury-Walch, Hobart, 1977), pp. 14-15; J. Brown, *Poverty is Not a Crime: The Development of Social Services in Tasmania, 1803-1900* (Tasmanian Historical Research Association, Hobart, 1972), p. 4.
[207] W. Crowther, 'Some Aspects of Medical Practice in Van Diemen's Land, 1825-1839', *The Medical Journal of Australia*, 1 (1935), p. 512; H. Widowson, *Present State of Van Diemen's Land , comprising an Account of its Agricultural Capabilities with Observations on the Present State of Farming* (S. Robinson, London, 1829), p. 24.
[208] By 1847, the colony's population had expanded to over seventy thousand (twenty-four thousand five hundred of whom were convicts (Brown, *Poverty is Not a Crime*, p. 17; J. Bischoff, *Sketch of the History of Van Diemen's Land* (John Richardson, London, 1832), pp. 48-49).
[209] Crowther, 'Some Aspects of Medical Practice', p. 512.
[210] In New South Wales, the Sydney General Hospital established an outpatient's clinic (Ford, 'Medical Practice in Early Sydney', p. 48).
[211] W. Nichols, "Malingering' and Convict Protest', *Labour History*, 47 (1984), p. 18.
[212] Nicholas, 'The Care and Feeding', p. 192

their treatment had concluded.[213] To prevent hospitals from becoming "improperly burdened with men who do not require [active medical] treatment," masters were also expected to collect their assigned servants promptly; any master who delayed was at risk of having his servant reassigned.[214] However, these regulations not only discouraged masters from leaving their convicts in hospital for extended periods of time, they also served to dissuade them from seeking professional care for their workers at all.[215]

The free population felt the impact of fees associated with hospital treatment more than those associated with the care of penal patients. Settlers were admitted for 3/- per day, while paupers who "could not bear the expense of their own cure" were funded 2/- per day by the Colonial Government to receive inpatient care.[216] This extension of care by authorities was, however, not entirely benevolent – it was hoped that by demonstrating an ability to support the health of citizens through times of crisis, more immigrants would be encouraged to increase the population of the infant Australian colonies.[217]

These colonies could be lonely and isolating places for the ill. The vast majority of inhabitants were far removed from their families and, like rural British labourers venturing to London seeking employment, they could not rely on traditional community networks for support in times of ill health. As in Britain, those who could afford it were able to select from the wide variety of unorthodox practitioners offering treatments ranging from homeopathy and Turkish baths to patent medicines and powders.[218] The pauperised, however, had fewer options. While those in Britain could turn, however reluctantly, to the workhouse infirmary in times of desperation, the

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[213] In 1843 these regulations were made more severe; masters were liable for one shilling for every day of treatment, regardless of length, if they wanted their convict returned (Nichols, "Malingering', p. 26).
[214] Nichols, "Malingering', p. 21.
[215] Nicholas, 'The Care and Feeding' in Nicholas (ed.), *Convict Workers*, p. 192.
[216] Brown, *Poverty is Not a Crime*, p. 4, p. 18; Cummins, *A History of Medical Administration in NSW*, p. 30.
[217] Brown, *Poverty is Not a Crime*, p. 2.
[218] Martyr, 'No Paradise for Quacks?', pp. 146-147; J. Burnham, 'Psychotic Delusions as a Key to Historical Cultures: Tasmania, 1830-1940', *Journal of Social History*, 13 (1980), p. 374.

determination of early settlers to avoid replicating the degrading 'old Poor Law' system in Australia meant that the destitute sick had no such system to rely upon.[219] As the *Launceston Advertiser* lamented, many sick were "without friends or relatives to succour them in affliction, the casualties of disease and want."[220]

Indoor relief in hospitals and invalid depots was essentially the only form of welfare provided to the poor in Van Diemen's Land. Occasionally rations were issued from the store to the destitute as a form of outdoor relief, but this was considered a short term measure until hospital accommodation could be secured. In 1839, Governor JohnFranklin declared that to prevent abuses of this free provision of rations, no single person would be eligible to receive support direct from the stores – all were to be admitted to an invalid depot such as New Norfolk. A very small number of destitute families were maintained on government stores until 1844, when Lieutenant-Governor John Eardley-Wilmot announced that all charity rations were to cease.[221] These families were almost certainly forced to separate when their source of provisions was discontinued – young children would have been sent to orphanages, while older children and adults were compelled to find work or, in cases of illness or infirmity, to seek shelter and care at invalid depots or hospitals.[222] For many – such as those forced into poverty through disease or disability – hospital may have been an appropriate solution. For others, outdoor relief would have permitted them the means and the dignity to maintain themselves and their families outside government institutions. Some voluntary agencies endeavoured to continue in the government's stead by providing outdoor relief to families, and while the impact upon the families they were able to assist was positive, their limited resources meant that only very few could be helped.[223]

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[219] Cummins, *A History of Medical Administration in NSW*, p. 8, p. 53.
[220] *Launceston Advertiser*, 4 June 1846.
[221] Cummins, *A History of Medical Administration in NSW*, p. 8, p. 53.
[222] Brown, *Poverty is Not a Crime*, p. 20, p. 51, pp. 54-55.
[223] Brown, *Poverty is Not a Crime*, p. 12.

In New South Wales, acknowledging the obvious need for alternative medical support systems, wealthier settlers indulged their philanthropic urges to promote the establishment of charitable institutions. In early April, 1826, the *Sydney Gazette* carried an appeal for funds to establish a public dispensary, eloquently reminding its readers that:

> many of the Free Class of Poor Inhabitants of the City of Sydney, when suffering from Disease, are unable to pay for Medical Advice, and not having any claims on the Government Medical Establishments, are frequently doomed to hunger on the bed of sickness, and perhaps fall victim to its painful effects; it becomes necessary to appeal to the Benevolence of the richer Inhabitants, to endeavour, by their assistance, to avert the Evils to which their poorer neighbours are subject.[224]

With a similarly charitable sentiment, the Benevolent and Friendly Society established its first Australian branch in New South Wales in 1818. The Society was supported by the Colonial Government, who recognised it as an economical means of extending indoor and outdoor support "for the relief of the poor, aged, [and] infirm."[225]

The urban poor of Sydney also had recourse to a sixty-bed asylum, opened in 1821, and its attached infirmary which was equipped to provide medical care for forty patients. Severe overcrowding, demonstrating the dearth of poor relief in the colony, caused admission to frequently be restricted to the totally infirm, while the able-bodied and those suspected of having "blatantly immoral habits" were rejected or summarily discharged.[226] In 1845 the Sydney Dispensary – the first voluntary hospital in Australia – was established with the aim of providing free or cheap medical care to the poor through the charity of private practitioners. However, with their restrictive admission criteria reminiscent of British voluntary hospitals, only emergency and accident cases and those deemed to be afflicted with acute conditions which would respond

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[224] *Sydney Gazette* (12 April 1826) cited in Cummins, *A History of Medical Administration in NSW*, p. 56.
[225] Cummins, *A History of Medical Administration in NSW*, p. 51.
[226] Cummins, *A History of Medical Administration in NSW*, p. 52.

favourably to treatment were eligible for care, meaning that chronic and incurable cases were turned away.[227]

In Van Diemen's Land, Lieutenant-Governor William Sorell envisaged a similar union between the government and charitable movements supporting the health of the poor.[228] Just after Christmas in 1832, Dr William Crowther and Mr Pearson Rowe, with the backing of one hundred and fifty subscribers and two hundred members, founded the Public Dispensary in Hobart Town.[229] Each member was required to contribute 3s per month, one month in advance, to "receive Advice, Attention and Medicine…for himself and his family."[230] Under its subscription scheme, for an annual payment of one guinea, each member was able to recommend three poor 'objects of charity'.[231] Despite promising levels of initial support – in the first six months, "upwards of 200 fit objects of charity have been successfully relieved of disease" – the Dispensary began to suffer from a deficit of willing sponsors with sufficient spare money, and closed its doors after only five years.[232] The lack of success of voluntary agencies was influenced by the sense of "passive indifference" pervading the colony – donors seemed to prefer supplying the needy with *re*active, emergency handouts rather than supporting programmes which *pro*actively assisted the sufferers to improve their lives.[233] In New South Wales, however, a spirit of self-help led voluntary groups to assist the poor to support themselves, rather than rely on passive charity.[234]

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[227] Cummins, *A History of Medical Administration in NSW*, p. 52, p. 55.
[228] Brown, *Poverty is Not a Crime*, p. 2.
[229] Crowther, 'Some Aspects of Medical Practice', 516.
[230] Crowther, 'Some Aspects of Medical Practice', p. 516.
[231] Crowther, 'Some Aspects of Medical Practice', p. 516.
[232] W. Crowther, 'To the Public', *Hobart Town Courier* (7 June 1833), cited in Crowther, 'Some Aspects of Medical Practice', p. 516; Brown, *Poverty is Not a Crime*, pp. 14-15.
[233] Brown, *Poverty is Not a Crime*, p. 11.
[234] B. Earnshaw, "The Lame, the Blind, the Mad, the Malingerers': Sick and Disabled Convicts within the Colonial Community', *Journal of the Royal Australian Historical Society*, 81 (1995), p. 36.

In 1845, the same year in which the Sydney Dispensary was opened, Eardley-Wilmot suggested establishing a workhouse in Van Diemen's Land to compensate for his discontinuance of the limited outdoor relief, but nothing became of the proposal.[235] Workhouses – and, indeed, voluntary hospitals and asylums – were tainted with unpleasant reputations. The care provided in these institutions was characterised by a lack of privacy and stringent moral and behavioural regulations, with foul and raucous language pervading every overcrowded ward. Those who were admitted faced treatment in dangerously unhygienic conditions, with filthy bedding and floors "swarming with vermin."[236] As Earnshaw recognised, in moving from the penal to the charity system, these invalids merely substituted one form of confinement for another.[237]

Within the small communities of Van Diemen's Land and New South Wales, the poor were more individual and more visible than in large urban metropolises such as London – these were real individuals, their lives and hardships made public.[238] In Van Diemen's Land, industrious settlers and emancipists who had proved themselves diligent and hard-working were perceived as worthy of community support when the unpredictable economic and employment markets left them impoverished. This group of 'deserving poor' were distinguished from idle and worthless paupers, many of whom were sent from Britain under schemes of pauper immigration and arrived already dependent on the strained resources of their new communities.[239] Economic and demographic changes driven by the industrial revolution had fostered the growth of new social values and organisation in both Britain and its colonies.[240] The physical workings of industry gave rise to an emphasis on an ordered society with clear divisions between those who were

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[235] Cummins, *A History of Medical Administration in NSW*, p. 8, p. 53.
[236] Gibson case cited in Cummins, *A History of Medical Administration in NSW*, p. 57.
[237] Earnshaw, 'The Lame, the Blind, the Mad, the Malingerers', p. 37.
[238] J. Burnham, 'The Royal Derwent Hospital in Tasmania: Historical Perspectives on the Meaning of Community Psychiatry', *Australian and New Zealand Journal of Psychiatry*, 9 (1975), p. 163; Brown, *Poverty is Not a Crime*, p. 1.
[239] Brown, *Poverty is Not a Crime*, p. 10.
[240] A. Piper, *Beyond the Convict System: The Aged Poor and Institutionalisation in Colonial Tasmania* (Ph.D Thesis [examination copy], Department of History, University of Tasmania, Launceston, 2002), pp. 2-3.

willing and able to participate and those who were not, between "honest industry" and "idle profligacy."[241]

Free settlers and emancipists in the most desperate circumstances could petition the government for admittance to a convict hospital.[242] In a system hauntingly reminiscent of the British 'ticket' scheme, if a destitute sufferer could secure recommendations from a medical practitioner and a clergyman or magistrate, they would be eligible to receive free medicine and accommodation in a colonial institution. Each case was scrupulously investigated to ensure the applicant was totally without means before permission was granted to enter the institution. Even once admitted, free paupers occupied a vulnerable position in the government hospital. The authorities' duty to place the health of convict patients as a first priority rendered the needs of the free poor a distant second. Paupers were frequently dismissed to make room for ill or infirm convict patients. At the New Norfolk Hospital in 1848, severely overcrowded conditions compelled almost one hundred male invalids to be transferred to the Impression Bay Invalid Depot. Most acquiesced to the move, accepting that, as they "had thrown themselves on the charity of the Government, [they] must be content with the conditions annexed to the grant[ing] of such charitable assistance."[243] An obdurate group of twenty-six inmates, however, were less compliant, stating defiantly that they were content at New Norfolk and would not be shipped off under duress to a penal institution such as Impression Bay.[244] After a terse exchange with Lieutenant-Governor William Thomas Denison, half of the fractious invalids backed down and agreed to the move. The remaining thirteen were intractable, but so too was Denison. He summarily ordered their ejection from New Norfolk Hospital, "with as little violence as possible."[245]

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[241] E. Thompson, *The Making of the English Working Classes* (Pantheon Books, New York, 1964), p. 779.
[242] Bowden records a New Norfolk patient who successfully petitioned the governor for admittance as an invalid, unable to care for himself (C. Bowden, *'The Blind, the Paralytic, the Aged and the Destitute': The New Norfolk Colonial Hospital in Van Diemen's Land* (unpublished Bachelor of Arts (Honours) Thesis, Department of History, University of Tasmania, Hobart, 2007), pp. 28-29).
[243] TAHO, *Colonial Secretary's Office: General Correspondence* (24/47/1615).
[244] Brown, *Poverty is Not a Crime*, p. 53.
[245] TAHO, *CSO: General Correspondence (*24/47/1615).

As the transportation system gradually wound down during the late 1830s, and finally ceased altogether in 1841, demand on colonial surgeons and convict hospitals lessened in New South Wales. By 1847 Imperial authorities began dismantling the Medical Service, closing hospitals or placing them under private management. The remaining surgeons and convicts were transferred to Van Diemen's Land.[246] While Rimmer states that during the final years of transportation, convicts continued to experience "a secure and comprehensive system of health care," the impact of this sudden increase of patients upon the already overstretched resources of the southern colony was sadly predictable.[247] Rather than establishing additional institutions to accommodate the new patients, admission criteria were tightened, with many free inmates discharged or turned away from hospital care to allow convict patients to be accommodated.[248] Until the Colonial Government took over the management of medical care in 1855, no new accommodation was provided for Van Diemen's Land's sick or infirm. Fifteen thousand convicts remained under the auspices of the medical department during these last years, with around four thousand cases being seen by colonial surgeons each year.[249] Existing buildings and services were forced through necessity and desperation to cope with amounts of patients dramatically exceeding their intended numbers.

The overstretched government hospitals simply could not cater for the number of sick and infirm in need of treatment. The extremes of the population group – the wealthy and the destitute – found it increasingly difficult to obtain care from government hospitals, due to the burgeoning demands upon their facilities from convicts still under sentence.[250] Voluntary hospitals, dispensaries, and infirmaries were established to cater for more prosperous free settlers who were disinclined to sully themselves by utilising the same medical institutions as convicts.

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[246] Cummins, *A History of Medical Administration in NSW*, pp. 22-23.
[247] W. Rimmer, *Portrait of a Hospital: The Royal Hobart* (Royal Hobart Hospital, Hobart, 1981), p. 71.
[248] Brown, *Poverty is Not a Crime*, p. 33.
[249] Rimmer, *Portrait of a Hospital*, p. 71.
[250] Burnham, 'Psychotic Delusions', p. 374.

Civil authorities were eligible to obtain free medical care at the convict hospitals, but, reflecting British tradition and reinforcing social divides, they preferred to patronise private practitioners.[251] The working classes were also encouraged to avail themselves of treatment from these establishments through participation in insurance schemes similar to those in Britain, where for a small weekly fee the poor could access care if they fell ill.[252] The brevity, however, of many of these plans suggests that insurance schemes were no more popular in the Australian colonies than they were in Britain.[253] While the fee structures were similar in both locations, they were predictably more expensive in Van Diemen's Land; for example, St John's Hospital in Launceston (opened in September 1845) required subscribers to pay between 3d (single person) and 6d (family) per week.[254]

For those with sufficient financial resources, private practitioners were also available in Van Diemen's Land. James Bischoff, a visitor to the colony, was pleasantly surprised at the number of physicians available in Van Diemen's Land, commenting that there were "many very excellent private practitioners in Hobart Town and Launceston, as well as a few in the other parts of the country; so that there is no want of medical attendance, although, in such a climate, it is not much required."[255]

Private hospitals offered cleaner treatment facilities than their government counterparts, although this was more to encourage patients to patronise their establishment than to discourage the spread of disease.[256] Despite the manifest need for their services, most private institutions

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[251] Cummins, *A History of Medical Administration in NSW*, p. 30.
[252] Craig, *Launceston General Hospital*, p. 2.
[253] See, for example, M. Gorsky, J. Mohan and T. Willis, *Mutualism and Health Care: British Hospital Contributory Schemes in the Twentieth Century* (Manchester University Press, Manchester, 2006); M. Gorsky, J. Mohan and M. Powell, 'British Voluntary Hospitals, 1871–1938: The Geography of Provision and Utilization', *Journal of Historical Geography*, 25 (1999).
[254] Craig, *Launceston General Hospital*, p. 2.
[255] Bischoff, *Sketch of the History of Van Diemen's Land*, p. 64.
[256] *Colonial Times* (25 May 1841). The concept of germs spreading disease was not yet accepted, but a cleaner treatment facility remained more appealing than a dirty or run-down hospital.

remained in business for less than two decades; forced to charge high fees to cover their expenses, they often failed to generate sufficient income to survive. For example, St Mary's Hospital in Hobart operated from 1840 to 1860; St John's Hospital in Launceston from 1845 to 1851; St Paul's Hospital in Stanley from 1846 to 1860; and The Hobart Town General Dispensary and Human Society provided out-patient treatment to the poor from 1847 to around 1852. [257]

By the mid-nineteenth century, the population of the Australia colonies had expanded sufficiently to permit community and family networks to stabilise and provide support to the needy. This acted to alleviate part of the pressure on overstretched healthcare resources, particularly in the government sector. Reluctance to expand medical facilities to meet growing need, however, rendered the ill and infirm inhabitants of New South Wales and Van Diemen's Land vulnerable. Ironically, it was the free settlers and the emancipists who were most disadvantaged by this lack of medical provision. Throughout the history of the provision of healthcare in New South Wales and Van Diemen's Land the government's obligation to provide care to the convicts meant that they were guaranteed access to medical treatment. Despite the consistent inadequacy of facilities and shortfalls in accommodation – problems which also plagued British hospitals – colonial prisoners benefited from access to medical practitioners which far surpassed that of the remainder of the colony's population, and also that available to their working-class counterparts in Britain.

[257] Brown, *Poverty is Not a Crime*, pp. 45-47.

Bermuda: Convict Hulks and Naval Medicine

Bermuda had long been considered a highly salubrious climate for British constitutions. Settled early in the seventeenth century as the Somers Isles, Bermuda's sunny and temperate shores lay in the sub-tropical zone and for several months in the middle of the year its climate was considered by many to be "one of the finest in the world."[258] Despite being exposed to the occasional violent hurricane, the group of islands was generally spared the most virulent and destructive illnesses which plagued hotter regions. Its strategic location was recognised upon its settlement, when Bermuda was lauded for its position "in the eye of all trade to the West Indies."[259] Maps from this period often picture the islands in an exaggerated size to emphasise the significance of their role as a "mediating space;" accordingly, Bermuda was acclaimed for possessing the "best intelligence of anywhere in America." [260]

Bermuda was one of many outposts in which the Royal Navy established a medical institution.[261] The navy's rapid expansion during the conflict-ridden eighteenth century demanded an efficient medical system to meet its increasing needs. Until this period, naval healthcare had been makeshift, essentially utilising local public institutions for assistance as and when required. During the Middle Ages, for example, ill seamen had been tended at charitable institutions such as almshouses and religious foundations.[262] These benevolent hospitals, however, were eliminated by Henry VIII during the same reforms which shook all hospitals throughout Britain but secured St Bartholomew's royal protection. Due to the lack of medical treatment available to sailors, the Crown ordered that this London hospital (along with several others in the city) be

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[258] Field Officer, 'Excerpt of *Bermuda: A Colony, a Fortress, and a Prison*', *Littell's Living Age*, 53(1857), p. 187; A. Verrill, *The Bermuda Islands* (self-published, Connecticut, 1902), p. 98.
[259] N. Kennedy, 'William Crashaw's Bridge: Bermuda and the Origins of the English Atlantic, 1609-1624' in N. Rhoden (ed.), *English Atlantics Revisited* (McGill-Queen's University Press, Montreal, 2007), p. 125.
[260] Kennedy, 'William Crashaw's Bridge' in Rhoden (ed.), *English Atlantics Revisited*, p. 121, p. 125.
[261] C. Lloyd, 'Naval Hospitals' in F. Poynter (ed.), *The Evolution of Hospitals in Britain* (Pitman, London, 1964), p. 154.
[262] Lloyd, 'Naval Hospitals' in Poynter (ed.), *The Evolution of Hospitals*, p. 147.

kept accessible to seamen.[263] As no sailors were permanently employed by the navy at this time, there was little reason to establish a permanent hospital to tend to ill seamen, or those injured in the course of their duties.[264]

Until the mid-eighteenth century, the Admiralty hired accommodation and care at private houses for its sick and injured men in a practice known as the contract system. As the size of the navy expanded, however, this practice of purchasing medical attention as necessary became wholly inadequate. To supplement the contract system, buildings were constructed specifically for the accommodation of naval pensioners, beginning with the Royal Hospital at Greenwich.[265] Initially, this 'hospital' was essentially an invalid depot, with little provision for medical care; its charter was instead "for the relief and support of seamen serving on board the ships and vessels belonging to our Navy Royal, who by reason of age, wounds or other disabilities shall be incapable of further service at sea and be unable to maintain themselves."[266]

The first large naval hospitals to be purpose-built were founded during the 1760s at Haslar Point and Plymouth.[267] Around two thousand patients could be accommodated at Haslar, which was renowned as the largest brick building in Europe.[268] Following continual conflict between the medical and naval authorities, both hospitals were placed under the control of a naval governor. Though the governor was advised by a board of physicians and surgeons, relations between the two groups were fraught with tension. In 1865 control was returned to the medical staff.

As these large institutions were founded in Britain, smaller outposts were being constructed in various British colonies, including Bermuda. Until the arrival of the first convict transport in

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263 Lloyd, 'Naval Hospitals' in Poynter (ed.), *The Evolution of Hospitals*, p. 148.
264 Lloyd, 'Naval Hospitals' in Poynter (ed.), *The Evolution of Hospitals*, p. 148.
265 Lloyd, 'Naval Hospitals' in Poynter (ed.), *The Evolution of Hospitals*, p. 149.
266 Cited in Lloyd, 'Naval Hospitals' in Poynter (ed.), *The Evolution of Hospitals*, p. 149.
267 Lloyd, 'Naval Hospitals' in Poynter (ed.), *The Evolution of Hospitals*, p. 150.
268 Lloyd, 'Naval Hospitals' in Poynter (ed.), *The Evolution of Hospitals*, pp. 149-150.

Bermuda in 1824, the only medical needs on these islands which received the attention of the British government were those of the military and navy. Descendants of earlier settlers and travellers tended to each other in supportive systems of community and kinship; despite Bermuda's status as a British colony, authorities evidently did not yet feel obligated to provide a public hospital.[269] The armed forces, however, were far distant from their family support networks in Britain. Instead, rickety temporary establishments on shore, supplemented by hospital hulks and sick bays aboard ships, served to accommodate ill and injured military personnel.

Until the early nineteenth century, Bermuda's main medical institution was a small shore-based hospital contrived in part of a naval building on Spanish Point, close to Clarence Hill. As the War of 1812 between the United States of America and Britain became more brutal, however, these facilities were expanded to cater for the growing number of maimed soldiers who could not be treated aboard ship.[270] By late 1814, as the war began to weaken into a weary stalemate, the lease expired on this hospital and its doors were parsimoniously closed.[271] The dilapidated temporary buildings, closed when the naval facilities were extended, were reopened as hospital wards; any naval or military patients who could not be accommodated here were retained in the overcrowded sick bays of naval vessels.

Bermuda's first permanent hospital, established to tend the needs of naval and military personnel, was established in 1818 in the Dockyards. During the hospital's first six years, its eighty beds had been exclusively reserved for the use of soldiers, sailors, and other officials. When the first convict transport arrived in 1824 the two-storey building was also opened up to

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[269] C. Hollis-Hallett, *Forty Years of Convict Labour: Bermuda, 1823-1863* (Juniperhill Press, Bermuda, 1999), p. 49.
[270] C. Lloyd and J. Coulter, *Medicine and the Navy, 1200-1900* (vol. 4, E. & S. Livingstone Ltd, Edinburgh, 1963), p. 254.
[271] C. Bartlett and G. Smith, 'A "Species of Milito-Nautico-Guerilla-Plundering Warfare"' in J. Flavell and S. Conway (eds), *Britain and America go to War: The Impact of War and Warfare in Anglo-America, 1754-1815* (University of Florida Press, Gainesville, 2004), pp. 178-179.

prisoners.[272] Although any convicts admitted to the institution were under the direct authority of the Royal Navy, many naval authorities resented the presence of prisoners, who were sometimes received in such great numbers as to preclude the admission of military and naval officers.[273] That prisoners were treated in the same institution as the armed forces grated on the finer sensibilities of many, with accusations that care in such a hospital lacked the "proper feeling of degradation" that should accompany every aspect of the transported felon's life.[274]

This overlapping of the healthcare of convicts and military personnel characterised the provision of medical treatment among the small British population in Bermuda. Although convicts were managed under the auspices of the Royal Navy until 1848, when the responsibility was shifted to the Colonial Office, tensions between these authorities ran high throughout this period. Despite this conflict, convict patients accounted for fifteen percent of the hospital's admissions. In total, the institution tended to some twenty-five thousand patients between 1818 and 1886, comprised of the following groups:

	Number of Cases	Percentage of Total
Convicts[275]	3839	15%
Marines	2575	10%
Seamen	5941	24%
Soldiers	12902	51%
Total	**25257**	**100%**

Table 2: Admissions to Royal Naval Hospital Bermuda, 1818-1886[276]

[272] Hollis-Hallett, *Forty Years of Convict Labour*, p. 58.
[273] Hollis-Hallett, *Forty Years of Convict Labour*, pp. 53-54.
[274] Hollis-Hallett, *Forty Years of Convict Labour*, p. 58.
[275] Convicts were only transported to Bermuda between 1824 and 1863.
[276] Figures from Lloyd and Coulter, *Medicine and the Navy*, p. 255.

The expense of treating convicts in an institution belonging to a separate department was colossal; great enough, in fact, to warrant the building of a hospital exclusively for the use of prisoners.[277] Plans were drawn up for an institution to be built on Watford Island; however, the sketches were deemed "very far superior to the requirements of the service" and promptly rejected.[278] Although a second less pretentious set of plans were drafted, the prudent British government, aware of the finite lifespan of the convict establishment, rejected the expense and labour inherent in the construction of a Bermudian colonial hospital.

Instead, in 1848 the *Tenedos* was commissioned to be refitted as a hospital hulk for convict patients. To the great relief of the military and naval personnel, this allowed the transferral of prisoners from the Royal Naval Hospital and the removal of sick bays from most of the main hulks.[279] The *Dromedary* hulk retained its sick bay, allowing accident and emergency cases to be treated close to the convicts' quarters before being transferred to the *Tenedos*. Non-urgent cases were immediately transferred to the *Tenedos* or the hospital, instead of first being admitted to the sick bays aboard hulks. The hospital ship provided convalescing prisoners with relative calm and quiet to regain their health (peace not being readily available on board the main convict hulks, with each vessel being home to several hundred men) and freed much needed space in the shore-based hospital for the acutely ill. The *Tenedos* also provided a restricted area for infectious patients during epidemics in the relative tranquillity of the waters off Boaz Island.

After improvements to ventilation, the *Tenedos* was able to accommodate two hundred and fifty-three patients, each of whom each enjoyed a mere two hundred and fifty cubic feet of space.[280] Authorities wrote glowing reports about the resourceful management and economic efficiency

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[277] Hollis-Hallett, *Forty Years of Convict Labour*, p. 58.
[278] Hollis-Hallett, *Forty Years of Convict Labour*, p 60.
[279] Hollis-Hallett, *Forty Years of Convict Labour*, p. 58.
[280] W. Smart, 'On the Yellow Fever Epidemics in Bermuda', *Transactions of the Epidemiological Society of London*, 2 (1867), p. 57.

with which the *Tenedos* was run, and commended the kindly attention bestowed upon patients by its staff.[281] John Mitchel, author of *Jail Journal* and a patient aboard the *Tenedos*, corroborated these sentiments. Although it must be said that Mitchel's account of his time in Bermuda can hardly be taken as typical of the convict experiences, his report of the *Tenedos* was favourable, from his description of its moorings "in a most beautiful bay, or basin, formed by well-wooded islands, and far out of sight of the prison hulks" to his portrayal of the "kind and attentive" Dr Hall, who "seems determined to give [Mitchel] as much health" as possible during his admission.[282]

Just five years after it was commissioned, however, the *Tenedos* became dilapidated; the "deterioration of her wooden walls, as well as accumulation of debris in her lower holds" had polluted the atmosphere and cultivated disease.[283] Just as hulks moored along the Thames had been criticised as being "insanitary, damp, ill-ventilated and full of vermin," so too the *Tenedos* became rapidly unfit for habitation, particularly by the sick.[284] Instead of nursing convict patients back to health, it was charged with prolonging their illness. Despite having four surgeons "solely employed to attend their bodily welfare," the mortality rates of penal patients had risen alarmingly during these years.[285] Mortality between 1848 and 1856 was roughly equal to that recorded during the other thirty years of the convict establishment combined (it should, however, also be noted that these were years particularly heavily afflicted by yellow fever).[286] The rising number of fatalities was largely due to the use of the hospital ship in an epidemic of fever in 1853. The *Tenedos* acted to incubate the disease, spreading it to patients and staff via "an

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[281] Hollis-Hallett, *Forty Years of Convict Labour*, p 59.
[282] J. Mitchel, *Jail Journal* (The Citizen, New York, 1854), p. 65, 147.
[283] Smart, 'On the Yellow Fever Epidemics in Bermuda', p. 56.
[284] A. Coats, 'From 'Floating Tombs' to Foundations: Contributions of Convicts to Naval Dockyards and Ordnance Sites' in N. Tracy and M. Robson (eds.), *The Age of Sail: The International Annual of the Historic Sailing Ship* (Conway Maritime Press, London, 2003), p. 32.
[285] Hollis-Hallett, 'Bermuda's Convict Hulks', p. 98.
[286] E. Mitchell, 'The Convict Establishment', *The Leisure Hour*, reprinted in *Bermuda Journal of Archaeology and Maritime History*, 9 (1997), p. 123.

infected atmosphere, produced by emanations from the excreta of so many sick crowded together amidst the most unsanitary conditions."[287]

By the mid-1820s, when Bermuda was first opened to receive transported felons, hulks had already acquired a dismal reputation. Initially introduced to the Thames in the late 1770s when the War of Independence closed American colonies to British prisoners, these floating prisons had been considered to be merely temporary accommodation, a stopgap measure in a desperate situation.[288] For little more than the cost of fitting up the vessels, these hulks were able to provide accommodation and employment in dockyards such as Woolwich, Portsmouth, Chatham, Sheerness, and Plymouth for the felons overflowing from Britain's overcrowded gaols.[289] More importantly, they also eliminated convicts from society's midst and, it was hoped, made available a space in which punishment and reformation could be undertaken.[290]

These hulks operated under the control of contractors until 1802, when responsibility was transferred to the government. As contractors continued to supply food and clothing, provisions remained of poor quality. Immediate increases in rations and improvements in conditions aboard ship, however, did result directly from the change to government authority.[291] Space for a chapel was found on each hulk, prisoners were separated according to age, and each convict was allocated his own hammock.[292] Despite these improvements, the hulks remained overcrowded sources of discontent. As author and former convict John Boyle O'Reilly wrote, "Only those who have stood within the bars, and heard the din of devils and the appalling

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[287] Smart, 'On the Yellow Fever Epidemics in Bermuda', pp. 55-56.
[288] M. Tomlinson, 'Penal Servitude 1846-1865: A System in Evolution' in V. Bailey (ed.), *Policing and Punishment in Nineteenth Century Britain (part 2)*, (Croom Helm, London, 1981), p. 127.
[289] McDonald and Shlomowitz, 'Mortality on Convict Voyages', p. 303; Coats, 'From 'Floating Tombs' to Foundations' in Tracy and Robson (eds.), *The Age of Sail*, p. 29, p. 34; F. Lewis, 'The Cost of Convict Transportation from Britain to Australia, 1796-1810', *Economic History Review*, 4 (1988), p. 507.
[290] Tomlinson, 'Penal Servitude' in Bailey (ed.), *Policing and Punishment*, p. 127.
[291] Coats, 'From 'Floating Tombs" in Tracy and Robson (eds.), *The Age of Sail*, p. 30.
[292] Coats, 'From 'Floating Tombs" in Tracy and Robson (eds.), *The Age of Sail*, pp. 30-31.

sounds of despair, blended in a diapason that made every hatch-mouth a vent of hell, can imagine the horrors of the hold of a convict ship."[293]

Seven hulks were moored at various locations around Bermuda between 1824 and 1863 – *Antelope* (arrived in 1824), *Dromedary* (1826), *Coromandel* (1827), *Weymouth* (1829), *Thames* (1844), *Tenedos* (1848), and *Medway* (1848). Each vessel accommodated a daily average of one thousand men, although this number could rise as high as one thousand four hundred.[294] By this period of the nineteenth century, when any hopeful humanitarian notions regarding the potential positive effects of housing so many men in such miserable conditions had long ago faded away, authorities were acutely aware of mounting criticism of the floating prisons. Indeed, as early as 1798 a Parliamentary Finance Committee found that there was "little hope" that the men who served their sentences aboard hulks, "exposed to the contagion of such immoral example…will ever again become useful members of society, but on the contrary it is to be feared that when they shall be again discharged they will come more expert in fraud and more hardened to guilt."[295] In 1860, the Colonial Under Secretary, the Earl of Carnarvon, condemned the prison ships for releasing men back into society "infinitely more depraved than before."[296]

Among the most serious of the objections to the prison hulks were the difficulties of supervising and disciplining the prisoners after they were secured beneath the decks at night. As felons (albeit ailing), under the responsibility of the British government, patients aboard the hospital-ship were required to be kept under watch and often in chains, in case their idleness prompted them to escape.[297] In such a cramped and restrictive environment, however, the hulks could

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[293] Cited in C. Sullivan, 'Reconsidering the Convict Ships', *New Hibernian Review*, 12 (2008), p. 101.
[294] W. Branch-Johnson, *The English Prison Hulks* (Christopher Johnson, London, 1957), p. 165; C. Hollis-Hallett, 'Bermuda's Convict Hulks', *Bermuda Journal of Archaeology and Maritime History*, 2 (1990), p. 88.
[295] Coats, 'From 'Floating Tombs" in Tracy and Robson (eds.), *The Age of Sail*, p. 30.
[296] S. McConville, *English Local Prisons, 1860-1900: Next Only to Death* (Routledge, London, 1995), p. 50.
[297] Hollis-Hallett, 'Bermuda's Convict Hulks', p. 98.

ignite with frightening speed into a mutinous "hot-bed of riot and insubordination."[298] Here, neither reformation nor restraint could be achieved. As Lieutenant Colonel Jebb, Surveyor General of Prisons in England, lamented,

> Each succeeding years' experience of the hulks, as places of confinement for convicts under a probationary system of moral and industrial training, only serves to strengthen the conviction as to their unfitness for properly carrying out these objects. Whatever may be done to enforce discipline outwardly, and to promote good order and regularity by fear of punishment and hopes of reward, there is an under current of depravity beyond the reach of human power to control, resulting from the crowded association of criminals of every degree of guilt in places and numbers which render sufficiently close supervision simply a matter of impossibility. A reduction of one half the number of prisoners in each hulk would not afford the same facility of supervision as exists in an associated room in any of the Government prisons on shore, and though a diminution of numbers among the prisoners to this extent would, to a certain degree, remove some of the objections to the hulks as places of confinement, their limited accommodation would then render them most expensive prisons, and ineffective on that ground for the object of carrying on public works.[299]

This "unfavourable contrast [between] a ship, with its contracted space, and numerous inconveniences, [and] a light and commodious prison on terra firma" was repeatedly emphasised both by those accommodated aboard the hulks and those who visited or observed their deplorable conditions.[300] The aging and often dilapidated state of many convict hulks compromised the health and security of the prisoners, and, as Jebb noted, foiled any attempt to improve the moral and vocational capacities of its inhabitants. Hulks were prone to rapid

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[298] Tomlinson, 'Penal Servitude' in Bailey (ed.), *Policing and Punishment*, p. 128.
[299] J. Jebb and I. Whitty, 'Report of the Directors of Convict Prisons on the Discipline and Management of the Hulk Establishment' in *Reports from Commissioners: Convict Prisoners, Military Prisons* (vol. 15, George E. Eyre and William Spottiswoode, London, 1854), pp. 256-257.
[300] J. Walpole, 'Report of the Chaplain of the *Stirling Castle* Hulk at Portsmouth' in *Reports from Commissioners: Convict Prisoners, Military Prisons* (vol. 15, George E. Eyre and William Spottiswoode, London, 1854), p. 286.

disintegration, and once rot had set in it was difficult and costly to repair.[301] Many also leaked, adding foetid and stagnant water to the stench of unwashed prisoners sleeping and eating together in a gloomy and overcrowded hold.

The basic need for fresh, "open air to create a healthy tone of body and mind" went noticeably neglected aboard the hulks, with particularly detrimental effects upon "the condition of invalids, always on ship board, considered unfit for labour, peevish and rusting with the unvarying monotony of their life."[302] In such an atmosphere, it was hardly surprising that many surgeons and chaplains commented upon the "universal depression of spirits" which plagued convicts accommodated aboard hulks.[303] The 'pining away' and death of a number of these prisoners was attributed to this pervasive lethargy of mind and body, which afflicted those aboard floating prisons at a much greater rate than those imprisoned on shore.[304]

The colonial government was particularly sensitive to criticism of the convict hulks regarding their negative influence on the physical health of prisoners. Even Bermuda's Governor, Charles Elliott, sympathised with the "distressing" plight of the convicts, "shut up in the wards of a hulk during the calm nights of the long and intensly [sic] hot summers of this climate."[305] Below decks in the cramped sleeping quarters, lack of ventilation and communal living bred and spread disease among the men. One medical officer commented that cases of phthisis worsened rapidly aboard hulks, along with outbreaks of catarrh and bronchitis.[306] Fevers were rampant, and were understood to be caused by the unwholesome miasma rising from the stagnant water and muddy moorings in which the hulks languished.

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301 Tomlinson, 'Penal Servitude' in Bailey (ed.), *Policing and Punishment*, p. 128.
302 Walpole, 'Report of the Chaplain' in *Reports from Commissioners*, p. 286
303 Coats, 'From 'Floating Tombs" in Tracy and Robson (eds.), *The Age of Sail*, p. 30.
304 Coats, 'From 'Floating Tombs" in Tracy and Robson (eds.), *The Age of Sail*, p. 30.
305 C. Elliott, cited in Hollis-Hallett, 'Bermuda's Convict Hulks', p. 89.
306 J. Burns, 'Report of the Medical Officer of the Hulks in Woolwich' in *Reports from Commissioners: Convict Prisoners, Military Prisons*, p. 279.

Forty years after the introduction of the prison hulks, these "intermediate establishments" formed the mainstay of penal accommodation in Bermuda.[307] The standard arrangement of convict barracks and prisons could not be deployed in Bermuda; due to its unique landscape peppered with tiny islands, the plans and guidelines which regulated other colonies were not appropriate here. Despite their notorious reputations, these floating prisons represented one of the very few economical and practical options available to authorities seeking to accommodate hundreds of men in such an unhospitable and unfamiliar environment. Each hulk was equipped with a sick bay supervised by a Royal Navy medical officer, who in turn acted under the direction of a medical superintendent and his assistant.[308] The organisation of the healthcare of all Bermudian convicts was dependant on the knowledge and performance of this small group of men. Bermuda's isolation meant that, like the Australian colonies, self-sufficiency and self-regulation was necessary, at least between despatches from the colonial office. This geographically-enforced independence, however, fostered accusations that Bermuda was accorded unwarranted privileges, from unmerited promotions and excessive perquisites for Royal Naval officers to overly-generous requisition orders.[309]

Surgeons were aware, however, that amidst the inherently unwholesome environment on board the convict hulks, some conditions were difficult to nurse successfully. If treatment aboard the hulks was impossible, impractical, or promised to be of lengthy duration, the prisoner would be transferred with a letter to the Royal Naval Hospital.[310]

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[307] *Illustrated London News*, 8 (21 February 1846), cited in Coats, 'From 'Floating Tombs" in Tracy and Robson (eds.), *The Age of Sail*, p. 31.
[308] Hollis-Hallett, *Forty Years of Convict Labour*, p. 49.
[309] Hollis-Hallett, 'Bermuda's Convict Hulks', p. 88.
[310] It is these letters which form the basis of analysis of this group of patients in this research.

The *Tenedos* was abandoned in 1856, with the patients moved into the Boaz Island prison which had been purpose-built two years earlier.[311] At the end of March 1863, the convict establishment on Bermuda was officially closed down, with all serving prisoners transferred to Western Australia.[312] The Royal Naval Hospital continued to operate, and accommodated ill and wounded soldiers and sailors well into the twentieth century.

An Evolving Structure

The colonies were regarded by some as 'blank slates' upon which the ideal system of medical provision could be established.[313] While the reality was less than perfect, in both Bermuda and Van Diemen's Land it was the penal patients who were guaranteed access to the most highly-trained medical practitioners and the best-established hospitals available in their respective colonies.[314] Although the standard of these facilities often fell far short of ideal, this cannot detract from the simple underlying reality: while the wealthy resorted to self-treatment in the absence of esteemed physicians to consult, and the destitute went untended for sheer lack of any other option, convicts remained secure in the knowledge that the British government – from necessity and obligation – had to make provision for their health.[315]

The exceptional treatment received by prisoners was not a result of humanitarian or philanthropic motives.[316] Rather, convicts were viewed as valuable 'productive assets'.[317] Each man who could not work due to illness or disability was a drain on the colonial and imperial

311 Hollis-Hallett, 'Bermuda's Convict Hulks', p. 90, p. 98.
312 Mitchell, 'The Convict Establishment', p. 121.
313 S. Piddock, 'Convicts and the Free: Nineteenth-Century Lunatic Asylums in South Australia and Tasmania (1830-1883), *Australasian Historical Archaeology*, 19 (2001), p. 84.
314 Nicholas, 'The Care and Feeding' in Nicholas (ed.), *Convict Workers*, pp. 192-194.
315 Bowden, *'The Blind, the Paralytic'*, see particularly Chapter three.
316 Nicholas, 'The Care and Feeding' in Nicholas (ed.), *Convict Workers*, p. 195.
317 Nicholas, 'The Care and Feeding' in Nicholas (ed.), *Convict Workers*, p. 195.

purse. Their value as labourers transformed them from the refuse of Britain, worthless common criminals, into significant economic assets worth caring for; as Nicholas identifies, a convict was of little use if he was starved, mistreated, or denied medical care.[318] Without the labour provided by healthy prisoners, settlement in these colonies (particularly Australia) was unviable – the Bermudan dockyards would remain incomplete, leaving them exposed to attack, while Van Diemen's Land would require another workforce to construct roads and public buildings.[319]

While great progress had been made in many aspects of British medicine by the mid-nineteenth century, in earlier decades hospitals remained an emblem of fear for much of the British public. To confront the frightening reputations of these institutions by seeking admission was both a desperate and courageous move.[320] In urban areas, those who turned to public institutions for medical care tended to fall into distinct categories - the solitary, with little family or economic support, servants admitted by masters, and migrants and travellers, or those who travelled specifically to seek care.[321] In rural districts it was often those already dependant on Poor Law relief who found themselves without solid kinship networks to support them through sickness.[322]

Convicts, however, had access to superior clothing, more nutritious food, and better accommodation than many of their free counterparts who remained in their homelands.[323] Almost all were able to access medical care that in Britain would have been far beyond their financial means. Sickness could tip a working-class family from relative sufficiency into

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[318] J. Bradley and H. Maxwell-Stewart, 'Embodied Explorations: Investigating Convict Tattoos and the Transportation System' in I. Duffield and J. Bradley (eds.), *Representing Convicts: New Perspectives on Convict Forced Labour Migration* (Leicester University Press, Leicester, 1997), p. 183; Nicholas, 'The Care and Feeding' in Nicholas (ed.), *Convict Workers*, p. 195.
[319] D. Meredith and D. Oxley, 'Contracting Convicts: The Convict Labour Market in Van Diemen's Land 1840-1857', *Australian Economic History Review*, 43 (2005), p. 45.
[320] Scull, *The Most Solitary of Afflictions*, p. 134.
[321] R. Porter, 'The Patient's View: Doing Medical History from Below', *Theory and Society*, 14 (1985), p. 175.
[322] Fissell, 'The 'Sick and Drooping Poor'', p. 36; Taylor, *Hospital and Asylum Architecture in England*, pp. 38-39.
[323] Nicholas, 'The Care and Feeding' in Nicholas (ed.), *Convict Workers*, pp. 195-196.

destitution in a matter of days.[324] As Jebb maintained, convicts "were better fed, clothed, and lodged, than the classes from which they generally come; even in the degraded state in which they have worked in the dockyards, their lot has been envied by many an honest labourer."[325]

[324] In some families, both parents were required to be wage earners to bring in sufficient income for survival. Children were often administered opiates to keep them placid whilst both parents worked outside the home; as late as 1873, up to twenty percent of infant deaths were related to marasmus and inadvertent poisoning. Another major contributor to child and infant mortality rates were accidents stemming from inadequate parental supervision of young children who were left alone or in the care of older children while their parents worked (S. Cherry, 'The Hospitals and Population Growth (Part 1)', p. 70; see also R. Kippen, 'Diarrhoea, Marasmus, Convulsions: Infant Mortality in Nineteenth-Century Tasmania', *Australian Population Association Eleventh Biennial Conference*, University of New South Wales (2 – 4 October, 2004) for detail on infant deaths in Van Diemen's Land).
[325] Cited in Hollis-Hallett, 'Bermuda's Convict Hulks', p. 99; see also Mitchell, 'The Convict Establishment', p. 122.

Chapter Three

Built Environments

Twenty-one -year-old William Kerr was not a habitually intemperate man. Married and working as a stationer, he was usually careful with his small wage and did not frequently spend it on drink.[326] One night in late February, 1846, however, Kerr broke from his usual routine; by the time he arrived home he appeared to be thoroughly inebriated. That night he lay awake as his body was racked by shivering, his limbs aching and his skin glistening with perspiration.

After six days enduring a throbbing headache and six nights lying sleepless in his bed, Kerr was admitted to St Bartholomew's Hospital in London. Dr Ormerod diagnosed inflammation of the brain, probably brought on by alcoholic excesses. He applied leeches and cold lotion to Kerr's head, and administered opiates to ease the pain and mercury to purge his system.[327] During his first night in hospital, Kerr lay sleepless, tormented by the pain searing across the back of his head.

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[326] St Bartholomew's Hospital Archives and Museum, St Bartholomew's Hospital, *Medical and Surgical Case Notes of Edward Latham Ormerod, Diseases of the Central Nervous System, Kidneys, Abdominal and Infectious Skin Diseases: William Kerr* (MR 16/6/11).

[327] SBHAM, SBH, *Medical and Surgical Case Notes: William Kerr* (MR 16/6/11).

Seven restless days later, Kerr confided to Ormerod that it was the lights and noises of the hospital ward which were aggravating the pain in his head, preventing him from sleeping at night.[328] The surgeon repeated the cupping, which again brought temporary respite from the throbbing, but Kerr continued to insist that the constant lights and noises echoing around the room intensified his discomfort. Perplexed by his patient's complaints, Ormerod repeatedly examined Kerr's skin "in vain for spots or vesicles," but was unable to find any blemishes or rashes. Eventually, Ormerod instructed the nurses to move Kerr's bed away from the lights and into a quieter part of the ward.[329] Kerr responded with immediate and effusive gratitude, reporting that he felt "much relief from having changed his bed away from the light."[330]

In the first half of the nineteenth century, hospitals were often designed and constructed with economy in mind, rather than the potential of architecture to contribute to healing and recovery. While the use of space during the eighteenth century and earlier often remained ambiguous, this flexibility was reassessed as decades wore on and hospital space was redefined and medicalised. Accordingly, the built environments of hospitals incorporated much more than a straightforward demarcation of space on a plan.[331] Kerr's case demonstrates how the physical surroundings in which the sick were treated – whether they be a vast, open ward in St Bartholomew's or an over-heated, cramped sick bay aboard a Bermudian convict hulk – were able to influence the duration of illness, the degree of benefit a patient received from treatment, and the speed of recovery (in addition to their comfort during these processes). This chapter will trace the development of the curative environment within New Norfolk Hospital, St Bartholomew's Hospital and the Royal Naval Hospital in Bermuda. By revealing the conditions and construction of the spaces in which

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328 SBHAM, SBH, *Medical and Surgical Case Notes: William Kerr* (MR 16/6/11a).
329 SBHAM, SBH, *Medical and Surgical Case Notes: William Kerr* (MR 16/6/12).
330 SBHAM, SBH, *Medical and Surgical Case Notes: William Kerr* (MR 16/6/12).
331 S. Piddock, "An Irregular and Inconvinient Pile of Buildings': The Destitute Asylum of Adelaide, South Australia and the English Workhouse', *International Journal of Historical Archaeology*, 5 (2001), p. 93.

patients spent the often long days of their recovery, the impact of their accommodation upon their treatment can be explored and contrasted.

Development of a Healing Environment

During the thirteenth and fourteenth centuries, hospitals were generally small, consisting of one or two open rooms able to accommodate around fifteen patients, and were not differentiated in their design from ordinary household dwellings.[332] In the fifteenth and sixteenth centuries, as the space set aside for healing began to increase, architects began to consider how design could be used more effectively, although it was not until the seventeenth and eighteenth centuries that the concept of architecture was deemed able to actively contribute to a patient's recovery from disease.[333]

Hospitals, as spaces designated solely for the treatment of the sick, were unknown in the classical world.[334] In Greece, the ill may have been tended at the home of a practitioner, or at the shrine of the god of prosperity and health, Asclepius.[335] The sick were carried to these temples and often remained there, sleeping in open corridors or simply on the ground as they prayed for healing.[336] Some temples incorporated large complexes of rooms, baths, and saunas designed to accommodate the ill or dying, particularly during times of festivals and other special events, when crowds descended upon the shrines to seek the intervention of deities in cases of illness or

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[332] C. Stevenson, *Medicine and Magnificence: British Hospital and Asylum Architecture* (Yale University Press, New Haven, 2000), p. 3; K. Park, 'Medicine and Society in Medieval Europe, 500-1500' in A. Wear (ed.) *Medicine in Society: Historical Essays* (University of Cambridge, Cambridge, 1992), p. 84.
[333] Stevenson, *Medicine and Magnificence*, p. 4.
[334] N. Kellman, 'History of Healthcare Environments' in S. Marberry (ed.), *Innovations in Healthcare Design* (John Wiley & Son, United States of America, 1995), p. 42.
[335] G. Risse, *Mending Bodies, Saving Souls: A History of Hospitals* (Oxford University Press, Oxford, 1999), pp. 20-24.
[336] Risse, *Mending Bodies*, p. 23.

disablement.[337] During Roman times, educated medical practitioners were prominent members of society, although they generally continued to practice from domestic residences – both their own and those of their patients – rather than from a separate building.[338] Occasionally, facilities were commandeered to be utilised specifically as spaces for healing; houses may have been remodelled, temporary structures erected to act as small hospitals, or a few rooms added beside churches to accommodate the sick poor.[339]

Connections between religion and healing continued as the Catholic church exerted a unifying (if controversial) influence which remained strong throughout the Middle Ages. Religious orders established numerous small hospitals to provide physical support, such as clothing and food, alongside spiritual guidance and health care to the solitary, the sick, and the displaced.[340] To further support the spiritual health of their inmates, a chapel was often built into the eastern end of these hospitals to allow the observation of mass from bed.[341] These hospitals were generally small, rectangular-shaped halls, capable of accommodating up to twenty or thirty patients, although a few were much larger in size, and able to accommodation one or two hundred inmates.[342]

As parish networks expanded and were strengthened by increasing levels of exchange and economic development, the central role of the family in providing medical care accordingly decreased.[343] Fuelled by the charity of the wealthy, who saw the bestowing of donations and hospitality as essential to their spiritual salvation, the "institutionalisation of philanthropy" was

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337 Risse, *Mending Bodies*, p. 23.
338 Risse, *Mending Bodies*, p. 76.
339 Risse, *Mending Bodies*, p. 83.
340 Risse, *Mending Bodies*, p. 74.
341 M. Carlin, 'Medieval English Hospitals' in L. Granshaw and R. Porter (eds.), *Hospitals in History* (Routledge, London, 1989), p. 28.
342 Carlin, 'Medieval English Hospitals' in Granshaw and Porter (eds.), *Hospitals in History*, pp. 26-28.
343 Risse, *Mending Bodies*, p. 74.

secured as numerous small hospitals were established throughout Europe.[344] Upper class families were happy to barter charitable financial support for the certainty of superior social connections in this life and the possibility of munificent considerations after death.[345] While institutions established in rural areas often closed after brief periods, some of those founded in areas of larger settlements expanded alongside the growth of population and trade.[346]

Despite the gradual increase in numbers of hospitals during the Renaissance, these institutions remained peripheral to society rather than the central community facilities they became in later centuries.[347] As Granshaw states, hospitals "were few in number, employed few people, used few resources…and, above all, they treated a very restricted group of patients for a very restricted range of complaints."[348] Influenced, however, by the serious epidemics of plague and other diseases which swept through the rapidly expanding populations around Europe, the first coordinated attempts at public health measures were tentatively implemented. The expansion of trade networks between the fourteenth to sixteenth centuries, coupled with the concentration of wealth in more populated areas, meant that larger cities provided the ideal arenas in which innovative medical, economic, social, religious, and political ideas could be exercised.[349]
As Rubin observes, these aspects of urbanisation resulted in the wealthy and privileged living in close contact with the indigent and destitute.[350] This "inter-mingling" simultaneously resulted in the exposure of the "greater need" of the poor and the "greater awareness" of this desperation

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344 M. Rubin, 'Development and Change in English Hospitals, 1100-1500' in Granshaw and Porter (eds.), *Hospitals in History*, p. 43.
345 S. Cavallo, 'Charity, Power and Patronage in Eighteenth Century Italian Hospitals: The Case of Turin' in Granshaw and Porter (eds.), *Hospitals in History*, p. 108.
346 R. Porter, 'Hospitals and Surgery' in R. Porter (ed.), *The Cambridge Illustrated History of Medicine* (Cambridge University Press, Cambridge, 1996), p. 209.
347 J. Henderson, *The Renaissance Hospital: Healing the Body and Healing the Soul* (Yale University Press, Connecticut, 2006), p. 151.
348 L. Granshaw, 'The Rise of the Modern Hospital in Britain' in Wear (ed.) *Medicine in Society*, p. 197.
349 W. Jones, 'Acute Care Design: Emerging Trends' in Marberry (ed.), *Innovations in Healthcare Design*, p. 13; K. Park, 'Healing the Poor: Hospitals and Medical Assistance in Renaissance Florence' in J. Barry and C. Jones (eds.), *Medicine and Charity Before the Welfare State* (Routledge, London, 1991), p. 27; Rubin, 'Development and Change in English Hospitals' in Granshaw and Porter (eds.), *Hospitals in History*, p. 42.
350 Rubin, 'Development and Change in English Hospitals' in Granshaw and Porter (eds.), *Hospitals in History*, p. 42.

by the elite.[351] It was recognised that while practitioners traditionally treated patients (particularly wealthy ones) in their homes, it was economically more efficient to treat them collectively, in an environment constructed specifically for tending the sick.[352] A bishop, preaching in Winchester to the governors of the County Hospital, acknowledged that the expense of relieving "a great number of sick persons who shall attend for that purpose in the *same* place, bears no proportion to the charge of assisting them at their separate homes."[353] The concept that such communal facilities for tending to the ill may allow more rapid and effective treatment of patients was a later, lesser, consideration.

With both upper and lower stratums of society demanding larger and better institutions to treat the growing numbers of sick, and existing institutions continually unable to meet the demand, experimental hospital designs were developed. The radial and cruciform layouts were among the most prominent of these architectural innovations, consisting of four (in the case of cruciform) or more (in the case of radial) wards opening out from a central space which could be used to house an infirmary or, if the hospital was associated with a religious order, an altar.[354] Originally implemented in Italy, but soon becoming popular in other countries, this design provided almost twice as much space for accommodating patients as traditional layouts, but lessened the amount of land required.[355] Smaller hospitals, too, were influenced by the pressure to modernise, with many providing separate rooms for infectious patients, emergency cases, or those suffering from psychiatric disorders.[356] Hospitals were also constructed in 'T', 'L' and 'H' configurations, all of

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[351] Rubin, 'Development and Change in English Hospitals' in Granshaw and Porter (eds.), *Hospitals in History*, p. 42.
[352] D. Sloane, 'Scientific Paragon to Hospital Mall: The Evolving Design of the Hospital, 1885-1994', *Journal of Architectural Education*, 48 (1994), p. 82.
[353] B. Duncum, 'The Development of Hospital Design and Planning' in F. Poynter (ed.), *The Evolution of Hospitals in Britain* (Pitman, London, 1964), p. 208 (emphasis original).
[354] The cruciform design was less common in Britain (T. Markus, *Buildings and Power: Freedom and Control in the Origin of Modern Building Types* (Routledge, London, 2004), p. 107; S. Sider, *Handbook to Life in Renaissance Europe* (Oxford University Press, Oxford, 2005), pp. 114-115; N. Black, *Walking London's Medical History* (Royal Society of Medicine, London, 2006), pp. 30-31).
[355] Kellman, 'History of Healthcare Environments' in Marberry (ed.), *Innovations in Healthcare Design*, p. 45.
[356] Park, 'Medicine and Society in Medieval Europe' in Wear (ed.) *Medicine in Society*, p. 85.

which were to maintain their popularity for centuries due to the ease with which additional wards could be added as the institution expanded.[357]

By the mid-sixteenth century, England boasted an array of various institutions which could accommodate the sick. Specialist institutions opened to cater for patients suffering from diseases which were overlooked or rejected by public hospitals, with chronic, venereal, and infectious conditions forming the majority of these cases.[358] Numerous leprosaria were established, with high walls and protective buffers of air (and sometimes bodies of water) separating lepers permanently from the rest of society.[359] These buildings were adapted into other types of medical institutions as rates of leprosy declined – lunatic asylums, venereal disease hospitals, lazarettos, and even quarantine stations designed to isolate victims of the bubonic plague. Many small hospitals were also established in large, remodelled homes, with a focus on improving ventilation within the original structure rather than ridding the building of its domestic heritage.[360]

Despite this proliferation of small, specific types of medical institutions, and the importance of their role in providing support to the sick and poor, it was the substantial general hospitals established in London which foretold the influential position of medical institutions in the metropolis. By the late 1670s, the city was home to over half a million people.[361] Beyond the capital, England had no general hospitals, while London itself could lay claim only to the two

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[357] Markus, *Buildings and Power*, p. 108.
[358] L. Granshaw, 'Fame and Fortune by Means of Bricks and Mortar': The Medical Profession and Specialist Hospitals in Britain, 1800-1948' in Granshaw and Porter (eds.), *The Hospital in History*, p. 200; F. Condrau, 'The Institutional Career of Tuberculosis: Social Policy, Medical Institutions and Patients Before World War II' in J. Henderson, P. Horden and A. Pastore (eds.), *The Impact of Hospitals, 300-2000* (Peter Land AG, Bern, 2007), pp. 348-349.
[359] Markus, *Buildings and Power*, p. 113; Carlin, 'Medieval English Hospitals' in Granshaw and Porter (eds.), *Hospitals in History*, pp. 22-23.
[360] Duncum, 'The Development of Hospital Design' in Poynter (ed.), *The Evolution of Hospitals*, p. 208.
[361] 'A Population History of Old London', *The Proceedings of the Old Bailey: London's Central Criminal Court, 1674-1913*, at <http://www.oldbaileyonline.org/static/Population-history-of-london.jsp#a1674-1715> accessed 2 July 2010.

granted decades earlier by Henry VIII.[362] These institutions treated approximately twenty thousand cases every year. Although this figure is large, it represented just a small fraction of the ill within the city, and, indeed, the country.[363] The rise of humanitarian traits such as philanthropy and paternalism drew attention to the desperate need for more hospitals to care for the sick, prompting a sudden increase in donations for the establishment of new hospitals and the expansion and redevelopment of older institutions.[364]

Settling upon a site for a new hospital was often a topic of great debate. While some private hospitals and specialist institutions were established in rural areas, general hospitals were typically located in urban areas, primarily to allow ease of access for patients and doctors.[365] Many patients would have been unable to access an institution located at a great distance from their homes, and mobility was often especially curtailed during illness. Surgeons and physicians, too, preferred to work in hospitals within a reasonable distance to their homes. Hospitals with attached medicals schools were also better located in cities, as students were more attracted to institutions which were centrally positioned.

The outpouring of funds which enabled the construction and redevelopment of so many institutions meant that by 1800, most major cities and towns featured general hospitals. This relatively rapid expansion of medical facilities stimulated a reconsideration of the precise built environments required by such services.[366] The sprawling, chaotic muddle of buildings which accommodated many hospitals in earlier centuries were frowned upon as out-dated, inefficient,

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362 Three other London institutions granted to the stewardship of the city were Christ's, Bridewell and Bethlem. As these are not hospitals for the sick poor they are not included in the above discussion. See below for more details on general hospitals and the wider health system at this time.
363 Porter, 'Hospitals and Surgery' in Porter (ed.), *The Cambridge Illustrated History of Medicine*, p. 214.
364 Porter, 'Hospitals and Surgery' in Porter (ed.), *The Cambridge Illustrated History of Medicine*, p. 213.
365 L. Smith, 'The Architecture of Confinement: Urban Public Asylums in England, 1750-1820' in L. Topp, J. Moran, and J. Andrews (eds.), *Madness, Architecture and the Built Environment: Psychiatric Spaces in Historical Context* (Routledge, London, 2007), p. 41.
366 J. Pickstone, *Medicine and Industrial Society: A History of Hospital Development in Manchester and its Regions, 1752-1946* (Manchester University Press, Manchester, 1985), p. 106.

and too closely resembling the indigence and privation found in the homes and lives of those admitted to its wards. Practical concerns were not the sole considerations, however, when selecting a site and designing a hospital. By the seventeenth and eighteenth centuries, these institutions were significant public buildings which needed to be located amongst the communities they served.[367] It was essential that the architecture of hospitals reflected their important social position.

The Hospital in Society

In both Britain and its colonies, hospitals were essentially built to treat the deserving poor. While the destitute were managed under the auspices of the Poor Law, and the wealthy had the means to receive treatment in their own homes, it was the deserving poor – those who had some form of regular employment, but no savings or prosperous friends or family to fall back on during hardships – who had no available means of medical support. As buildings designed, constructed, and financed by the wealth and influence of the upper classes for the use of the deserving poor, it was essential that these institutions reflected their origins and purposes. Voluntary hospitals had to be simple and unpretentious as they housed a service for the poor, but they simultaneously had to be sufficiently distinguished as would befit a significant public institution, funded from the pockets of the aristocracy. All these complex and intertwining elements needed be recognised through the architectural design of the hospital.[368]

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[367] P. Borsay, *The English Urban Renaissance: Culture and Society in the Provincial Town, 1660-1770* (Oxford University Press, Oxford, 1989), p. 109-110; Smith, 'The Architecture of Confinement' in Topp, Moran, and Andrews (eds), *Madness*, p. 41.
[368] Sloane, 'Scientific Paragon to Hospital Mall', p. 82.

Essentially, whether in health or sickness, whether deserving or idle, the "poor must be lodged like the poor."[369] The simplicity of this statement, however, conceals an inherent contradiction. British hospitals were traditionally founded by donations of land or money.[370] Although some donors undoubtedly had truly philanthropic goals, others benefactors saw sponsorship of medical institutions as a means of publicly parading their charitable deeds, and they resented paying for "monstrously ugly structures whose chief architectural feature is a 'tall chimney'."[371]

One crucial purpose of voluntary hospitals may have been to absorb such exhibitions of charitable generosity, to provide an outlet for the need of the elite to be seen to be benevolently open-handed towards the underprivileged.[372] Merchants, artisans and tradesmen with aspirations to respectability often donated labour and materials under the assurance that such endowments were as useful and appreciated (and as carefully recorded and displayed) as those made in more mercenary terms.[373] These benefactors often did not have the financial means to make donations other than in kind, but such gifts allowed tradesmen to separate themselves socially from the labouring poor. Gifts of stone, glass, timber, and slate were made to hospitals, and the labour to transport and install it was also offered freely.[374] One entrepreneur donated some £2000 worth of stone, paving materials and lime to St Bartholomew's during its redevelopment; taking the opportunity to "marry commerce and philanthropy," the businessman hoped his gift would induce other city authorities to purchase his materials to use in the construction of other public buildings.[375] Such donations – whether in goods or cash – could secure or improve a

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[369] Stevenson, *Medicine and Magnificence*, p. 5.
[370] B. Abel-Smith, *The Hospitals: A Study in Social Administration in England and Wales*, (Heinemann, London, 1964), p. 5; J. Taylor, *Hospital and Asylum Architecture in England 1840-1914: Building for Health Care* (Mansell, London, 1991), p. 34.
[371] A. Scull, *Museums of Madness: The Social Organization of Insanity in Nineteenth-Century England* (Allan Lane, London, 1979), p. 217; Taylor, *Hospital and Asylum Architecture*, pp. 42-43; Stevenson, *Medicine and Magnificence*, p. 18-23.
[372] Granshaw and Porter (eds.), *Hospitals in History*, p. 8.
[373] K. Wilson, *The Sense of the People: Politics, Culture and Imperialism in England, 1715-1785* (Cambridge University Press, Cambridge, 1998), p. 80; see also R. Porter, 'The Gift Relation: Philanthropy and Provincial Hospitals in Eighteenth-Century England' in Granshaw and Porter (eds.), *The Hospital in History*.
[374] Stevenson, *Medicine and Magnificence*, pp. 117-118.
[375] Stevenson, *Medicine and Magnificence*, p. 119.

donor's social networks, ensure their philanthropic qualities were appropriately memorialised, and perhaps provide spiritual rewards after death. While ostensibly made to assist the poor, such gifts accordingly acted to endow the benefactor with social and political power which ran much deeper than the simple act of donating money.

Hospital architects had the difficult task of making the most of limited funding by investing it in utilitarian necessities, while still ensuring that the buildings served as visible demonstrations of the charitable generosity of the benefactors who made them possible. As built "manifestations of civic pride," these hospitals were major social institutions, and it was essential that their design and appearance supported this intention.[376] It was beginning to be understood, however, that hospitals had to be much more than showpieces. Architects focused on maximising space, ensuring that as a *public* institution, the hospital could accommodate as many patients as possible.[377] Medical practitioners, on the other hand, emphasised the importance of wide open spaces, the implementation of plentiful and reliable ventilation, the isolating of sanitary and auxiliary services, and the installation of impermeable and easily cleaned surfaces to ensure that, as a *medical* institution, the hospital functioned as efficiently and effectively as possible.[378]

This tension between economy, functionality, and architectural finery influenced almost every aspect of the design and construction of medical institutions. Number and placement of beds, for example, was a contentious issue. While donors and authorities often pushed for more patient accommodation to increase the number able to be served by a single hospital, some doctors realised the danger of overcrowded conditions and urged the implementation of

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[376] Granshaw and Porter (eds.), *Hospitals in History*, p. 8; Scull, *Museums of Madness*, p. 217; Taylor, *Hospital and Asylum Architecture*, pp. 42-43.
[377] J. Aikin, *Thoughts on Hospitals* (Joseph Johnson, London, 1771), p. 13.
[378] H. Richardson, *English Hospitals 1660-1948: A Survey of the Architecture and Design* (National Monuments Record Centre, Swindon, 1998), p. 4.

minimum space requirements for each patient.[379] At times, however, some hospitals were better known for their impressive architectural façades than for the functionality of their designs or the efficacy of their treatment regimes.[380]

Complicating matters still further was the fact that grand architecture, magnificent proportions and pretentious decoration implied that funding for the institution was abundant, discouraging future financial support from the donors who embodied the hospitals' financial and administrative security. Some authorities were condemned for "the Building of *Gaudy Palaces*, instead of *convenient Hospitals* for the Poor [with] more *Ostentation than Charity*; whilst the Ornaments, especially of *Paintings and Carvings* are EXTRAVAGANCES, that would else have provided for many other POOR."[381] Public hospitals were notorious for spending bequests and donations on building works rather than on improving conditions and services for patients. In the eighteenth century, a man willed £200 to St Bartholomew's Hospital under the stipulation that it was "for the use of the Poor and not for building."[382]

This uneasy balance between economic functionality and costly elegance continued in the design and construction of early hospitals in the Australian colonies. New South Wales' Governor Lachlan Macquarie, for example, was criticised for authorising the erection of imposing government medical institutions of magnificent proportions, intending them to become "grand element[s] in the landscape" around which communities would flourish.[383] Not all authorities shared his vision, and his detractors condemned the expense of such monumental edifices,

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379 Pickstone, *Medicine and Industrial Society*, p. 107.
380 Pickstone, *Medicine and Industrial Society*, p. 147.
381 Cited in Stevenson, *Medicine and Magnificence*, p. 22 (emphasis and italics original).
382 Stevenson, *Medicine and Magnificence*, p. 5, pp. 18-23
383 J. Kerr, *Design for Convicts: An Account of Design for Convict Establishments in the Australian Colonies during the Transportation Era* (Library of Australian History, Sydney, 1984), p. 37.

declaring that penal institutions should be plain, economical, and utterly functional with no unnecessary – and expensive – frippery.[384]

It was not until well into the nineteenth century that the unique challenges of designing and constructing such institutions were fully recognised.[385] During the period of time covered by this research (and, indeed, beyond it into the late nineteenth century), the conventional place for the sick in British communities remained the home; as discussed in Chapter Two, family and friends formed the customary support networks during illness, with wider parish assistance utilised if necessary.[386] It was only when these networks of support broke down and people moved outside their community that public institutions to tend the ill became necessary.[387] In this way, the hospital formed a "surrogate household" for the sick, replacing the traditional communal structure with something more akin to social support.[388] The slow evolution of hospital architecture prior to the sixteenth century was largely due to this social stigma, inasmuch as hospitals stood as symbols of the failure of local communities to care for their own sick. Their resemblance to poorhouses and the legacy of their charitable origins contributed further to their dismal reputation, as evidenced in various ways in each of the three hospitals in this sample, all of which adopted medical and architectural advancements in different ways and to different degrees.[389]

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[384] Kerr, *Design for Convicts*, p. 37.
[385] Stevenson, *Medicine and Magnificence*, p. 4.
[386] D. Gagan and R. Gagan, *For Patients of Moderate Means: A Social History of the Voluntary Public Hospital in Canada, 1890-1950* (McGill-Queen's University Press, Quebec, 2002), p. 3.
[387] Stevenson, *Medicine and Magnificence*, p. 3.
[388] It was not, however, a straightforward decline of the role of the family filled in by an increase in the role of the state. Changes in family size, increased ability to travel longer distances for employment, changes in morbidity and mortality patterns, and numerous other fluctuating elements make this a complex transition (see, for example, P. Horden and R. Smith (eds.), *The Locus of Care: Families, Communities, Institutions, and the Provision of Welfare Since Antiquity* (Routledge, London, 2003); Stevenson, *Medicine and Magnificence*, p. 3; Duncum, 'The Development of Hospital Design' in Poynter (ed.), *The Evolution of Hospitals*, p. 208).
[389] A. Scull, *The Most Solitary of Afflictions: Madness and Society in Britain, 1700-1900* (Yale University Press, London, 1993), p. 134.

By the eighteenth and early nineteenth centuries, hospitals in London and wider afield were feeling the pressure to construct or adapt their facilities to accommodate innovations in the design of healing environments. Despite lying at vastly different geographic positions, the three hospitals in this sample were all influenced to varying degrees by architectural, medical, and scientific advancements. The free passage of fresh air and ease of cleaning were among the most influential, with both the interior details and the broader floor plans of institutions tailored to accord with new understandings of the importance of salubrious and well-ventilated environments.

New floor plans took over from earlier layouts, with the cruciform design popular during the fifteenth and sixteenth centuries superseded by more modern layouts, such as the corridor plan. Often two or three storeys high, a central administration block connected a large corridor which housed the wards, allowing for easy segregation of patients by sex or disease. This type of design remained popular in Britain for its simplicity, economy, and ease of superintendence for over a century from around 1700.[390] The wide corridors were particularly spacious, allowing uncomplicated nursing and administration, and were also able to comfortably accommodate crowds of medical students in teaching hospitals.[391] Corridor hospitals were easily established in existing large houses, or built to suit new sites, with the traditional rectangular or 'H'-style designs being particularly favoured as they could be extended as necessary and usually required less land.[392] In a typical corridor hospital, a basement floor often contained essential services (and sometimes an infectious diseases ward), the ground floor might admit accident and

[390] Richardson, *English Hospitals*, p. 23.
[391] Abel-Smith, *The Hospitals*, p. 41.
[392] Stevenson, *Medicine and Magnificence*, p. 144; Richardson, *English Hospitals*, p. 23.

'operation' cases, the first floor could accommodate medical patients, while the second floor housed 'chronic surgical' patients.[393]

While they undoubtedly had a number of benefits, these corridor-plan hospitals also had poor ventilation, leading to higher rates of patient mortality. As an alternative, St Bartholomew's Hospital and a handful of other institutions briefly trialled a 'double ward' plan, in which two wards were placed either side of a spine wall, punctuated with doors to allow ventilation and access. The air flow permitted by this layout, however, was still insufficient, and it was accordingly condemned for rendering it "impossible to prevent the existence of hospital atmosphere."[394]

Despite the popularity of various hospital designs over the decades, until the 1850s no one particular hospital design, size or shape was considered universally ideal. Instead, the built environments of hospitals were continually evolving, utilising many different architectural designs to provide spatial flexibility.[395] The use of space in hospitals tended to change as need dictated. Institutions were built to suit the requirements of their site or their sponsors, or made to fit into existing structures. This fluidity of space is illustrated in the 1829 plan of New Norfolk Hospital, where two areas are labelled simply as 'Rooms'; these may have been used as overflow wards when the hospital became crowded, or perhaps as day- or work-rooms.[396] Over time, hospital designs became more specific and inflexible in their designation of spaces for particular tasks.[397]

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[393] Taylor, *Hospital and Asylum Architecture*, p. 54.
[394] Taylor, *Hospital and Asylum Architecture*, pp. 55-56.
[395] S. Piddock, *A Space of Their Own: The Archaeology of Nineteenth-Century Lunatic Asylums in Britain, South Australia and Tasmania* (Springer, New York, 2007), p. 36.
[396] Tasmanian Archive and Heritage Office, Public Works Department: Plans, Architectural Drawings, Elevations and Sections of Public Buildings*, Plan of New Norfolk Invalid Hospital and Lunatic Asylum: Proposed Additions by R. Kelsall* (*Ground Plan and Elevations)*, (PWD 266/1/1432).
[397] Taylor, *Hospital and Asylum Architecture*, p. 15.

The pavilion-plan ward, popularised by Nightingale, was the greatest innovation in hospital design in the nineteenth century.[398] In keeping with more rigid utilisation of space, it defined the usage of different areas within the hospital more clearly than earlier plans. Pavilion-plan wards were typically long, rectangular blocks of one or two storeys, with windows placed opposite each other to assist the natural flow of air and light, with beds placed between the windows.[399] The wards were kept separated from other service areas of the hospital, such as kitchens, administration and especially post-mortem and mortuary sectors, and were equipped with distinctive 'sanitary towers' at each end to accommodate washing and lavatory facilities.[400] The ward blocks were linked by corridors, which were left open to the elements in many hospitals, interspersed with green spaces such as lawns and gardens.[401] The areas surrounding the built environment of hospitals were also incorporated into the design and attributed with healing powers of their own.[402] Both New Norfolk Hospital and St Bartholomew's Hospital were provided with gardens and airing yards of various sizes where patients could enjoy the health-giving properties of fresh air and sunshine.

By the 1860s, new British institutions were built (and older hospitals altered) to align with pavilion principles, but the influence of this design does not appear in the New Norfolk Hospital records until the 1880s.[403] Superintendent and Medical Officer of the hospital, Dr MacFarlane, gave evidence at the 1883 Royal Commission into the State of Lunatic Asylums, and commented that the treatment and the comfort of patients at New Norfolk would be significantly improved

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[398] Although Nightingale is generally given full credit for the development of the pavilion ward plan, George Godwin, editor of influential design periodical *The Builder*, and John Robertson were also involved in its popularisation (Richardson, *English Hospitals*, p. 5).
[399] Duncum, 'The Development of Hospital Design' in Poynter (ed.), *The Evolution of Hospitals*, p. 215.
[400] J. Kisacky, 'Restructuring Isolation: Hospital Architecture, Medicine and Disease Prevention', *Bulletin of the History of Medicine*, 79 (2005), p. 20; Taylor, *Hospital and Asylum Architecture*, pp. 7-8, p. 68; Richardson, *English Hospitals*, p. 5.
[401] Duncum, 'The Development of Hospital Design' in Poynter (ed.), *The Evolution of Hospitals*, p. 215.
[402] C. Marcus and M. Barnes, *Healing Gardens: Therapeutic Benefits and Design Recommendations* (John Wiley and Sons, Canada, 1999), p. 13.
[403] The less common circular ward became popular in the 1880s, primarily on sites where space was limited (Taylor, *Hospital and Asylum Architecture*, pp. 8-9, p. 16).

by the addition of pavilion wards[404] Such wards, however, were never constructed despite the benefits they would have provided to patients and staff.

The Role of the Hospital in Disease Transmission

The architecture of institutions provided the ideal arena for debate about the means of disease transmission. During the eighteenth and nineteenth centuries, little in medicine was certain. Each medical practitioner extolled the accuracy of their own explanation of disease communication; each had their own definitions and distinctions; each was convinced of the facts and veracity of their account.[405] Most, however, fell into one of two groups – the miasmatists or the contagionists.[406] These theories co-existed to some extent, as the development of germ theory did not cause the immediate rejection of the traditional notion of miasma, which persisted well into the nineteenth century. Most practitioners would have utilised elements of both theories in their personal explanations, with many accepting that the built environment and some invisible, infectious agent played a dual role in disease transmission.[407]

At one extreme of the disease transmission debate, miasmatists (also known as anti-contagionists) maintained that disease stemmed from rotting animal or vegetable matter, stagnant water, and human waste which produced foul-smelling, poisonous 'miasmas' or

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[404] State Library of Tasmania, *Royal Commission on the State of the Lunatic Asylum in Tasmania, Report of the Commissioners, with Evidence Taken, and Other Documents* (Government Printer, Hobart, 1883), p. 5.
[405] R. Porter, *The Greatest Benefit to Mankind: A Medical History of Humanity from Antiquity to the Present* (Fontana Press, London, 1999), p. 259.
[406] R. Haines, *Life and Death in the Age of Sail*: *The Passage to Australia* (University of New South Wales Press, Sydney, 2003), p. 82; A. Clarke-Kennedy, *The London: A Study in the Voluntary Hospital System 1840-1948* (vol. 2, Pitman Medical, London, 1963), p. 5.
[407] J. Cule, 'The History of Medicine' in R. Porter (ed.), *Medicine: A History of Healing* (The Ivy Press Limited, Thailand, 1997), p. 35.

'effluvias'.[408] This ancient theory was based on the concept that illness originated in the environment, and that removing pestilential filth would curtail the spread of disease. [409] Gloomy, insanitary, poorly-ventilated conditions were considered noxious; indeed, "Nothing approaches so near to the first original of the plague, as air pent up, loaded with damps, and corrupted with the filthiness that proceeds from animal bodies."[410] Both Florence Nightingale, pioneer of professional nursing, and Edwin Chadwick, a key figure in the advancement of public health and poor law campaigns, were ardent miasmatists, contending that "All smell is, if it be intense, immediate, acute disease."[411]

While miasmatists saw disease as arising from the environment, contagionists cited a poison passing from person to person (rather than from the environment to people) as the cause of illness.[412] Speculation about 'contagions' (or germs) were originally attempts to explain the spread of syphilis in the late fifteenth century, but the progression of microscopic technology during the early eighteenth century allowed these concepts to take shape into recognised, systematic theories.[413] Scientists postulated the existence of some "wonderfully minute living creatures," responsible for the transmission of disease from one person to another.[414] While the systematic spread of diseases such as cholera appeared to support their hypotheses, critics questioned why some fell victim to such diseases while others remained unscathed.

The integral connection between poverty and disease was noted as significant, particularly by the miasmatists. It was the poor who lived and worked, were born and died amidst the inescapable,

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[408] M. Dodson, *Disease: The Extraordinary Story Behind History's Deadliest Killers* (Quercus, London, 2007), p. 47; Cule, 'The History of Medicine' in Porter (ed.), *Medicine: A History of Healing*, p. 35.
[409] Porter, *The Greatest Benefit to Mankind*, p. 259, p. 411.
[410] Mead cited in J. Cumpston, 'Public Health in Australia: Part 1, The First Forty-Two Years', *The Medical Journal of Australia*, 17 (1931), p. 493.
[411] Chadwick, quoted in Porter, *The Greatest Benefit to Mankind*, p. 411; L. Picard, *Victorian London: The Life of a City, 1840-1870* (Phoenix, London, 2006), p. 235.
[412] Kisacky, 'Restructuring Isolation', p. 21, p. 32; Dodson, *Disease*, p. 48.
[413] R. Porter, 'What is Disease?' in R. Porter (ed.), *The Cambridge Illustrated History of Medicine* (Cambridge University Press, Cambridge, 1996), p. 102.
[414] Marten, quoted in Cule, 'The History of Medicine' in Porter (ed.), *Medicine: A History of Healing*, p. 33.

unrelenting, potentially fatal stench of day-to-day life – the "foetor of crowded courts and alleys…the stench of unemptied cesspools and accumulating refuse dumps…the exhalations of graveyards and slaughter houses."[415] Thus, disputes surrounding disease transmission were undoubtedly founded on medical and scientific contentions, but also incorporated elements of moral, political and economic debates.[416] Indeed, as Evans points out, both moral wickedness and physical disease were believed to spread through:

> invisible substances that passed from body to body in some subtle effervescence, too rarified for the human intelligence to fix upon in transit and yet so profoundly ugly in their effects that no one could reasonably doubt the fact of transmission.[417]

In keeping with both miasma and contagion theories of disease transmission in the late eighteenth and early nineteenth centuries, the potential of hospital design to assist recovery was considered to lie in the maximisation of ventilation and cleanliness. As army physician Dr John Pringle commented, the air in hospitals was particularly disposed to cause and perpetuate disease, tainted as it was with "the poisonous effluvia of sores, mortifications, dysenteric and other putrid excrements."[418] Wherever people were kept crowded together in poorly ventilated and dirty institutions – whether these 'receptacles' be gaols, army barracks or hospitals – epidemic infections were likely to break out.[419] It was believed that by surrounding patients with 'walls' of pure air, they would be protected from exposure to corrupted miasmas.

Accordingly, hospital design incorporated ample space for each inmate to prevent the overcrowding and the accompanying increase in filth and polluted vapours which represented

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[415] Clark-Kennedy, *The London: A Study in the Voluntary Hospital System (1840-1948)*, (vol. 2, Pitman Medical, London, 1963), p. 7.
[416] Porter, 'What is Disease?' in Porter (ed.), *The Cambridge Illustrated History of Medicine*, p. 103.
[417] R. Evans, *The Fabrication of Virtue: English Prison Architecture, 1750-1840* (Cambridge University Press, Cambridge, 1982), p. 115.
[418] Pringle cited in Richardson, *English Hospitals*, p. 3.
[419] Evans, *The Fabrication of Virtue*, p. 95.

potentially fatal outcomes for patients.[420] Few hospitals, however, were inclined or able to implement the ideal proportion of space per patient. Providing the recommended amount of space per bed would have dramatically reduced the number of patients which could be accommodated by a hospital. This in turn would have resulted in a deleterious effect upon potential benefactors' views of the usefulness of the institution, and consequently upon the likelihood of them contributing funds to its continuation. A similar dilemma was faced by architects and hospital authorities when designing and constructing new facilities: maximising the number of patients in beds was more important than ensuring those patients had sufficient fresh air. This dilemma is illustrated by the letters and memoranda recording the planning of the colonial hospitals in Bermuda and New Norfolk, and in the redevelopments and renovations at St Bartholomew's.

A Tale of Three Hospitals

Comparison between the built environments of New Norfolk Hospital and institutions such as St Bartholomew's Hospital and the Royal Naval Hospital at Bermuda is inherently problematic. While all three hospitals were established to function specifically as medical institutions, the haphazard additions and renovations meant that New Norfolk Hospital, hampered by economic parsimony and complicated by too many competing political, medical, social and ideological opinions, could never evolve into anything resembling an ideal institution. While St Bartholomew's original buildings were similarly disorganised and disparate, renovations were begun in 1729 to transform the institution into a space specifically designed for the efficient restoration of health. The Royal Naval Hospital in Bermuda was also planned to provide reasonable levels of space and facilities for its patients and staff.

[420] Kisacky, 'Restructuring Isolation', p. 8.

St Bartholomew's Hospital, London

St Bartholomew's Hospital, in Smithfields, London, originated in 1123 as part of a charitable movement.[421] Like many early hospitals, it was founded alongside a priory, and for almost three hundred years the elements of the institution operated in conjunction. In 1420 the two religious and medical sections separated, with each part attaining independence. For the following one hundred years, St Bartholomew's continued to tend the ill from the local area and travellers who found themselves unwell while far from home. Henry VIII's dissolution of the monasteries in 1529, however, saw the closure of the priory, and although the secularised hospital was permitted to remain open, it was left vulnerable with no secure source of funding.[422]

Anxious about losing a major source of support for the ill poor, London citizens petitioned Henry VIII to safeguard the future of the hospital. Sensing public fear at the possible return of the plague, and keen to secure "some lasting memento of his commiserations for the distresses of humanity," Henry VIII relented. By "a splendid act of charity" he granted five hospitals to the city and permanently endowed them with sufficient land and income to support the sick poor, perhaps influenced by other European cities which had earlier established relief institutions.[423] This group of hospital were known as the London Royal Hospitals, and together they provided a handful of institutions to tend the indigent of the metropolis – Bethlem to accommodate the insane, Christ's to educate poor children, Bridewell to contain the disorderly and criminal, and St Bartholomew's and St Thomas' to tend to the ill.[424] Thus, St Bartholomew's was one very few English hospitals to survive the Reformation, and to continue offering

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[421] *The History of St Bartholomew's Hospital*, at <http://www.bartsandthelondon.org.uk/aboutus/history /barts.asp>, accessed 11 October 2008.
[422] J. Richardson, *The Annals of London: A Year-by-Year Record of a Thousand Years of History* (Cassell Paperbacks, London, 2001), p. 88.
[423] B. Golding, *An Historical Account of St Thomas's Hospital, Southwark* (Longman, Hurst, Rees, Orme, and Browne, London, 1819), p. 156; Richardson, *English Hospitals*, p. 16.
[424] C. Rose, 'Politics and the London Royal Hospitals' in Granshaw and Porter (eds.), *Hospitals in History*, p. 124.

"comfort to prisoners, shelter to the poor, visitation to the sick, food to the hungry, drink to the thirsty, clothes to the naked, and sepulchre to the dead."[425]

As a royal hospital, St Bartholomew's enjoyed a protected status and a secure income which allowed it to continue in its role as a major provider of general healthcare to the London populace.[426] Until the early 1700s, the hospital operated from a disorganised jumble of buildings crowded around small courtyards and gardens tucked behind the shopfronts and houses of Smithfields (see Figure 5).[427] After the Great Fire of London in 1666, several wards were closed and repurposed as lodgings for labourers who had lost their homes, with other temporary buildings erected to serve as additional accommodation.[428] Decades later, this 'temporary' accommodation was still in use and causing great difficulties in the daily running of the institution. Makeshift dwellings blocked walkways, obstructing communication and ventilation between different parts of the hospital, and the tenants of the lodgings lined the staircases and passages of the hospital, begging or offering for sale "commodities very improper for the patients."[429] Administration and patient accommodation were housed in disparate buildings "so irregular that there is scarse any Communication between the several parts of it & the whole has hardly so much as the outward appearance of an hospital."[430]

[425] Richardson, *The Annals of London*, pp. 87-88; Porter, *The Greatest Benefit to Mankind*, p. 298.
[426] Rose, 'Politics and the London Royal Hospitals' in Granshaw and Porter (eds.), *Hospitals in History*, p. 124.
[427] Richardson, *English Hospitals*, p. 2, pp. 17-18; Stevenson, *Medicine and Magnificence*, pp. 126-127.
[428] Stevenson, *Medicine and Magnificence*, p. 129.
[429] Stevenson, *Medicine and Magnificence*, pp. 129-130.
[430] Cited in Stevenson, *Medicine and Magnificence*, p. 126 (spelling and grammar original).

Figure 5: An engraving by B. Cole depicting a bird's eye view of St Bartholomew's Hospital in 1723, revealing the conglomeration of buildings which comprised the institution.[431]

This overcrowding, dilapidation, and disorder were not, however, limited to the hospital and its grounds. Smithfield, the area of London in which St Bartholomew's was situated, was criss-crossed with congested laneways crowded with livestock bound for the famous Smithfield Market (see Figure 6). The open, grassy field in which the market operated originally stood outside the city's boundaries but, as the urban area extended into the rural districts beyond, the market was absorbed by the metropolis.

[431] Engraving by B. Cole, held at the Wellcome Library (London), also at <http://catalogue.wellcome.ac.uk/record=b1183515> accessed 1 September 2010.

Figure 6: A 1677 map of London in which Smithfield Market and St Bartholomew's Hospital are circled. Smithfield Market is the white diamond-shaped area, with the square borders of St Bartholomew's at its lower right edge. St Paul's Cathedral is the cruciform building below, and in the lower right corner is the Tower of London.[432]

While the grazier and the butcher were content with the bustling market remaining in the centre of London, shop-keepers and pedestrians, who were daily forced to contend with roaming cattle and oxen "of immense size," were less than satisfied and belaboured "the impropriety of driving sheep and bullocks through crowded streets, exposing passengers to danger, as well as the cattle to injury, and causing detriment to shops" (see Figure 7).[433] Indeed, contemporary observers such as C. Knight remarked that the "lowing of the beasts, the tremulous cries of the sheep, the barking of dogs, the rattling of sticks on the heads and bodies of the animals, the shouts of the drovers, and the flashing about of torches, present altogether a wild combination."[434] The want

[432] J. Ogilby and W. Morgan, *A Large and Detailed Map of the City of London* (1677). For a more detailed map of Smithfield, see J. Greenwood, *Map of West Smithfield* (1827), at <http://commons.wikimedia.org/wiki/File:Smithfield_1827.jpeg> accessed 8 October 2010.
[433] C. Knight, 'A Looking-Glass for London: No. XX', *The Penny Magazine of the Society for the Diffusion of Useful Knowledge*, 6 (1837), p. 809.
[434] Knight, 'A Looking-Glass for London', p. 809.

of an alternative space, and perhaps the momentum required to seek one out, meant that the market was never closed or moved, despite its status as an unmitigated "nuisance."[435]

Figure 7: Smithfield Market in 1855.[436]

Between 1729 and 1770, however, major building works were undertaken, dramatically transforming the built environment of both Smithfield and St Bartholomew's, and reshaping the hospital according to emerging concepts of a healing environment. Many original structures were demolished, and the non-medical parts of the hospital (tenancies and shopfronts) were gradually removed to clearly demarcate the hospital from the surrounding city.[437] Architect James Gibbs designed the new St Bartholomew's Hospital, proposing a more unified and elegant plan centred on "a dignified square" surrounded by four large, rectangular three-storied blocks or 'piles' (see Figure 8).[438] Three of these blocks were allocated to patient care and treatment. Each of these blocks was three storeys high, with each floor divided into four wards (two either

[435] Knight, 'A Looking-Glass for London', p. 808.
[436] 'Smithfield Market', *Illustrated London Times* (1855), at <http://commons.wikimedia.org/wiki/File:Smithfield_Last_day_of_Old_Smithfield_ILN_1855.jpg> accessed 8 October 2010.
[437] Richardson (ed.), *English Hospitals*, p. 18.
[438] N. Moore, *The History of St Bartholomew's Hospital: Henry IV – George V* (vol. 2, C. Arthur Pearson Limited, London, 1918), p. 843; Stevenson, *Medicine and Magnificence*, p. 130; Richardson (ed.), *English Hospitals*, p. 10, p. 18.

side of a 'spine' wall) and separated in the centre by stairs, vestibules, and a private room for nurses.[439]

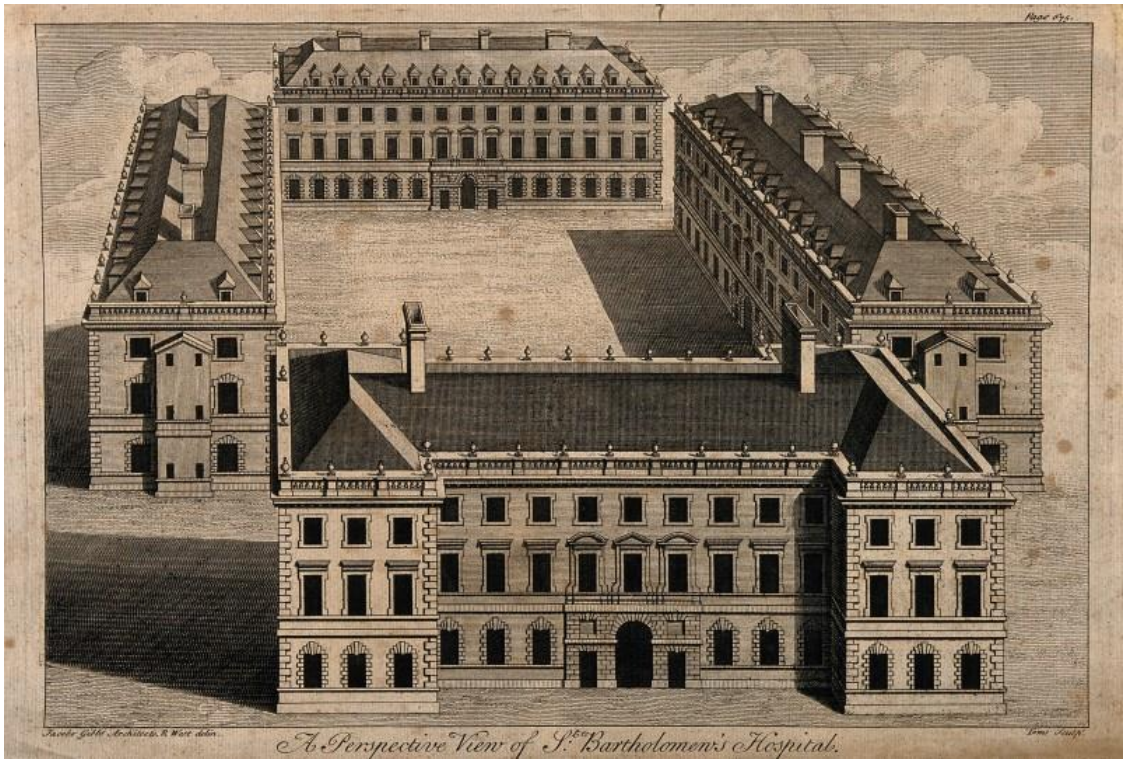

Figure 8: An engraving by W. Toms, showing a view of St Bartholomew's Hospital in 1730, after its comprehensive renovations.[440]

St Bartholomew's new design provided a combined total of thirty-six wards when the final patient block was completed. The fourth block (to the north) was set aside for administrative functions, including a spacious governors' room.[441] This design had several advantages. One block could be built at a time, allowing patients to be accommodated in the newly erected ward while funds were raised for the construction of the next wing.[442] It also improved air flow, and was believed to limit the miasmic spread of infection, protecting the institution in the event of

[439] Stevenson, *Medicine and Magnificence*, pp. 130-131.
[440] Engraving by W. Toms after R. West and J. Gibbs, held at the Wellcome Library (London), also at <http://catalogue.wellcome.ac.uk/record=b1179724> accessed 1 September 2010.
[441] Stevenson, *Medicine and Magnificence*, p. 130.
[442] Stevenson, *Medicine and Magnificence*, p. 116.

fire by allowing the conflagration to be isolated in a single block, shielding the other wings of the hospital.[443]

As the sick entered the hospital through the grand gateway they were met by the beadles, who acted as guards and porters.[444] Those who appeared sufficiently ill (but not incurable or infectious) were directed to the steward, who oversaw the admission and discharge of patients from his room to the right of the entrance, recording names and other pertinent details in a large book.[445] Those who managed to secure admission were then allocated a bed, with specialised wards provided for patients requiring 'Cutting', 'Sweating' or a particular 'Diet'.[446]

St Bartholomew's new design encompassed a total of thirty-six wards, each with fourteen beds arranged either side of a partition. Each floor of the ward blocks was built around a central staircase, with sanitary facilities located at the extremities of the buildings.[447] Operating theatres were later added to some blocks to accommodate the growing number of surgical cases.[448] The new layout and innovative design features of St Bartholomew's provided well-ventilated and light-filled spaces for patients, the ideal "place of rest and relief for the sick poor."[449]

New Norfolk Hospital, Van Diemen's Land

New Norfolk Hospital was similarly established as a centre of rest and relief, but for a different category of patients.[450] On the nineteenth of April, 1827, Lieutenant-Governor George Arthur issued a brief memorandum to the Principal Medical Superintendent, directing that all invalids

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[443] St Bartholomews' narrow escape from the Great Fire of London was still relatively fresh in the minds of the authorities involved in the rebuilding of the institution, and protection from another disaster would have been a high priority (Stevenson, *Medicine and Magnificence*, p. 131).
[444] Moore, *The History of St Bartholomew's Hospital*, p. 793.
[445] Moore, *The History of St Bartholomew's Hospital*, pp. 787-788.
[446] Richardson (ed.), *English Hospitals*, p. 2.
[447] Richardson (ed.), *English Hospitals*, p. 18.
[448] Moore, *The History of St Bartholomew's Hospital: Volume II*, p. 845.
[449] Moore, *The History of St Bartholomew's Hospital: Volume II*, p. 855.
[450] W. Southerwood, 'Bishop R.W. Willson's Work for the Insane in Tasmania', *Papers and Proceedings: Tasmanian Historical Research Association*, 20 (1973), p. 141.

from around the colony of Van Diemen's Land should be removed to the newly established hospital at New Norfolk.[451] The institution was designed to accommodate those who possessed the potential of introducing chaos to the fragile social equilibrium – the aged, infirm, pauperised and chronically ill – in a single location, with the intention of allowing them to be "comfortably lodged and taken care of at a very trifling expense."[452]

A temporary hospital had occupied the site since early in the nineteenth century, but it was not until 1827 that the location was selected for the colony's largest invalid depot, designed to merge the numerous small and scattered hospitals, barracks, penal stations, gaols, depots, and rented houses in which invalids had formerly been accommodated.[453] Admitting its first patients on the second of June, 1827, the invalid depot was an indispensable part of Arthur's efficient penal system, designed to relieve the rest of the system of the growing number of "such convicts as through age and infirmities have become unable to labour."[454] Although twenty-two miles (thirty-five kilometres) distant from Hobart Town, New Norfolk was accessible by water and road, and was well positioned to receive cases of accident and injury from convict gangs and masters in the district.[455] This location provided an ideal compromise between the salubrity of fresh country air and open space, and ease of access to major population centres for medical practitioners, patients and visitors.[456]

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[451] TAHO, *Colonial Secretary's Office: General Correspondence* (CSO 1/83/1838), p. 27.
[452] This section of Arthur's memorandum on the original document was struck out (TAHO, *CSO: General Correspondence* (CSO 1/83/1838), p. 27; Markus, *Buildings and Power*, p. 95).
[453] The exact date from which a hospital had been located at New Norfolk is unknown, but Gowlland suggests that it may have been between 1810-1820 (R. Gowlland, *Troubled Asylum: The History of the Royal Derwent Hospital* (self-published, New Norfolk, 1981), p. 1; M. Morris, *Invalids, Paupers and Lunatics: Port Arthur, New Norfolk and Other Peninsula Stations* (unpublished report for the Port Arthur Historic Site Management Authority, 2002), p. 29.
[454] J. Browne, *Poverty is Not a Crime: The Development of Social Services in Tasmania, 1803-1900* (Tasmanian Historical Research Association, Hobart, 1972), p. 9; Morris, *Invalids, Paupers and Lunatics*, p. 30; K. Fearnley, *Royal Derwent Hospital, 1827-1977: Sesqui-Centenary Celebrations* (self-published, Hobart, 1977), p. 1.
[455] After reports of long, damp journeys via the river, authorities recommended that patients be transported to New Norfolk by cart to avoid aggravating illnesses. The two parties from which New Norfolk Hospital received the most cases were Bridgewater, located halfway between New Norfolk and Hobart, and Hamilton, twenty-four miles (thirty-nine kilometres) west of New Norfolk (G. Crabbe, *History of Lachlan Park Hospital* (Department of Health Services, Hobart, 1966), pp. 2-3).
[456] Taylor, *Hospital and Asylum Architecture*, p. 24; F. MacDonald, 'The Infirmary of the Glasgow Town's Hospital, 1733-1800: A Case for Volunteerism?', *Bulletin of the History of Medicine*, 71 (1999), p. 85.

Upon the opening of New Norfolk Hospital, the parsimony exercised by the imperial and colonial authorities in its design and construction became immediately apparent. The institution was comprised of two barracks, one used for "Cooking, washing and other cursory operations" and the other for patient accommodation.[457] Conditions were austere, and the small timber buildings were poorly constructed and infested with insects and vermin.[458] The rooms were small in size, dark, and insufficiently ventilated. There were no bathrooms, no privies within the walls of the hospital, and the patients lacked access to basic items such as tables and cutlery.[459] Despite these inadequacies, in one or two areas the design of New Norfolk Hospital met the standards laid down by reformer John Howard.[460] The institution was set at a distance from any urban centre, with a peaceful rural outlook and close to a water supply.[461] Furthermore, the building was comprised of a single storey (although later alterations would add a second level to part of the structure), which was raised from the ground by several stone steps.

These features were, however, of little consolation to Dr Robert Officer, Superintendent of the Hospital, who was disturbed by the potential of the poor conditions of the institution to impede his patients' recovery and convalescence. He wrote to New Norfolk's Police Magistrate, William Henry Hamilton, urging him to convey to the Governor the importance of patient accommodation, and the benefits improved barracks would afford to the treatment of convict patients.[462] Officer argued for urgent improvements, and reported that many of his patients had already "been greatly affected by the wretched condition of the barracks they inhabit."[463] The types of diseases typically suffered by New Norfolk inmates – chronic conditions aggravated by

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[457] The first extant plan of New Norfolk was drawn up in 1827, but it was designed to show the proposed 1836 extensions, and does not delineate which parts of the building were constructed earlier, and which parts later (TAHO, *CSO: General Correspondence* (CSO 1/83/1838), pp. 13-15).
[458] Fearnley, *Royal Derwent Hospital*, p. 1.
[459] TAHO, *CSO: General Correspondence* (CSO 1/83/1838), pp. 13-15; Piddock, *A Space of Their Own*, p. 152.
[460] See Piddock, *A Space of Their Own*.
[461] Cited in Duncum, 'The Development of Hospital Design' in Poynter (ed.), *The Evolution of Hospitals*, p. 210.
[462] TAHO, *CSO: General Correspondence* (CSO 1/83/1838), pp. 13-15.
[463] TAHO, *CSO: General Correspondence* (CSO 1/83/1838), pp. 13-15.

damp and draught, such as rheumatism, paralysis and ophthalmia – rendered Officer's concerns all the more pressing.[464]

By late 1828, less than eighteen months after Arthur issued his memorandum, the New Norfolk Hospital was already impossibly crowded.[465] Aware that his patients were suffering from this insalubrious situation, and with his efforts at treatment rendered "hopeless" by the hospital's poor condition, Officer wrote another outspoken letter to Hamilton, which was in turn forwarded to Colonial Secretary John Burnett.[466] In it Officer vociferously protested that the substandard size and design of the hospital's rooms, compounded by the overcrowded conditions, prevented effective classification of the sick.[467] Miasmic theories of disease transmission emphasised the importance of isolating patients suffering from different conditions. Accordingly, popular hospital designs of the period incorporated architectural support for this segregation, but the layout of the New Norfolk institution actively worked against such isolation.[468]

Following Officer's lead, Hamilton sent an earnest missive to Burnett, decrying the "base conditions and general unfitness" of New Norfolk Hospital. "Impressed with the belief that a very eligible Hospital may be erected, on as simple a plan and at an inconsiderable expense," Hamilton appealed to the Colonial Secretary to consider constructing a new institution.[469] Just three weeks later, sensing the urgency in Hamilton's letter, but nonetheless having "given all possible attention to economy in its structure, and convenience in its arrangement," Burnett sent

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[464] Some patients even attributed illnesses to their exposure to the weather while in New Norfolk Hospital; in 1855, a man was treated for laryngitis, which he blamed on the lack of weatherproof accommodation while in the institution (Crabbe, *History of Lachlan Park Hospital*, p. 21; TAHO, *CSO: General Correspondence* (CSO 1/83/1838), pp. 13-15).
[465] TAHO, *CSO: General Correspondence* (CSO 1/83/1838), pp. 13-15.
[466] TAHO, *CSO: General Correspondence* (CSO 1/83/1838), pp. 13-15.
[467] TAHO, *CSO: General Correspondence* (CSO 1/83/1838), pp. 13-15.
[468] A. Scull, C. MacKenzie, and N. Hervey, *Masters of Bedlam: The Transformation of the Mad-Doctoring Trade* (Princeton University Press, Princeton, 1996), p. 107.
[469] TAHO, *CSO: General Correspondence* (CSO 1/83/1838), p. 16.

Arthur a plan for a hospital designed to accommodate sixty invalids and ten lunatics.[470] Arthur approved this plan, although due to dispute over the exact location of the extensions, the Council did not commission Civil Engineer John Lee Archer to produce a formal plan until late November 1829, almost exactly one year after Hamilton first petitioned Burnett to improve the physical environment of New Norfolk Hospital.[471] Archer, however, forwarded his design to Arthur just eleven days later. A further five days after this, on the ninth of December, 1828, Arthur issued a memorandum directing work to commence as soon as possible.[472]

Reflecting the urgent need for better conditions, Arthur instructed that the extensions, now intended to accommodate one hundred patients, should be "completed during the present Summer."[473] This was perhaps a somewhat ambitious request; two months after the Governor approved the plans Archer defensively attributed the lack of progress with construction to delays with paperwork, irritably remarking that he was not aware there was any particular rush.[474] After further complaints from Arthur, and the requisition of additional stone masons and bullocks, the new buildings were operational, although not completed, by 1831.[475] Further works based on designs drawn up by Officer were commenced in 1832 at a cost of £600 to provide additional accommodation for lunatics.[476] From this date, New Norfolk Hospital became the primary site of treatment for psychiatric patients in Van Diemen's Land.

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[470] Although 'lunatic' is now considered an insensitive derogatory term, until the mid-nineteenth century it was the accepted term applied to patients admitted for psychiatric conditions. Accordingly, it is used here in the latter sense, with no negative connotations implied (TAHO, *CSO: General Correspondence* (CSO 1/83/1838), p. 21).
[471] TAHO, *CSO: General Correspondence* (CSO 1/83/1838), p. 45.
[472] TAHO, *CSO: General Correspondence* (CSO 1/83/1838), p. 47; TAHO, *CSO: General Correspondence* (CSO 1/83/1838), p. 35; Gowlland, *Troubled Asylum*, p. 6; Crabbe, *History of Lachlan Park Hospital*, p. 3.
[473] TAHO, *CSO: General Correspondence* (CSO 1/83/1838), p. 47; TAHO, *CSO: General Correspondence* (CSO 1/83/1838), p. 35; Gowlland, *Troubled Asylum*, p. 7.
[474] TAHO, *CSO: General Correspondence* (CSO 1/83/1838), pp. 68-69.
[475] The exact date at which the new sections of the hospital were opened is unknown (TAHO, *CSO: General Correspondence* (CSO 1/83/1838), pp. 68-69; TAHO, *CSO: General Correspondence* (CSO 1/83/1838), p. 37; Browne, *Poverty is Not a Crime*, p. 15; J. Burnham, 'The Royal Derwent Hospital in Tasmania: Historical Perspectives on the Meaning of Community Psychiatry', *Australian and New Zealand Journal of Psychiatry*, 9 (1975), p. 163).
[476] TAHO, *CSO: General Correspondence* (CSO 1/83/1838), p. 111; S. Piddock, 'John Conelly's "Ideal" Asylum and Provisions for the Insane in South Australia and Tasmania' in A. Beisaw and J. Gibb (eds.), *The Archaeology of Institutional Life* (The University of Alabama Press, Alabama, 2009), p. 197; Crabbe, *History of Lachlan Park Hospital*, p. 4.

Following the additions made to improve patient conditions in 1832, the New Norfolk Hospital was comprised of two conjoined quadrangles.[477] The front square, bound on three sides with buildings and on the remaining side by a high wall, was intended for the reception and treatment of invalids, while the totally enclosed rear quadrangle was used to accommodate psychiatric cases.[478] The open courtyard in the centre of the rear quadrangle was divided by a high wall with male patients on one side and female inmates on the other. A Board of Inquiry, commissioned in 1833 to assess the hospital, described the institution as incorporating eight large rooms and several smaller ones, which was considered sufficient for the one hundred and thirty patients and twenty-one staff.[479] In 1834, however, numbers of patients again began to exceed the space available for them.[480] By 1836 the situation was growing desperate, with more than twice the intended number of patients accommodated in increasingly miserable conditions. Some patients were forced to sleep on the floors, while even those lucky enough to secure space in a bed could not always be sure of finding a sheet or blanket there.[481]

As a temporary solution to these overcrowded conditions, two hundred and one of the two hundred and ninety-nine patients were transferred from the New Norfolk Hospital to the Sorell Creek Convalescent Station during late 1836 and early 1837.[482] Extensions undertaken throughout this time provided a more permanent solution by increasing the amount of accommodation available for inmates, although information describing these alterations is scarce (see Figure 9).

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[477] TAHO, *PWD: Plans (Plan of New Norfolk Invalid Hospital)*, (PWD 266/1/1432).
[478] The use of space poses interesting parallels with treatment methods, particularly in the case of psychiatric patients (restraint methods used in treatment were replicated in their environment – high walls and small, enclosed yards), which are too extensive to discuss within the scope of this thesis.
[479] Crabbe, *History of Lachlan Park Hospital*, pp. 4-5
[480] R. Parton, *Royal Derwent Hospital: Psychiatric Hospital and Intellectual Handicap Training Centre, New Norfolk, Tasmania – Historical Notes, Present Day Statistics, Objectives and Functions* (unpublished report, June 1983), p. 2.
[481] Crabbe, *History of Lachlan Park Hospital*, p. 6.
[482] Gowlland, *Troubled Asylum*, p. 28; Crabbe, *History of Lachlan Park Hospital*, p. 6.

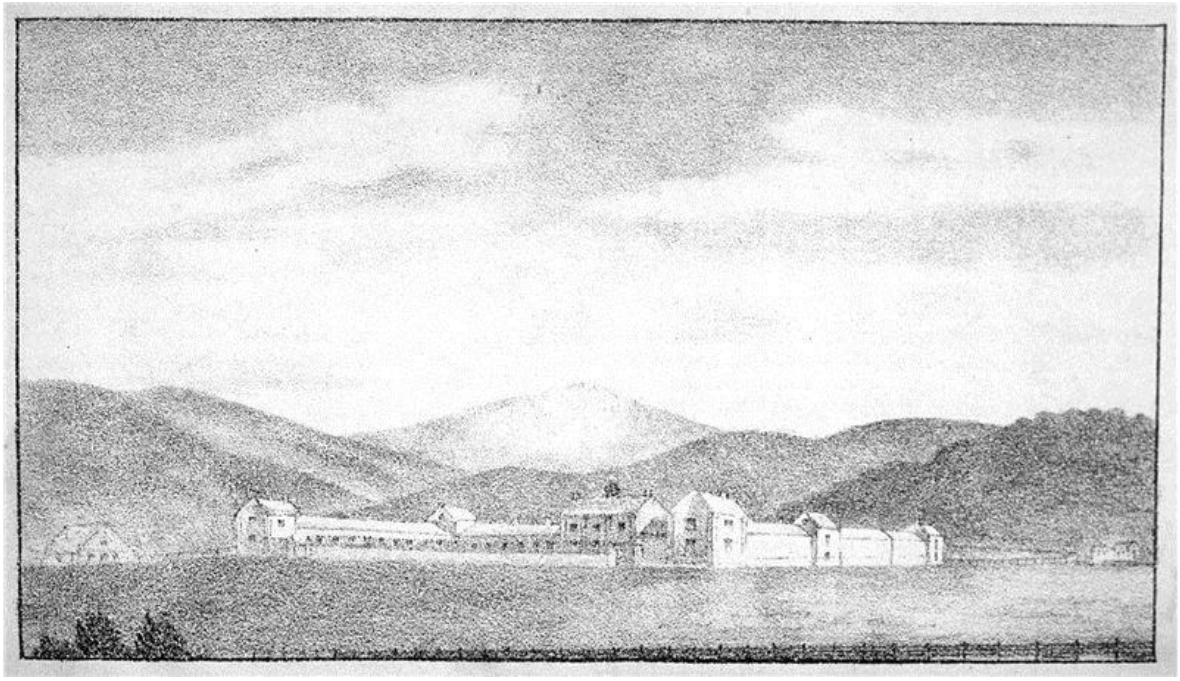

Figure 9: A view of New Norfolk Hospital in 1833 by Henry Melville.[483]

From plans draw up by Civil Engineer Roger Kelsall, which included building works of 1829, 1832, and the anticipated extensions of 1836, it would appear that additional wings were proposed for either side of the existing buildings to provide further lodgings for psychiatric patients (see Figure 10).[484]

Once these alterations were completed, the ground floor of the hospital consisted of twenty-four wards of various sizes, fifty-two cells, and eleven enclosed yards. Staff could utilise the six overseers' rooms, five store-rooms, three kitchens, two washrooms, an office, and two ambiguous spaces labelled simply as 'rooms', while the superintendent was provided with his own quarters.[485] The surgeons were equipped with a dispensary, a surgery, and a dead-room fitted with a table and a large trough. Six blocks of privies appear on the plan, all external to the

[483] H. Melville, *Lithograph of New Norfolk Invalid Hospital* (1833), also at <http://catalogue.statelibrary.tas.gov.au/item/?id=655252> accessed 8 October 2010.
[484] Roger Kelsell, a soldier and engineer, was appointed to be Clerk of Works in the Ordnance Department of Van Diemen's Land in 1835 (*Australian Dictionary of Biography* (vol. 2, Melbourne University Press, Melbourne, 1967), pp 37-38; TAHO, *PWD: Plans (Plan of New Norfolk Invalid Hospital)*, (PWD 266/1/1432); Piddock, *A Space of Their Own*, p. 150).
[485] There is also one other room, labelled possibly as an 'oven' – the writing is difficult to decipher (TAHO, *PWD: Plans (Plan of New Norfolk Invalid Hospital)*, [PWD 266/1/1432]).

perimeter of the hospital. A chapel with a lobby was also proposed, but no records exist of its construction.[486]

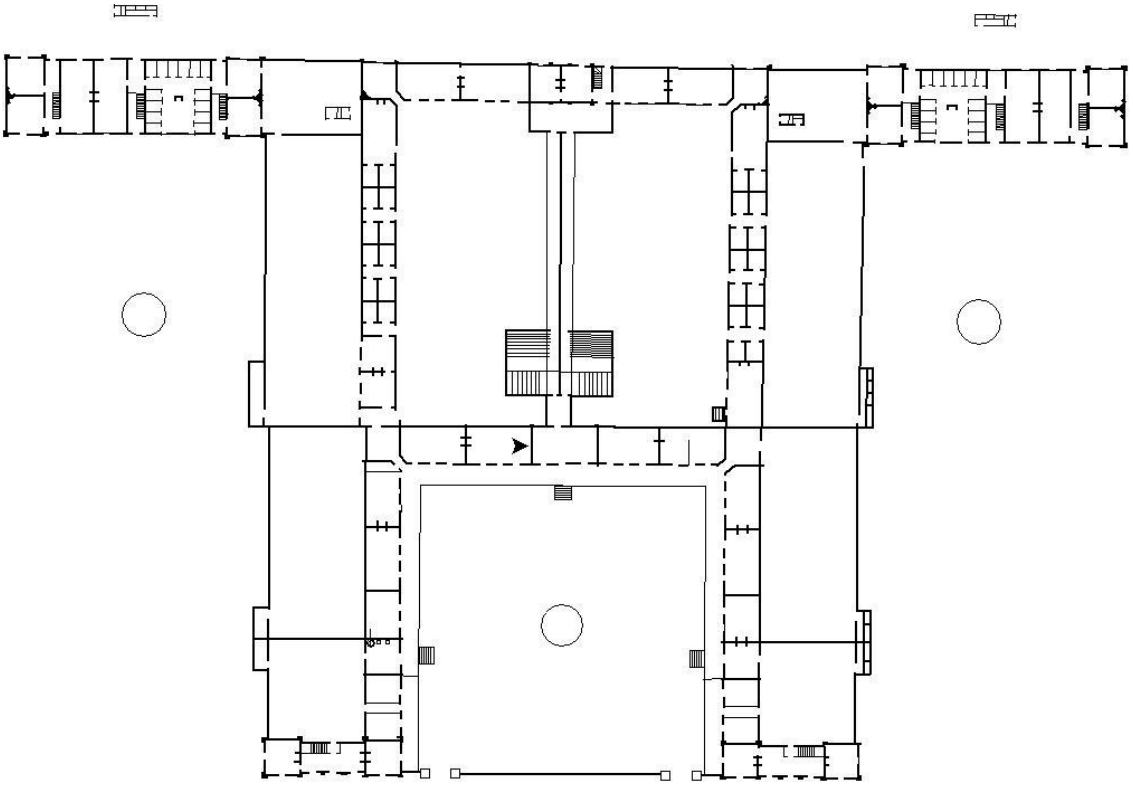

Figure 10: A plan of New Norfolk Hospital based on the 1836 plans drawn up by Civil Engineer Roger Kelsell. The front section accommodated the medical patients, while the rear section was reserved for the psychiatric patients, with the female cases occupying the left yard and the male patients the right. It can be seen from this plan that smaller cells were used for isolating psychiatric patients, while medical cases were accommodated in wards with fireplaces located between each set of rooms. Verandahs bordered the medical yard (which was unfortunate for patient Peter Patterson, who fell off this veransah, a height of three feet. Fortuitously, Patterson escaped with only "pain in the Knees.")[487]

These were the last alterations undertaken at New Norfolk Hospital while it remained a medical institution. The institution was evidently ignored for the following two decades, left utterly neglected with no maintenance undertaken to protect either the newly constructed extensions or

[486] It is not unusual that parts of a plan were not constructed. As discussed above, when St Bartholomew's was renovated, the plan allowed for part of the hospital to be completed at a time to allow it to be used while another section was constructed. Perhaps more commonly, plans were sometimes drawn up with no real intention of them ever being built. The convict hospital in Bermuda is one example of this; the two-storey hospital designed for construction on Norfolk Island in the late 1830s is another (F. Starr, 'Convict Artefacts from the Civil Hospital Privy on Norfolk Island', *Australasian Archaeology*, 19 (2001), p. 40).

[487] A photograph of the original plans was not included here, as it was too faint to be legible (TAHO, *Royal Derwent Hospital: Case Notes of Peter Patterson* [HSD 246/1/6/82]).

the original buildings from deterioration and decay. In 1848, the hospital ceased to admit medical cases and became solely a psychiatric institution.[488] When it was transferred from Imperial to Colonial authority in 1855, many badly-needed minor renovations were carried out with some urgency, simply to make the hospital functional. The ambiguous beginnings of the institution – was it a hospital, an asylum, an invalid depot? – may have contributed to its neglect.[489] Despite this general lack of care, however, New Norfolk Hospital nonetheless played a significant role in the care of the sick and vulnerable in Van Diemen's Land.

Royal Naval Hospital, Bermuda[490]

The establishment of a hospital in Bermuda similarly grew from a transient beginning into a permanent institution. While the general population of Bermuda had no hospital, from 1794 temporary buildings and hospital hulks accommodated sick soldiers, sailors, and (from 1823) convicts.[491] A jumble of impermanent structures was built to house the convict administration and any on-shore accommodation and facilities required for the prisoners. With no wider plan for the convict establishment, many of these structures rapidly outgrew their usefulness, becoming dilapidated and decayed in the humid environment of Bermuda.[492]

Construction of a permanent institution began in 1816 as part of an extensive programme of works designed to improve the naval facilities on the island.[493] Two years later, in 1818, the new Royal Naval Hospital opened on an elevated site along Lagoon Road on Ireland Island,

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[488] This thesis will focus on the period between 1827-1848, the phase during which the institution admitted medical cases. To attempt examination of both medical and psychiatric aspects of the hospital (both in terms of patient care and hospital architecture) would be beyond the scope of this research, but would be an informative task for future researchers, although Piddock has already undertaken valuable work in this area (see Piddock, *A Space of Their Own*; Crabbe, *History of Lachlan Park Hospital*, p. 22; E. Ratcliff and K. Kirkby, 'Psychiatry in Tasmania: From Old Cobwebs to New Brooms', *Australasian Psychiatry*, 9 (2001), p. 128).
[489] Burnham, 'The Royal Derwent Hospital', p. 163.
[490] As noted in Chapter one, nformation regarding the Royal Naval Hospital in Bermuda is scarce. .
[491] C. Hollis-Hallett, *Forty Years of Convict Labour: Bermuda, 1823-1863* (Juniperhill Press, Bermuda, 1999), p. 49; C. Lloyd and J. Coulter, *Medicine and the Navy, 1200-1900* (vol. 4, E. & S. Livingstone Ltd, Edinburgh, 1963), p. 254.
[492] Hollis-Hallett, *Forty Years of Convict Labour*, p. 79.
[493] R. Willcock, *Bulwark of Empire: Bermuda's Fortified Naval Base, 1860-1920* (self-published, New Jersey, 1962), p. 43.

Bermuda's northwesternmost island, appropriately overlooking Hospital Island. Although the elevated site of the institution was acceptably breezy, permitting a good flow of air through the institution, it unfortunately overlooked a stagnant lagoon.[494] For several years the area around the hospital bore the highest rates of yellow fever in Bermuda, with Deputy Inspector-General W.R.E. Smart expressing popular opinion in his assertion that "marshland and bad sanitation are the exciting causes" of the scourge.[495] The warmer Bermudian climate fostered the spread of diseases such as malaria and fevers, illnesses which were less frequently observed in the cooler climates of Van Diemen's Land and London. Surgeons commented that the warm, moisture-laden air of Bermuda caused animal and plant matter to ferment, issuing disease-causing material into the air.[496] In an attempt to disperse this stagnant air, a channel was dug to permit the tide to wash through the lagoon near the hospital, removing the miasmic stench and successfully clearing away the swarms of mosquitoes by eradicating their breeding ground.

The new hospital was a two-storey rectangular building (see Figure 11). Otherwise conventional in design, it was distinguished by a stylish but heavy dome, which was later removed as its weight was too much for the structure to bear.[497] Sections of the hospital were prefabricated in Britain and shipped to the islands, including cast iron verandah columns, floor joists and roof trusses, while local limestone was used for the stonework.[498] Although the indigenous materials fared well in the humid climate of Bermuda, the iron columns required frequent repainting, supporting wooden beams rotted away, and slate roof coverings blew off in every strong wind.

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494 C. Campbell, *The Intolerable Hulks* (Heritage Books, Maryland, 1994), p. 141; Lloyd and Coulter, *Medicine and the Navy*, p. 255.
495 W. Smart, unpublished paper on yellow fever in Bermuda, cited in Lloyd and Coulter, *Medicine and the Navy*, p. 189.
496 *Accounts and Papers of the House of Commons: Colonies* (vol. 37, 1855), p. 65.
497 Lloyd and Coulter, *Medicine and the Navy*, p. 254.
498 K. Forbes, *Bermuda Online Multinational: Bermuda's Hospitals*, at <http://www.bermuda-online.org/ kemh.htm> accessed 16 September 2008.

Figure 11: A section of an 1848 woodcut of Ireland Island, Bermuda. Convict hulks can be seen moored off the shore, and the large building at the right is the Commissioner's House. The white, two-storey building at the left is the Royal Naval Hospital.[499]

As at New Norfolk Hospital, sanitary facilities were limited. As late as 1840, Bermuda's Royal Naval Hospital had a single water closet, exclusively for the use of its higher-ranking officer patients.[500] All other inmates were relegated to the four outside privies. Separate wings for staff accommodation and additional wards for patients were added in later years, with one wing set aside for convict inmates.[501] This wing occupied the entire upper section of the hospital, and included the "exclusive use of the gallery" to ensure plentiful fresh air.[502]

This ostensibly generous allowance of space was actually a means of exerting additional supervision over the prisoners by corralling them in one easily observable area, away from other patients. Military patients in Bermuda (like their free counterparts in the Australian colonies) evidently resented occupying the same institution as penal patients; many decried this sharing of space, claiming that treating convict patients alongside naval and military men would "virtually suspend" prisoners' punishment, causing them to forget their lowly social and moral status.[503] By physically confining convicts to a clearly delineated section of the hospital and emphasising

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[499] *Woodcut of Island Island, Bermuda* (1848), at <http://www.bermuda-online.org/rnd.htm> accessed 9 October 2010.
[500] Lloyd and Coulter, *Medicine and the Navy*, p. 255.
[501] Lloyd and Coulter, *Medicine and the Navy*, p. 254.
[502] Hollis-Hallett, *Forty Years of Convict Labour*, p. 57.
[503] Hollis-Hallett, *Forty Years of Convict Labour*, p. 57.

their incarceration with intense surveillance, authorities ensured that other patients did not have to visibly share the same space. This plainly marked convict patients as different in an incontestably inferior sense. Such enforced separation also had the effect of preventing prisoners from associating with the nurses (who were predominantly local Bermudian women) while they tended their non-penal patients; convalescing prisoners would have acted as attendants for their acutely ill colleagues.[504]

Despite this apparently plentiful allowance of space, by 1848 the Royal Naval Hospital was overcrowded with convict patients.[505] When novelist Anthony Trollope inspected the institution several years later, he remarked that while the "hospital arrangements and attendance are excellent as regards the men's comfort…the ill-arrangement of the buildings is conspicuous, and must be conspicuous to all who see them."[506] Complaints were made that ill naval officers or their family members were being turned away as beds reserved for them were occupied by prisoners. There were also grumblings from authorities in Britain, who objected to the "enormous expense" of maintaining convict patients in a naval hospital.[507] As it belonged to a separate department and jurisdiction, the cost of managing sick prisoners in this manner was far greater than when the convict department was in charge of its own hospital, as it was in Van Diemen's Land.[508]

While a separate convict hospital would have neatly solved all these difficulties, it was not until 1857 that plans were drawn up for a penal medical institution in Bermuda.[509] However, authorities recognised that once the public works were completed, Bermuda would no longer be a practical destination for prisoners as there were few other forms of labour on the small group

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[504] Hollis-Hallett, *Forty Years of Convict Labour*, p. 57.
[505] Hollis-Hallett, *Forty Years of Convict Labour*, p. 57.
[506] A. Trollope, *The West Indies and the Spanish Main* (Harper and Brothers, New York, 1860), p. 376.
[507] Hollis-Hallett, *Forty Years of Convict Labour*, p. 58.
[508] Hollis-Hallett, *Forty Years of Convict Labour*, p. 58.
[509] Hollis-Hallett, *Forty Years of Convict Labour*, pp-50-60.

of islands suitable for large gangs of men. It was not considered economically efficient to construct a hospital when, within a decade, there would be no convict patients to fill the beds. The authorities were correct – within five years, the final remaining convicts were transferred from Bermuda and the penal station was closed.

Unfree Patients

Both penal and naval hospital buildings encompassed an innate contradiction which was unknown at civil institutions such as St Bartholomew's. The need for a built environment which simultaneously promoted healing and comprehensive surveillance often caused consternation, as architects and authorities vied to create a plan which offered both salubrity and security to its unfree patients.

For public hospitals, the first priority – tempered, as always, by considerations of economy – was undeniably the swift and effective treatment of illness. Healing, however, was not so simple for the patients of convict and naval institutions. While open space and fresh air were crucial to health, confinement – or, at the very least, enclosure – was a significant element in the accommodation of soldiers and prisoners.[510] As Evens wrote, "security required enclosure; salubrity required exposure and fragmentation."[511] That these dual purposes sat uneasily alongside one another is reflected in the difficulties of designing hospitals to suit patients whose very status was so ambivalent.[512] These institutions had to maintain high levels of security to prevent escape, but simultaneously guard against the poor ventilation and dangers of miasma

[510] Stevenson, *Medicine and Magnificence*, p. 174.
[511] Evens cited in Stevenson, *Medicine and Magnificence*, p. 174.
[512] Smith, 'The Architecture of Confinement' in Topp, Moran, and Andrews (eds), *Madness, Architecture and the Built Environment*, p. 43.

caused by gloomy enclosed spaces and impenetrable stone walls. While taking into consideration the space requirements of medical and surgical treatments, architects also had to prioritise ease of patient management and superintendence – and nowhere were control and observation more crucial than in a convict or naval hospital.[513] Indeed, one of the primary reasons Sydney's first permanent hospital was established was due to "the want of the ordinary means of preventing escape" from the earlier institution.[514] A new hospital offered the opportunity to construct a building which would provide "more secure detention of the sick."[515]

Particular care was taken to ensure patients' confinement to the hospital. This was an element of hospital design and architecture which also concerned the Royal Navy; accordingly, naval institutions such as Bermuda's were designed to provide the same security and isolation as afforded by a naval ship, but without the associated environmental defects which promulgated disease and death.[516] It was not simply a straightforward matter of ensuring that patients remained within the institution; the security was also a measure designed to exert a beneficial influence upon the physical (and moral) wellbeing of the inmates. The Commissioners for Sick and Wounded Seamen, responsible for the management and administration of naval hospitals, maintained that if patients could be isolated from the temptations of alcohol, promiscuity and gambling, their recovery would be hastened.[517]

The Superintendent of New Norfolk Hospital, and the authorities to whom he answered, were also frequently forced to balance the security of the hospital with the health and employment of their convict patients. The numerous enclosed yards incorporated within the institution permitted patients to be securely and continuously detained and monitored by overseers, but

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513 Taylor, *Hospital and Asylum Architecture*, p. 22.
514 J. Bigge, *Report of the Commissioner of Inquiry, on the State of Agriculture and Trade in the Colony of New South Wales* (1966 facsimile of original, published by The House of Commons, London, 1823), p. 105.
515 Bigge, *Report of the Commissioner of Inquiry*, p. 105.
516 Stevenson, *Medicine and Magnificence*, pp. 174-175.
517 Stevenson, *Medicine and Magnificence*, pp. 174-175.

compromised air flow and permitted foul odours to accumulate in stagnant corners. Some cells had open skylights instead of windows, limiting escape opportunities for its occupants, but providing little protection from climatic extremes.[518] These cells, although secure, were difficult to monitor as staff were obliged to traipse around the perimeter of the institution, peering inside through the peephole in each heavy door to ascertain the inmate's movements.[519] For the same reasons, they were also poorly suited as hospital accommodation.

In 1859, a Joint Committee appointed to inquire into conditions at the New Norfolk Hospital declared that the numerous high walls partitioning the institution acted to "impair the salubrity and injure the cheerfulness" of the hospital.[520] The Committee's recommendations bear evidence of their attempts to alter the hospital's environment into one more closely aligned with recovery than confinement. Among their suggestions were the construction of "pleasure and recreations grounds," the provision of day rooms, the demolition of cells, and the lowering or removal of stone walls (although some of these were to be replaced with railings).[521] Some of the Committee's recommendations were implemented rapidly, with progress made as early as 1861, while others were not carried out until the 1880s.[522]

Healing Hospitals

By the 1830s, when William Kerr was admitted to St Bartholomew's, hospitals had become central to society, with their roles extending far beyond care of the sick poor. Questions of isolation and quarantine impinged on trade and commercial interests, for example, while the

[518] Piddock, *A Space of Their Own*, p. 176.
[519] Gowland, *Troubled Asylum*, p. 38.
[520] Crabbe, *History of the Lachlan Park Hospital*, p. 25.
[521] Piddock, *A Space of Their Own*, p. 158.
[522] Piddock, *A Space of Their Own*, p. 160.

wretched conditions of the slums in which the poor lived and worked probed the charitable and philanthropic ideals of wealthy classes.[523] Such significant institutions demanded architecture which reinforced their social significance. Their design, however, had to be more than mere aesthetic display. Just as the treatments occurring within the buildings incorporated advancements in science and medicine, so too did the architecture of the hospital incorporate innovations.

While these innovations were easily distinguished in the built environments of urban British hospitals such as St Bartholomew's, they were less in evidence at colonial institutions. Although all three institutions were dependant on somewhat erratic sources of financial support, the London hospital was not constrained by the same level of bureaucratic complexity as the colonial institutions. The difficulties inherent in attempts to negotiate the multiple sets of government officials involved in the design, construction, renovation, and repair of colonial hospitals could confound even the most determined architects and surgeons. This accordingly acted to prevent the implementation of medical innovations in ventilation or surveillance, even when such advancements could benefit the patients or staff. It seems apparent that those working in and visiting the colonial hospitals, particularly in the case of New Norfolk, were aware that the conditions were inadequate in many respects and many actively sought to improve the built environments. Failings in ventilation, sanitation, heating and cooling were all subjects of letters directed to colonial and imperial authorities from surgeons, clergymen, and Vandemonian officials. Neither the colonial nor the imperial authorities, however, wished to outlay more funding for the institutions than was absolutely necessary; once the hospital had been built and fitted out (albeit parsimoniously), the government assured itself that a medical institution had been provided which was perfectly adequate for the needs of unfree patients.

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[523] Porter, 'What is Disease?' in Porter (ed.), *The Cambridge Illustrated History of Medicine*, p. 103.

In the early nineteenth century, as Foucault argued, hospitalisation entailed confinement as well as care.[524] The details of medicalisation – isolation, classification, supervision, physical examinations and copious note-taking; in short, physical and mental control by care-givers over patients – were also conducive to incarceration.[525] The patient's body was no longer their own, but a description, a diagnosis, a number laid bare (both physically and on paper) in a much more visible manner than the bodies of the upper classes.[526] Authorities sought to ensure the bureaucratic exposure of the troublesome – the destitute, the criminal, the insane – and to define and tame them using their bodies as "unalterable records."[527] Exactly what patients chose to present to authorities, however, could vary, with some choosing to assert their fragile autonomy by restricting or altering the body they presented for inspection.[528]

While this process of examination, identification, and classification was necessarily taken to a more extreme level at the Royal Naval Hospital in Bermuda and the New Norfolk Hospital in Van Diemen's Land, it was also apparent at St Bartholomew's Hospital in London. The conflicting needs for security and visual control of the patient on one hand, and the importance of unrestricted flows of air to the recovery of health on the other were clearly demonstrated in hospitals where patients were also prisoners. This tension between care and custody is reminiscent of that experienced at asylums.[529] Some surgeons believed that due to the conflict between the need to both secure and cure its unfree patients, such hospitals could never become ideal institutions in terms of the provision of curative medical treatment.[530] Moreover, an increasingly rigid and medicalised influence began to be exerted over the use of space both inside and outside hospital walls. By controlling the built environment, architects and hospital

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[524] M. Foucault, *Birth of the Clinic* (Routledge, London, 2005), p. 83; Sloane, 'Scientific Paragon to Hospital Mall', p. 82.
[525] Markus, *Buildings and Power*, p. 113.
[526] G. Morgan and P. Rushton, 'Visible Bodies: Power, Subordination and Identity in the Eighteenth-Century Atlantic World', *Journal of Social History*, 39 (2006), pp. 40-41.
[527] Morgan and Rushton, 'Visible Bodies', pp. 41-42, p. 50, p. 54.
[528] Morgan and Rushton, 'Visible Bodies', p. 55.
[529] A. Digby, 'Changes in the Asylum: The Case of York, 1777-1815', *The Economic History Review*, 36 (1983), p. 218.
[530] Piddock, *A Space of Their Own*, p. 156.

authorities sought to manipulate the natural environment, to influence patients' surroundings and thereby attain power – however tenuous and ephemeral – over disease.

Religious links to medicine and hospital care endured from the earliest times through into the nineteenth-century hospitals, predominantly due to the institutions' reliance (particularly in the case of hospitals such as St Bartholomew's) on the generosity of the rich towards the poor. Medical institutions, particularly those devoted to the care of the vulnerable, existed at a point of convergence of religious and social responsibilities. To provide financial or material assistance to such institutions could be advantageous in both spheres. The character of this generosity, however, had been somewhat altered over the passage of time, with the rise of humanitarian sentiments replacing – to some extent – Biblical notions of the rich tending selflessly to the sick poor. By sponsoring patients or serving as governors, the wealthy could both assuage their own consciences and meet a number of their social and moral obligations.[531] Such philanthropy came to be seen more as a means to secure a position in a profitable social network than as a shortcut to posthumous peace, with religious generosity replaced by secular benevolence.[532]

From as early as the fifteenth and sixteenth centuries, architects had begun to consider how hospital design could actively contribute to the speed of patients' recovery. Until the nineteenth century, however, hospitals were more often re-purposed private dwellings than purpose-built facilities.[533] The small rooms typical of these buildings were understood to protect against the promulgation of infection, but they made nursing difficult and, unless they had many windows,

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[531] MacDonald, 'The Infirmary of the Glasgow Town's Hospital', p. 95.
[532] It is worth noting, however, that such benevolence was not always entirely altruistic in motive. During the nineteenth century there was a growing awareness that diseases bred in the slums could spread to the wider population. To protect the health of the nation, enlightened health reformers maintained that it was crucial to improve the health of the lower classes (MacDonald, 'The Infirmary of the Glasgow Town's Hospital', p. 68).
[533] F. Smith, *The People's Health: 1830-1910* (Croom Helm, London, 1979), p. 259; Taylor, *Hospital and Asylum Architecture*, p. 54.

ventilation could be poor.[534] The provision of a calm environment and sufficient space to allow exercise and allow the free passage of fresh air assumed a great importance.[535]

By the early nineteenth century, the potential of architecture to contribute to healing and recovery was well-established. It was recognised that simple features of the built environment (such as the influence of softened light and muffled sound, in William Kerr's case) could be manipulated and become, of themselves, curative. A number of new design features increased in significance, with architects and hospital authorities focusing particularly on the control of air – heating it, cooling it, removing that which was infected and malodorous and replacing it with that which was clean and fresh. While economy and maximising the number of beds available remained important, the role of the built environment in assisting the recovery process became increasingly influential.

An examination of the built environments of the three hospitals which form the focus of this study has allowed a glimpse into the physical surroundings experienced by the patients of these institutions. More significantly, perhaps, such an analysis also reveals the impact of patients' accommodation upon their treatment. With hospitals serving as an important arena for debate on the means of disease transmission, hospital authorities were under pressure to provide evidence that their facilities would prevent the spread of disease and actively assist the curative therapy of their patients.

[534] Richardson, *English Hospitals*, p. 23, p. 25.
[535] MacDonald, 'The Infirmary of the Glasgow Town's Hospital', p. 83.

Chapter Four

Rates and Types of Disease

Byland Smith lay uneasily in a motionless hammock aboard the *Dromedary* hulk. Wracked with cramps and tormented with constant diarrhoea, the twenty-seven -year-old convict had sought the attention of Royal Naval surgeon Thomas Brownrigg. In the cramped sick bay, Brownrigg dosed his patient with castor oil, mercury, and chalk. Smith's purging ceased, only to be replaced by a constant ache in his chest. Brownrigg bled Smith until the pain eased and his pulse slowed, and for three days the case seemed to be progressing favourably. On the seventh of November, however, Smith's throat was dry and tender, and his bowels continued to purge. Brownrigg puzzled over Smith's symptoms as his patient grew progressively weaker, with fever causing "great prostration of strength."[536] With no further avenues of treatment available to Brownrigg,

[536] The National Archives, *Admiralty and Predecessors, Office of the Director General of the Medical Department of the Navy and Predecessors, Service Registers and Registers of Deaths and Injuries: Case Book, Royal Naval Hospital, Bermuda: Byland Smith* (ADM 104/98, p. 00152-00154).

Smith was sent ashore to the naval hospital, accompanied by a note expounding on the "obscurity" of his case.

Diagnosis of Disease

For surgeons such as Brownrigg in the early nineteenth century, it was not merely the cause or the treatment of illness which was shrouded in mystery. Diagnosis, too, was difficult, but as physiologist Marshall Hall wrote in the early nineteenth century, "The Diagnosis of Diseases constitutes the first part of the office of the physician."[537] The ability to label the afflictions of the sick, to name each pain, swelling and inflammation, underwrote the growing authority, knowledge and status of the medical practitioner. This process of identification allowed both patient and surgeon to define the experience of sickness, to delineate treatments and predict potential outcomes. Diagnosis thus acted as a guideline, directing knowledge of disease and the application of this knowledge. Additionally, as a form of communication and interaction between practitioner and patient, diagnosis mediated between practitioners' cognitive expertise and skills, and patients' more emotional and physical experiences.[538]

During this period, the process of diagnosis was analogous to the understanding of disease. Disease, as the manifestation of imbalanced humours, materialised differently in the unique constitution of each patient. These symptoms were variable, changeable, constant only in their fluidity. As practitioner John Robertson lamented, the "degree to which diseases are modified by constitution, season, climate and an infinite variety of accidental circumstances" rendered any attempt at a comprehensive system of diagnosis essentially specious.[539]

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[537] M. Hall, *The Principles of Diagnosis* (2nd ed., D. Appleton and Co., New York, 1834), p. 3.
[538] C. Rosenberg, 'The Tyranny of Diagnosis: Specific Entities and Individual Experience', *The Millbank Quarterly*, 80 (2002), p. 240.
[539] J. Robertson, *Observations on the Mortality and Physical Management of Children* (Longman, Rees, Orme, Brown, and Green, London, 1827), pp. 82-83.

Instead, doctors sought to base their diagnoses on the relative tangibility of patients' symptoms. At New Norfolk, Royal Naval and St Bartholomew's Hospitals, patients were routinely admitted with illnesses defined as cough, diarrhoea, paralysis, swellings, or sores.[540] Some practitioners, such as Samuel Jackson, contentiously averred that:

> Symptoms do not constitute in themselves a basis of sound or safe medical practice. They are the signs, addressed to the senses, of the abnormal state or sufferings of the organs, but do not instruct us, as to the nature of the change which has ensued, which constitutes the disease.[541]

This perspective was countered by practitioners such as medical writer and physician Lunsford Yandell, who maintained that "though dim enough at times, [symptoms] are our only guiding stars...there is nothing else to disclose to us the condition of our patient."[542] Yandell also wrote heatedly that "We must either dissect living bodies, practice by symptoms, or abandon our profession, and trust to nature."[543] Diagnosis relied upon the interpretation of visual signs of illness as well the use of touch, smell, and even taste to identify disease.[544] Scrutinising the gums, for example, might uncover signs of lead poisoning, such as those found in St Bartholomew's patient John Pert.[545] As Michel Foucault comments, such meticulous examinations offered doctors the opportunity to "map the disease in the secret depths of the body," based on the

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[540] Although defined as merely symptoms under modern medical knowledge, these afflictions were considered until the twentieth century to be diseases in their own right.
[541] S. Jackson, *Principles of Medicine, Founded on the Structure and Functions of the Animal Organism* (Carey and Lea, Philadelphia, 1832), p. xv.
[542] L. Yandell (ed.)a, 'Review of *The Principles of Medicine, founded on the Structure and Functions of the Animal Organisms*', *Transylvanian Journal of Medicine, and the Associated Sciences*, 5 (1832), p. 568.
[543]Yandell (ed.), 'Review of *The Principles of Medicine'*, , pp. 568-569.
[544] Diabetes, for example, could be diagnosed by tasting the urine, such as in the case of John Bailey, a patient at New Norfolk Hospital who, at the request of his surgeon, tasted his own urine to test for saccharine (Tasmanian Archive and Heritage Office, *Royal Derwent Hospital: John Bailey* (HSD 246/1/123); M. Foucault, *Birth of the Clinic* (Routledge, London, 2005), p. 202).
[545] St Bartholomew's Hospital Archives and Museum, St Bartholomew's Hospital, *Medical and Surgical Case Notes of Edward Latham Ormerod, Diseases of the Central Nervous System, Kidneys, Abdominal and Infectious Skin Diseases: John Pert* (MR 16/6/250)*;* H. Burton, 'On a Remarkable Effect upon the Human Gums Produced by the Absorption of Lead', *The Medico-Chirurgical Review and Journal of Practical Medicine*, 34 (1841), pp. 13-16.

symptoms which were externally accessible.[546] Understanding the body through examinations and observations took patience and practice. As physician John Eberle wrote:

> NOTHING so much distinguishes the experienced and truly well-qualified physician from the mere hap-hazard recipe doctor, and routinist, as the ability to estimate correctly, the import of symptoms; to trace their various relations with each other, and to determine from them the seat, nature, and extent of maladies. The number of those who are remarkable for accuracy in diagnosis, is always very small; for eminent proficiency in this respect can be obtained only by persevering observation and study, aided by a minute and comprehensive acquaintance with physiology and pathology.[547]

Practitioners on both sides of the debate, however, were also aware that relying upon symptoms alone to diagnose illness was a dangerous approach. It was vital to consider other important variables, such as "age, sex, moral and physical temperament, climate, occupation, habit of living, corporeal conformation, previous diseases, hereditary predisposition, and the character of the predisposing and exciting causes" when forming an accurate diagnosis.[548]

At the New Norfolk Hospital, surgeons followed meticulous guidelines when diagnosing their patients' diseases. These comprehensive guidelines, inscribed in the front of the hospital's case book, prompted practitioners to examine each patient thoroughly, probing every part of their body for clues to their ailment (see Table 3). Not only were their physical symptoms investigated, but their medical history, posture, attitude, and general appearance were also

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[546] How frequently practitioners actually carried out such comprehensive examinations is certainly questionable (Foucault, *The Birth of the Clinic*, pp. 166-167, p. 200).
[547] J. Eberle, *A Treatise on the Practice of Medicine* (4th ed., vol. 1, Grigg and Elliot, Philadelphia, 1838), p. 77 (capitalisation and grammar original).
[548] Eberle, *A Treatise on the Practice of Medicine*, p. 78.

scrutinised. Other physicians, such as John Eberle and Marshall Hall, also wrote detailed guidelines to assist practitioners in their diagnoses.[549]

History	Disease Date of admission General appearance Peculiar temperament Previous disease with dates and place Vaccinated or Inoculated Present Symptoms	Name Class Age Ship Country Trade
Animal Functions	Speech Delirium Memory Judgement Sensation Taste Smell	Sight Hearing Movement of the Muscles Articulation Sleep Countenance and Motion
Vital Functions	Pulse Heart's action Cough	Breathing Sighing
Natural Functions	Appetite Thirst Deglutition Bowels Dejections Skin	Expectoration Saliva Urine Urethra Uterus
Change of Visible Qualities	Excess of cruorine in the Blood Excess of serum in the Blood Too dark a colour of the Blood Too florid a colour An albuminous surface at the cruor of the blood A yellow serum Pallor of the Skin Preternatural weakness Blueness Yellowness Crackling noise on pressure	Dilation of the pupils Contracted pupils Tumefaction Fluctuation Grating of the bone Grating of the teeth A sound when tapped A wasting of the body A wasting of a part An increased size of the Body An increased size of a part
Uneasy Sensations	Pain, or uneasy feeling Anxiety Coldness	Shivering Heat Giddiness

Table 3: Guidelines for surgeons at New Norfolk Hospital, 1846[550]

[549] Eberle, *A Treatise on the Practice of Medicine*, pp. 77-102; Hall, *The Principles of Diagnosis*, pp. 25-37.
[550] TAHO, *RDH: Case Notes: Guidelines for Examinations* (HSD 246/1/1).

It was the role of the practitioner to equate each patient's unique symptoms with a definable disease; indeed, the identification (and the resulting treatment) of illnesses formed the primary aim of the discipline of medicine.[551] Entrenched in the humoural tradition of medicine, disease concepts could not exist outside the patient. Illness was an individual representation of each patient's unique constitution, and, as such, could not be transferred between cases. In the course of the nineteenth century, however, diseases came to be defined differently. Objective clinical signs were used to guide a practitioner's diagnosis rather than a patient's symptoms, which were increasingly disregarded and even belittled as subjective.[552] Smallpox, venereal disease and yellow fever came to be understood as infectious.[553] Epidemics of such diseases were attributed to unhygienic living conditions, to unwashed bodies living in close contact in grimy, airless dwellings. Prisoners living aboard poorly ventilated hulks, for example, were considered particularly vulnerable to outbreaks of fever.

Classification of Disease

In a medical discipline awash with vague symptoms defined by even vaguer terminology, practitioners (particularly students and those recently qualified) keenly sought a structured system of disease classification. The ordered nature of disease demanded an equally ordered categorisation of illnesses.[554] The urgency of this task intensified as did the growing mass of medical knowledge, with many practitioners feeling unable to utilise the new developments without a framework to support or contextualise their application.[555] Dissatisfaction with available classification systems led to a continual quest for a superior method for "collecting and

[551] A Correspondent, 'The Clinical Nomenclature of Disease and Perignosis', *British Medical Journal*, 1 (1870), p. 586.
[552] R. Porter, *The Greatest Benefit to Mankind: A Medical History of Humanity from Antiquity to the Present* (Fortuna Press, London, 1999), p. 313.
[553] Rosenberg, 'The Tyranny of Diagnosis', p. 242.
[554] Foucault, *The Birth of the Clinic*, p. 191.
[555] A Correspondent, 'The Clinical Nomenclature of Disease', p. 586.

communicating" this newfound information, whilst also integrating it with established knowledge.[556]

Any examination of hospital care and treatment of disease (or, indeed, any discussion of healthcare) in the nineteenth century must confront the difficulty of the scarcity of information regarding precise disease classification.[557] This difficulty is compounded by the challenge of utilising the original disease categories employed in hospital case notes without violating or altering their original meanings, but simultaneously ensuring that they remain intelligible to modern understandings of disease.[558] Even if a disease appears in both nineteenth-century and modern systems of disease classification, it is crucial not to simply assume that the same definition can be applied in both instances.[559]

The extent of medical and scientific knowledge during this period did not allow practitioners or their patients the comfort of definite diagnoses and certain prognoses. Instead, medical men used the available information – the appearance of the patient and the descriptions given to them of the illness – to speculate on what the complaint may be. The broad categories of nineteenth-century disease classification allowed a more flexible interpretation of exactly what characterised each condition, but even so, many practitioners were embarrassed and frustrated by the "various and hesitative language [they were] constantly compelled to employ" when diagnosing the ills of their patients.[560] For example, the names of a number of gastrointestinal conditions were used almost interchangeably to define illnesses characterised by diarrhoea and vomiting, although they

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[556] A Correspondent, 'The Clinical Nomenclature of Disease', p. 586.
[557] S. Cherry, 'The Role of a Provisional Hospital: The Norfolk and Norwich Hospital, 1771-1880', *Population Studies*, 26 (1972), p. 292.
[558] G. Risse, 'Hospital History: New Sources and Methods' in R. Porter and A. Wear (eds.), *Problems and Methods in the History of Medicine* (Croom Helm, Kent, 1987), p. 178.
[559] G. Alter and A. Carmichael, 'Classifying the Dead: Toward a History of the Registration of Causes of Death', *Journal of the History of Medicine and Allied Sciences*, 2 (1999), p. 131.
[560] A Correspondent, 'The Clinical Nomenclature of Disease', p. 586.

were originally intended to describe specific, discrete diseases.[561] Compounding these difficulties is the tendency to diagnose conditions based upon symptoms (as seen above, many hospital patients were admitted suffering from 'diarrhoea', 'cough', or 'fever') or in response to diagnostic 'fads'.[562]

Disease classification – the placement of diseases, as specific entities, within a systematic scheme of categorisation – is usually dated to Thomas Sydenham's seventeenth century work on *Acute and Chronic Diseases*.[563] Throughout the eighteenth century, a number of leading medical authorities puzzled over the relationships between the vast array of diseases which afflicted their patients, and the various symptoms which heralded their onset.[564] William Cullen's nosological arrangement, however, first published in the late eighteenth century, was perhaps the most widely-utilised model in Britain. Grouping disease into four main categories – *pyrexiae* (fevers), *neuroses* (nervous conditions), *cachexiae* (poor bodily condition and habits), and locales (local diseases) – Cullen based his arrangement on action of the traditional physiological functions (animal, vital and natural, as seen in New Norfolk Hospital's examinations guidelines in Table 3, above).[565]

Cullen's nosology supported the concept that the same disease could manifest itself differently in each individual, even if caused by the same external stimuli. Accordingly, it fostered the belief that different individuals, when exposed to the same external stimuli, could be struck with entirely dissimilar diseases. Advancements in anatomy and pathology, however, influenced the classification as well as the diagnosis of disease during the late eighteenth and early nineteenth

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[561] J. Cumpston, 'Public Health in Australia: Part II, the Second Period 1830-1850', *The Medical Journal of Australia*, 1 (1931), p. 594.
[562] Risse, 'Hospital History' in Porter and Wear (eds.), *Problems and Methods*, p. 178; Alter and Carmichael, 'Classifying the Dead', p. 126.
[563] T. Sydenham, *The Works of Thomas Sydenham, M.D., on Acute and Chronic Diseases* (vols. 1-2, G.G.J. and J. Robinson, W. Otridge, S. Hayes and E. Newbery, London, 1788); Alter and Carmichael, 'Classifying the Dead', p. 121.
[564] Alter and Carmichael, 'Classifying the Dead', p. 121.
[565] See W. Cullen, *First Lines on the Practice of Physic, including Definitions of the Nosology* (Bell and Bradfute, Edinburgh, 1816; Porter, *The Greatest Benefit*, p. 261).

centuries (pioneered, for example, by Italian Giovanni Battista Morgagni, Scot Matthew Baillie and Frenchman Marie Francois Xavier Bichat).[566] René-Théophile-Hyacinthe Laennec, inventor of the stethoscope, saw diseases as falling into two distinct categories – organic disease, which caused lesions in bodily organs (visible upon post-mortem), and nervous diseases, which left no permanent alteration in any organs.[567]

The next significant upheaval to disease classification in Britain arrived in the form of William Farr's work on mortality statistics and public health. Innovations in medical science informed Farr's pioneering observations, particularly those founded on advancements in pathology and anatomy.[568] Farr contended that by educating the lower classes about the beneficial effects of good hygiene, ventilation, sanitation, and the importance of preventing of over-crowding, their health would accordingly improve.[569] Bemoaning the chaotic and haphazard state of official disease and mortality classifications, which were still based on Cullen's nosological groupings, Farr complained that many diseases were "denoted by three or four terms, and each term has been applied to as many different diseases: vague, inconvenient names have been employed, or complications registered instead of primary diseases."[570]

Farr resolved his complaints by instituting his own system of disease classification, presenting his arrangement in 1855 to the International Statistical Congress.[571] In it, Farr grouped all epidemic, endemic and contagious conditions together as 'zymotic' diseases, with other conditions categorised according to bodily system or organs (such as nervous or integumentary systems,

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566 Porter, *The Greatest Benefit*, pp. 263-265.
567 Foucault, *The Birth of the Clinic*, p. 216.
568 Alter and Carmichael, 'Classifying the Dead', p. 116, p. 129.
569 Porter, *The Greatest Benefit*, p. 408.
Registrar General of England and Wales, *First Annual Report* (London, 1839) in *International Statistical Classification of Diseases and Related Health Problems* (2nd ed., World Health Organisation, Geneva, 2004). p. 148.
571 W. Farr, 'Vital Statistics' in R. Wall (ed.), *Mortality in Mid 19th Century Britain: Pioneers of Demography* (Gregg International, Farnborough, 1974), pp. 586-601.

respiratory, circulatory or digestive organs).[572] He also allowed for accidents, deaths from old age, and fatalities "of uncertain seat."[573]

Systems of disease classification such as those proposed by Cullen and Farr were widely utilised by surgeons from the late eighteenth to the mid-nineteenth centuries, despite the fact that they failed to keep up with developments in other areas of medical science. Although accurate identification of disease had progressed alongside pathology and anatomy, producing an immense catalogue of accurate clinical descriptions of illnesses, classification of illness had been left stranded without a systematic framework in which to be secured. This resulted in a farcical situation in which practitioners were theoretically and academically equipped with a vast catalogue of illnesses to assist them in diagnosing their patients' diseases, but were in practice unable to distinguish between many of them.[574] This situation became progressively more urgent as the medical discipline was torn between anchoring its nosology in the rapidly expanding branches of pathology and anatomy, or remaining within the safer, more traditional moorings of clinical, symptomatic diagnoses.[575] This uncertain state continued until medical theory was freed from the heavy ties of the humoural theory later in the nineteenth century, and the two systems of anatomical and clinical medicine were given the scope in which to function mutually, rather than competitively.[576]

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[572] Farr initially rejected germ theory and contagionism, citing the cause of this group of diseases as "unspecific manifestations of insalubrity." Later, however, he supported the concept of an organism which entered the body and multiplied, caused disease (Porter, *The Greatest Benefit*, p. 413).
[573] 'First Annual Report of the Registrar-General on Births, Deaths and Marriages in England, in 1837-8', *Journal of the Statistical Society of London*, 2 (1839), p. 271; P. Curtin, *Death by Migration: Europe's Encounter with the Tropical World in the Nineteenth Century* (Cambridge University Press, Cambridge, 1989), pp. 12-13; *Application of the International Classification of Disease to Neurology* (2nd ed., World Health Organisation, Geneva, 1997), p. 3.
[574] A Correspondent, 'The Clinical Nomenclature of Disease', p. 587.
[575] A Correspondent, 'The Clinical Nomenclature of Disease', p. 586.
[576] T. McKeown, *The Modern Rise of Population* (Edward Arnold, London, 1976), p. 63; W. Rimmer, *Portrait of a Hospital: The Royal Hobart* (Royal Hobart Hospital, Hobart, 1981), p. 35; A Correspondent, 'The Clinical Nomenclature of Disease', p. 587.

In Australia and Bermuda, practitioners pondered alterations to these nosologies to accommodate the impact of strange climates on health and the constitution. Different weather patterns altered the character and manifestation of diseases, and created entirely new conditions, such as colonial fever, sunstroke, and bush-mania.[577] Colonial surgeons sought to construct and stabilise "a new and puzzling order of body and environment," and to forge a salubrious relationship between settlers and their new surroundings by delineating the impact of one upon the other.[578]

In Britain, the climate also influenced the rates of various types of disease.[579] The warmest summer months of June, July and August saw high rates of most diseases, especially gastrointestinal, venereal, and infectious complaints. Dysentery, for example, was said to occur more frequently during "a cold and moist autumn succeeding a warm and dry summer."[580] Increased hospital admissions for cases of rheumatism, skin conditions, and diseases of the nervous system during spring and autumn were attributed to the fresh and crisp weather patterns experienced in these seasons . Bitter winter weather predictably brought higher numbers of respiratory and inflammatory conditions to hospital doors.

Regardless of climatic variations and geographic distances, however, the fundamental categories of diseases utilised by the three hospitals examined in this thesis were standardised by the use of a similar type of nosological arrangement. To enable comparison of rates of diseases between these institutions, patients within the sample group were classified into either surgical or medical

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577 W. Anderson, *The Cultivation of Whiteness: Science, Health and Racial Destiny in Australia* (2nd ed., Melbourne University Press, Melbourne, 2005), p. 21, p. 35.
578 Anderson, *The Cultivation of Whiteness*, p. 31.
579 W. Guy, 'An Attempt to Determine the Influence of the Seasons and Weather on Sickness and Mortality', *Journal of the Statistical Society of London*, 6 (1843), pp. 135-136.
580 Eberle, *A Treatise on the Practice of Medicine*, p. 235.

categories, according to their original diagnoses (see Chapter Five for details on cases of surgical diseases and conditions). Table 4, below, further categorises the medical patients into disease

Disease Type	New Norfolk Hospital, Van Diemen's Land, 1843-1848	Royal Naval Hospital, Bermuda, 1832-1835	St Bartholomew's Hospital, London, 1842-1848	Dragoons and Dragoon Guards, Great Britain 1830-1836[581]	Hobart Town Colonial Hospital, Van Diemen's Land, 1830-1831[582]	Port Arthur Hospital, Van Diemen's Land, 1830-1838[583]
Cutaneous	12	14	55	29	97	46
Circulatory system	18	6	213	1	20	17
Digestive system	79	308	146	98	254	305
Eye	293	37	6	19	42	25
Genito-urinary system	82	66	43	189	51	23
Musculo-skeletal system	161	95	30	50	200	93
Respiratory system	185	251	37	148	124	160
Infectious	9	144	73	78	117	55
Neurological-mental	120	58	348	6	69	101
Miscellaneous	41	20	49	44	27	173

Table 4: Medical disease types and rates per one thousand cases at the New Norfolk Hospital, the Royal Naval Hospital in Bermuda, St Bartholomew's Hospital, among Dragoon and Dragoon Guards, at the Hobart Colonial Hospital, and the Port Arthur Hospital[584]

type and incidence per thousand cases.[585] These categories were based upon Guenter Risse's study of the Royal Infirmary of Edinburgh, supported by contemporary classification systems

[581] 'Table A.1. Causes of Death and Hospital Admission' in Curtin, *Death by Migration*, p. 165.
[582] Scott, 'A Return of Medical and Surgical Diseases', p. vii-viii.
[583] 'Appendix 2: A Return of the Number of Diseases' in Ross, *Death and Burial.*
[584] This table includes only medical patients; see Chapter five for surgical patients.
[585] A full list of all diagnoses, and explanations of these, is provided in Appendix 2. Additionally, it must be emphasised that these rates are of hospital admissions, not deaths whilst in hospital.

such as Farr's.[586] Examining data in this manner allows contrasts to be made between rates of disease in patients admitted to New Norfolk Hospital, the Royal Naval Hospital in Bermuda, and St Bartholomew's Hospital. As a further comparison, three other groups of patients from similar time periods were also included in the analysis – dragoons and dragoon guards (1830-1836),[587] patients admitted to the Hobart Town Colonial Hospital (1830-1831),[588] and patients received at the Port Arthur Hospital (1830-1838) Van Diemen's Land.[589]

Cutaneous diseases

This small category encompassed skin conditions such as leprosy, anthrax, erythema, and paronychia.[590] Less than fifteen cases of skin conditions per thousand patients were admitted at both New Norfolk and the Royal Naval Hospitals, and fewer than twenty-nine per thousand among dragoons and dragoon guards, the number of cases jumped at St Bartholomew's (with ninety-seven cases per thousand patients), Port Arthur Hospital, and particularly at the Hobart Town institution.

Erysipelas was the most common cutaneous disease seen in the three hospitals, although only six cases were treated in all three institutions combined (two in the Royal Naval Hospital and four in St Bartholomew's).[591] Although grouped with the cutaneous diseases, erysipelas was understood to communicate with the underlying cellular tissue. It was unknown, however, whether the seat of the disease lay in the skin, "or whether the mischief fails to be rendered manifest in the substance of this structure till long after inflammation has been established in the parts

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586 Risse, 'Hospital History' in Porter and Wear (eds.), *Problems and Methods*, p. 179.
587 'Table A.1. Causes of Death and Hospital Admission among Dragoons and Dragoon Guards Serving in Great Britain, 1830-6' in Curtin, *Death by Migration*, p. 165.
588 J. Scott, 'A Return of Medical and Surgical Diseases Treated at H.M. Colonial Hospital, Hobart Town, Van Diemen's Land, for the Years 1821 to 1831', *The Transactions of the Provincial Medical and Surgical Association*, 3 (Sherwood, Gilbert, and Piper, London, 1835), p. vii-viii.
589 'Appendix 2: A Return of the Number of Diseases Treated at the Hospital at Port Arthur' in L. Ross, *Death and Burial at Port Arthur, 1830-1877* (unpublished Bachelor of Arts (Honours) Thesis, Department of History, University of Tasmania, Hobart, 1995).
590 For explanation of terms, see Glossary of Terminology and Glossary of Diseases and Conditions.
591 S. Plumbe, *A Practical Treatise on Diseases of the Skin* (Thomas and George Underwood, London, 1824), p. 373.

beneath."[592] Fourteen -year-old James Parsons, an iron-monger's lad admitted to St Bartholomew's Hospital, "to his unbounded surprise awoke [one] morning at his usual hour with his face so swelled that he could not see."[593] Diagnosed with erysipelas, he remained under treatment for several days. Despite the peeling skin on his face, Parsons was soon judged convalescent and was discharged to return to his labour.

Other skin conditions were caused and perpetuated, particularly in the colonies, by the rubbing of heavy, wet clothing on the skin as workers laboured through inclement weather or in the water. Conversely, some cutaneous diseases were aggravated by exposure to hot weather; erysipelas, for example, was recognised as increasing in incidence as the temperature rose.[594] Other diseases began as the wounds left after punishments, such as floggings or heavy chains biting into the skin around wrists and ankles (this may account for the high number of skin conditions seen at Port Arthur and Hobart Town). If left untreated, these gashes and abrasions frequently deteriorated into chronic ulcers (although these were admitted as surgical infections, and do not appear in Table 2).[595] Many of these skin conditions would have also been exacerbated, if not caused, by diets deficient in vitamin A.[596]

Diseases of the circulatory system

Circulatory diseases also comprised only a small proportion of cases admitted to the three institutions. The ratio of cases was dramatically skewed towards St Bartholomew's, where two hundred and thirteen cases per thousand patients were reported, in comparison with New Norfolk (eighteen per thousand cases) and the Royal Naval Hospitals (six per thousand cases).

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[592] Plumbe, *A Practical Treatise on Disease*s, p. 473.
[593] SBHAM, *SBH: James Parsons* (MR 16/6/500).
[594] J. Cumpston, 'Public Health in Australia: Part I, the First Forty-Two Years', *The Medical Journal of Australia*, 1 (1831), p. 496.
[595] See Chapter five for surgical diseases.
[596] J. Cleland, 'Morbidity and Mortality in the Convict Settlement at Port Arthur, Tasmania, from 1830-1835', *The Medical Journal of Australia*, 2 (1832), p. 349.

Reported admissions for circulatory disorders were also low at Port Arthur and Hobart Town Hospitals, and among dragoon and dragoon guards.

Dropsical affections, including anasarca, ascites, and a small group of other conditions, were by far the most commonly diagnosed circulatory disorder within the three hospitals. These conditions were characterised by the appearance of swelling caused by retained fluid engorging the cellular tissue just below the skin.[597] Initially, the swelling would only become apparent around the lower extremities; if the patient remained active during the early stages of a dropsical affection, the swelling would generally pass unnoticed or be of a lesser degree. If the sufferer was sedentary (perhaps bed rest had been recommended as part of their treatment), or if the condition progressed, the swelling would gradually extend upwards until the torso, upper extremities, and occasionally even the neck and head became affected.[598] Little urine was passed, "occasioned by all the watery parts of the blood running off into the cellular texture," and patients were generally struck by a voracious thirst.[599]

The marked bias at St Bartholomew's Hospital towards diseases of the circulatory system represents the interests of the author of the case notes, Dr Ormerod, who went on to write several well-known papers on diseases of the heart (a common symptom of which was the accumulation of excess fluid, such as that seen in ascites, anasarca, and dropsy).[600] The higher rate of patients admitted to the London hospital suffering from scarlatina (see Infectious Diseases, below), also tallies with the greater number of cases of various types of swelling – anasarca was commonly seen in patients who had recently suffered from scarlatina. As Eberle

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[597] Cullen, *First Lines on the Practice of Physic*, pp. 226-227.
[598] D. Zuck, 'John Snow and the Paracentesis of the Thorax', *The History of Anaesthesia Society Proceedings*, 30 (2002), p. 54.
[599] Cullen, *First Lines on the Practice of Physic*, p. 228.
[600] See, for example, E. Ormerod, *On the Pathology and Treatment of Valvular Diseases of the Heart and its Secondary Affectations* (Wilson and Olgivy, London, 1851); E. Ormerod, *A Review of the Present State of Cardiac Pathology* (Richards, London, 1864).

maintained, "There is, indeed, no acute disease which is so apt to be succeeded by dropsical effusions as scarlet fever."[601] Surgeon Edward Swarbreck Hall cites those "who have led irregular and excited lives" to be most susceptible to diseases of the circulatory system, particularly those of European origins.[602]

Diseases of the digestive system

Diagnostic confusion among medical practitioners limited the accuracy with which diseases of the digestive system could be identified.[603] Few defining features distinguished cholera, dysentery, enteritis, or colic from any of the other "derangements of the bowels" which plagued much of the population in the early nineteenth century.[604] Many practitioners concurred with the observation that "the symptoms which attend acute inflammation of the stomach are liable to great uncertainty."[605] As a result, they tended to be haphazardly grouped together, or identified according to each practitioner's particular understanding of the characteristics of these diseases. Some cases, however, were noted by surgeons as particularly interesting; Stephen Lowe, for example, presented at St Bartholomew's Hospital with a "very good case of enteritis."[606]

Enteritis and gastritis were classed as inflammatory diseases, different in their causes and prognosis when compared to other gastrointestinal conditions such as cholera. Gastritis was defined as an acute inflammation of the mucous membrane of the stomach, characterised by severe burning pain, vomiting, and either diarrhoea or constipation, depending on the organs implicated in the disease.[607] Enteritis, a similar disease, was described as the inflammation of the intestinal canal, and was generally confined to either the peritoneal and muscular layers of the

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601 Eberle, *A Treatise on the Practice of Medicine*, p. 483.
602 E. Hall, 'Epidemic Diseases of Tasmania', *Transactions of the Epidemic Society of London*, 2 (1867), p. 87.
603 Cumpston, 'Public Health in Australia: Part II', p. 594.
604 NA, *Case Book, Royal Naval Hospital, Bermuda: James Brown* (ADM 104/98, p. 00016); M. Dodson, *Disease: The Extraordinary Stories Behind History's Deadliest Killers* (Quercus, London, 2008), p. 45.
605 Eberle, *A Treatise on the Practice of Medicine*, p. 215.
606 SBHAM, *SBH: Stephen Lowe* (MR 16/6/360).
607 Eberle, *A Treatise on the Practice of Medicine*, p. 214.

intestines or the mucous membranes. In cases of the condition afflicting the mucous membranes, patients often suffered copious mucous and blood discharges, while constipation, vomiting, and aching abdominal pain were frequently experienced in cases which affected the peritoneal and muscular coats.[608]

To assist practitioners in differentiating between these inflammatory diseases and other conditions which provoked similar symptoms, medical textbooks provided meticulously detailed checklists of clues. The following suggestions from Eberle, for example, were written to elucidate the differences between enteritis and colic, which were:

> readily distinguished by the following signs:- In enteritis, the patient lies quiet on his back, moving himself as little as possible – in colic, he throws himself about almost continually. In enteritis, abdominal pressure aggravates the pain – in colic it often relieves it. In the former affection, the pain is continuous – in the latter it frequently intermits entirely for a short period. The skin, in enteritis, is hot and dry – in colic, it is seldom above the natural temperature and generally moist. In colic there is rarely any thirst – in enteritis almost always.[609]

Dysentery, too, was possessed of similar characteristics to gastritis and enteritis, as it was also considered to be disease in which the mucous membranes became inflamed. It was usually attributed to "obstructed perspiration from cold, or vicissitude of atmospheric temperatures."[610]

New Norfolk and St Bartholomew's Hospitals, and the dragoons and dragoon guards, reported moderate numbers of digestive cases; the Royal Naval Hospital in Bermuda, however, admitted over four times as many (three hundred and eight cases per thousand patients), with the Hobart Town and Port Arthur institutions not far behind. The impact of these diseases upon the

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[608] Eberle, *A Treatise on the Practice of Medicine*, pp. 224-225.
[609] Eberle, *A Treatise on the Practice of Medicine*, p. 226.
[610] Eberle, *A Treatise on the Practice of Medicine*, p. 235.

convict labour force in Bermuda was significant enough for authorities to brand them "the greatest and most formidable enemy in the progress of the works at Ireland Island."[611]

In both Bermuda and Australia, the dangerous combination of monotonous diets, close contact between prisoners in unsanitary conditions, hot weather, and dirty drinking water spelled disaster.[612] During the warmer weather of Summer and Autumn rates of gastrointestinal illnesses increased as clean water became scarce, with rivers drying up until they resembled a "series of stagnant ponds," capable of spreading digestive diseases at an alarming rate (see Figure 12).[613]

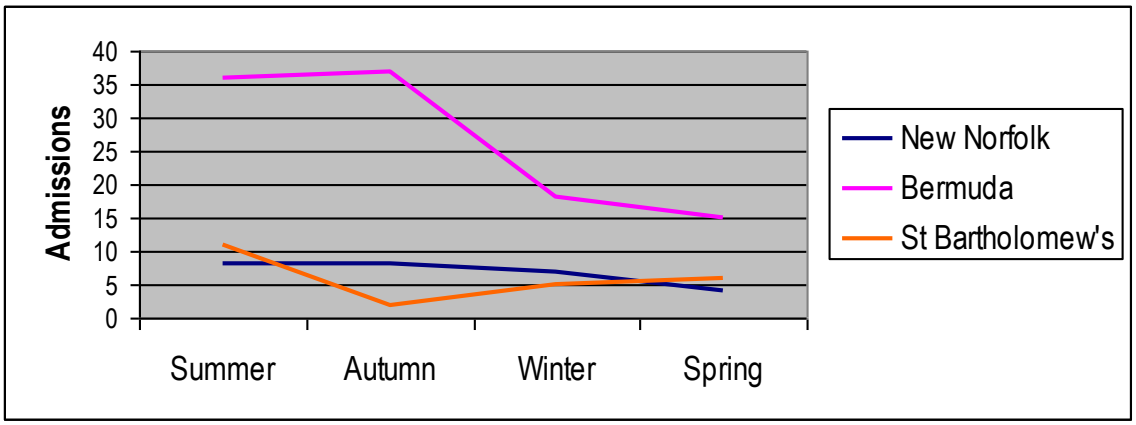

Figure 42: Rates of digestive diseases per thousand cases in New Norfolk Hospital, St Bartholomew's Hospital, and the Royal Naval Hospital in Bermuda, compared by season

It is possible that the lower rates of admissions for digestive diseases at New Norfolk and St Bartholomew's (and among dragoons and guards) are a result of differences in the administrative systems between hospitals.[614] Minor diarrhoeal complaints, which would resolve in a few days with a low diet and rest, could be effectively treated at home or in the smaller district hospitals. In Bermuda, aboard cramped, humid convict hulks or naval ships poised to return to sea, surgeons were more likely to consider their patients' symptoms to be serious and recommend

[611] C. Hollis-Hallett, *Forty Years of Convict Labour* (Juniperhill Press, Bermuda, 1999), p. 51.
[612] Cumpston, 'Public Health in Australia: Part I', pp. 495-496.
[613] Hall, 'On the Epidemic Diseases of Tasmania', p. 83.
[614] See Chapters two and three for more detail on admission procedures.

shore-based treatment. In the Royal Naval Hospital, these men would receive improved care in a quieter and better ventilated environment, away from the supposedly miasmic dangers of the boggy shoreline. The lower number of cases of digestive diseases admitted to St Bartholomew's may also have been influenced by the institution's stringent admission policies, which effectively barred patients understood to be suffering from infectious diseases.

Diseases of the eye

It was New Norfolk Hospital where the greatest number of patients suffering eye conditions was received; two hundred and ninety-three cases per thousand patients were admitted here, while less than forty-three per thousand were reported among the other groups of patients. Amaurosis and highly infectious ophthalmia accounted for all but one case between the hospitals (the single exception being a case of blindness in Bermuda).

Ophthalmia was generally recorded under a single diagnostic category, but it is probable that a variety of different conditions were grouped together under this label. Trachoma may have been the predominant cause of admissions to hospital for eye diseases, although the organism which caused this highly contagious disease would not be isolated until 1957.[615] In the 1860s two types of trachoma were identified: the endemic type, which was milder but frequently caused blindness among its victims, and the epidemic variety, which was more severe but of shorter duration.[616] Catarrhal ophthalmia was the most common variant, characterised by inflamed, painful, and watery eyes, with swollen and granulated eyelids – patients often described this sensation as akin to having grains of sand in the eye.[617] Although most minor cases resolved, severe infections were prone to causing chemosis or even bursting the cornea, causing rapid and irrevocable loss of vision. In contrast, rheumatic ophthalmia was generally confined to "the fibrous structures of

[615] R. Wood, 'Through the Eyes of Australian Colonists' in J. Pearn (ed.), *Pioneer Medicine in Australia* (Amphion Press, Brisbane, 1988), p. 108.
[616] Wood, 'Through the Eyes of Australian Colonists' in Pearn (ed.), *Pioneer Medicine*, p. 108.
[617] Eberle, *A Treatise on the Practice of Medicine*, p. 421.

the eye."[618] This type of infection was characterised by a painful sensation spreading from the eye socket across the face to the cheeks, jaw, ears and temples, and a gradual clouding of the aqueous humour and cornea.

The most violent and devastating of the ophthalmic complaints was the purulent variety, which was seen relatively frequently at the New Norfolk Hospital. All its symptoms were exaggerated – enormously swollen eyelids and conjuctivas bathed in a copious purulent discharge, exacerbated by a sharp, darting pain shooting through the globe of the eye and into the head.[619] This form of ophthalmia could cause rapid loss of vision, but as it did not often occur in such a severe form the most common outcome was the partial destruction of sight caused by a thickening or ulceration of the cornea. A fourth variety of ophthalmia, the scrofulous type, was characterised predominantly by extreme aversion to light and the agglutination of the eyelids upon waking in the morning. This type of eye condition was uncommon amongst adults and thus infrequently seen in the three hospitals in this sample.

The climate in both Bermuda and New Norfolk, and the particular types of labour undertaken by the convict workers are likely to contribute substantially to the high rates of eye conditions. For eyes accustomed to constantly gloomy daylight, the sun's rays blurred by urban pollution, the clear air of the colonies was intensely bright. In Bermuda, the destructive combination of the glaring rays of the sun reflecting off the white cliffs and glittering ocean and the abrasive clouds of coral and limestone dust contributed to cases of ophthalmia.[620] And there was always the unpredictable weather – James Campbell, for example, attributed his poor eyesight to being struck by lightning.[621] As noted by Royal Naval surgeon James Prowse, acute cases of this

[618] Eberle, *A Treatise on the Practice of Medicine*, p. 424.
[619] Eberle, *A Treatise on the Practice of Medicine*, p. 425.
[620] W. Branch-Johnson, *The English Prison Hulks* (Christopher Johnson, London, 1957), p. 166; C. Campbell, *The Intolerable Hulks: British Shipboard Confinement, 1776-1857* (Heritage Books, Maryland, 1994), p. 151.
[621] NA, *Case Book, Royal Naval Hospital, Bermuda: James Campbell* (ADM 104/98, p. 00282).

disease did "not proceed favourably on board" the convict hulks, forcing surgeons to send their patients to the shore-based hospital.[622]

In Van Diemen's Land, the dazzling sunlight and hot breezes (and the flies and mosquitoes which accompanied them) were said to carry ophthalmia, spreading it rapidly among the population, particularly in dry, dusty areas where grit was easily rubbed into the eyes.[623] For these reasons, rates of ophthalmia were highest during the warm months of summer (see Figure 13).[624] It is also possible that diets deficient in vitamin A contributed to some eye diseases, as they did to the rate of skin conditions. Despite its highly-infectious nature, ophthalmia did not occur in epidemic cycles but remained at a constant level, fluctuating with the seasons but increasing only as the population expanded.[625]

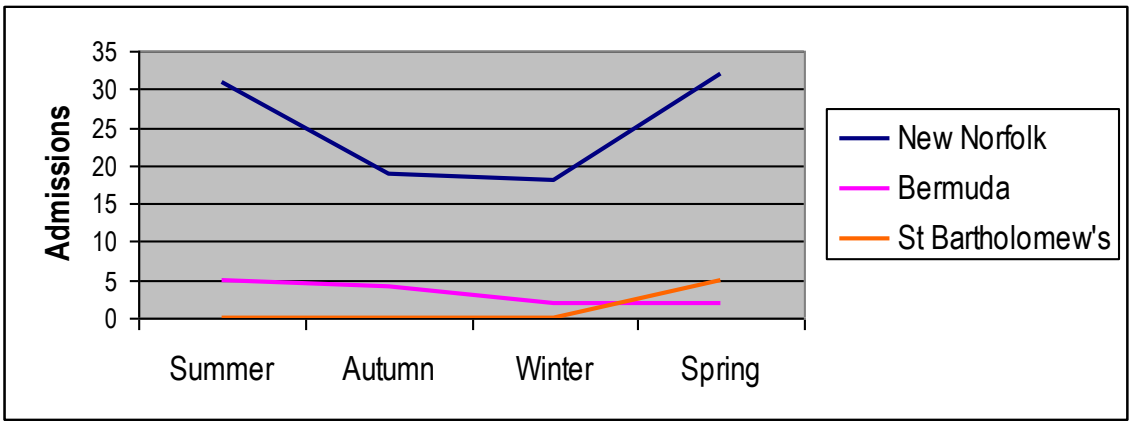

Figure 13: Rates of eye diseases (ophthalmia) per thousand cases in New Norfolk Hospital, St Bartholomew's Hospital, and the Royal Naval Hospital in Bermuda, compared by season.

Both acute and chronic cases of ophthalmia abounded at New Norfolk Hospital. Cases such as John Hughes, a strong and otherwise healthy twenty-six -year-old horse-breaker, illustrates the

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[622] NA, *Case Book, Royal Naval Hospital, Bermuda: Patient Case Notes* (ADM 104/98, p. 00324).
[623] Anderson, *The Cultivation of Whiteness*, p. 11.
[624] Cumpston, 'Public Health in Australia: Part 1', p. 496.
[625] P. MacFie and M. Bonet, *Convict Health at Port Arthur and Tasman Peninsula, 1830-1877: The Relationship between Diet, Work, Medical Care and Health* (unpublished paper written for the National Parks and Wildlife Service, Hobart, 1984), p. 36.

burden chronic cases placed on the convict medical department. One night in autumn 1843 while stationed at Lovely Banks, Hughes "went to Bed as well as he ever was in his life."[626] He awoke the following morning with his right eye swollen and irritated, and "about 5 or 6 days after the other was taken bad." After nine months of hospital treatment, Hughes was sent first to Jerusalem and then to the General Hospital in Hobart Town, before being received at the New Norfolk Invalid Depot. When his condition deteriorated further, having already been under medical care – and consequently not working – for over two years, he was transferred to the New Norfolk Hospital.

Diseases of the genito-urinary system

Venereal diseases, and their resulting impact on patients' general health, were a significant contributor to hospital admissions in both colonies. Symptoms of various venereal diseases were often diagnosed as entirely different conditions; for example, syphilis could cause varying degrees of neurological damage, resulting in the tremors and paralysis (see mental-neurological diseases, below) for which the sufferers were admitted to hospital.[627] It is impossible to estimate the extent to which this may have influenced the rates of diseases in various categories; however, as discussed above, to ensure the integrity of the data, it is crucial to retain each patient's diagnosis as reported by the surgeon.

The Royal Naval Hospital and New Norfolk Hospital saw between sixty-six and eighty-two genito-urinary patients per thousand cases, while St Bartholomew's saw just forty-three per thousand. This is largely attributable to the admission policy of the London institution, where those diagnosed prior to admission as suffering from a venereal disease were refused entry.[628] Accordingly, all cases admitted into St Bartholomew's were described as suffering from various

[626] TAHO, *RDH: John Hughes* (HSD 246/1/124).
[627] R. Willcock, *Bulwark or Empire: Bermuda's Fortified Naval Base, 1860-1920* (self-published, New Jersey, 1962), p. 137.
[628] See Chapters two and three for more detail on admission procedures.

kidney diseases, rather than venereal afflictions (although some conditions in this category, such as stricture, could result from venereal diseases, a fact which may have only been discovered once patients had already been admitted).[629] In comparison, all cases at the Bermudian institute and three-quarters of those at New Norfolk were admitted for venereal disease (the remaining twenty-five percent being diagnosed as suffering from kidney disease). Sixteen -year-old drummer Thomas Bailey, for example, applied to his surgeon with symptoms of gonorrhoea the very morning the ship was due to set sail (despite having suffered signs of the diseases for the preceding two weeks).[630] Of the comparative groups, it was the dragoons and dragoon guards who reported the highest rates of genitor-urinary disease, with one hundred and eighty-nine cases per thousand.

The kidney diseases admitted to St Bartholomew's and New Norfolk Hospitals were comprised of cases of nephritis, renal calculi, and other nonspecific renal conditions. Joseph Wilkie was admitted to the New Norfolk Hospital in early December 1846, complaining of pain in his lower back and an inability to pass urine.[631] Brock cupped and purged his patient, and applied blisters to the area over Wilkie's kidneys in an attempt to bring the morbid matter causing his illness to the surface. By the following day, Wilkie lay more easily in his bed; the aching pain in his back had eased, and he was able to pass his water more readily. Four days later he was still making excellent progress, but by the end of his first week in hospital, Wilkie had become agitated, tossing restlessly in his bed and complaining of a recurrence of the nagging back pain. Over the subsequent forty-eight hours, he slowly began to slip in and out of consciousness, before being declared "*in articulo mortis*" at three o'clock in the afternoon, ten days after his admission. When Brock opened his patient's body the following day, his diagnostic suspicions were confirmed – Wilkie's kidneys "were masses of disease the structure so destroyed as to render the internal part

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[629] J. Goddard, 'The Navy Surgeon's Chest: Surgical Instruments of the Royal Navy during the Napoleonic War', *Journal of the Royal Society of Medicine*, 97 (2004), p. 193.
[630] NA, *Case Book, Royal Naval Hospital, Bermuda: Thomas Bailey* (ADM 104/98, p. 00012).
[631] TAHO, *RDH: Joseph Wilkie* (HSD 246/4-6/13).

not recognisable. They were much enlarged presented a dark blue color [sic] and irregular surface."[632]

The urinary complaints admitted to the institutions were chiefly comprised of cases of stricture and retention of urine, which were considered "very painful and distressing complaints."[633] This group of admissions, however, was minor in comparison to the more substantial number of cases admitted to the colonial hospitals with venereal diseases. Syphilis, condyloma, and gonorrhoea were the most frequently reported conditions, although practitioners still could not agree whether the various symptoms of venereal diseases were the manifestations of a single disease (which produced different symptoms in each patient, thus appearing to be a distinct and separate illness), or whether each set of symptoms referred to a separate disease.[634]

Diseases of the musculo-skeletal system

The dominant disease in this category was that of rheumatism; indeed, in all hospitals, patients admitted with a musculo-skeletal complaint were almost exclusively suffering from rheumatism. This broad diagnosis, however, is likely to have included a diverse array of conditions characterised by aching joints.[635] Just thirty cases of musculo-skeletal disease per thousand patients were seen at St Bartholomew's Hospital, while the Bermudian institution admitted ninety-five per thousand cases and New Norfolk received one hundred and sixty-one per thousand (Hobart Town's rate exceeded even that of New Norfolk, with two hundred cases per thousand).

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[632] TAHO, *RDH: Joseph Wilkie* (HSD 246/4-6/13- HSD 246/4-6/14), [grammar original].
[633] E. Home, *Practical Observations on the Treatment of Strictures in the Urethra and Oesophagus* (3rd ed., vol. 1, W. Bulmer and Co., London, 1805), p. B.
[634] A. Colles, *Practical Observations on Venereal Disease and the Use of Mercury* (A. Waldie, Philadelphia, 1837), p. 1.
[635] Cleland, 'Morbidity and Mortality in the Convict Settlement', p. 349.

The increased occurrence of musculo-skeletal diseases in the colonies may be attributable to the harsher climates and more exposed conditions experienced by workers. Some practitioners also asserted that it was difficult for newcomers to adjust to strange colonial weather patterns, with aching bodies a direct result of new climates. The nagging coughs and niggling pains which resulted from illnesses such as catarrh and rheumatism would have been interpreted on a strongly individualistic basis. Convicts, many of whom were drawn directly from the working classes of London, would be much less likely to seek treatment for irksome symptoms unless they entirely precluded employment. As Digby argues, while "the prosperous might discern an ague in an ache…a poor person's stoicism in the face of severe bodily discomforts would have been hardened by penury."[636] Cheap, easily available home remedies would have been applied in place of seeking admission to hospital, where cases of catarrh or rheumatism would almost certainly be classed as chronic and incurable, and turned away. A similar explanation can also be attributed to the lower number of respiratory cases seen in St Bartholomew's Hospital, with people also reluctant to enter hospital with symptoms of a common cold or cough. These patients would also have been drawn from the middle to lower classes of British society, not the wealthy elite who could afford to indulge in specialised medical treatment at the first sign of a headache.

These generalisations require some clarification. In Bermuda and Van Diemen's Land, the greater availability of medical care may have induced convicts to seek professional medical attention sooner than they would have in Britain.[637] Indeed, the novelty of a constantly-available medical attendant would have been a luxury as well as a reassurance to many convict patients, and may have played a part in increasing the rates of admissions for complaints which were traditionally treated at home. This, however, highlights a second crucial point (which has already

[636] A. Digby, *Making a Medical Living: Doctors and Patients in the English Market for Medicine, 1720-1911* (Cambridge University Press, Cambridge, 1994), p. 85.
[637] In this context, 'professional' medical attention means that which was provided outside the home.

been briefly touched upon in Chapter Two). Through transportation these convicts had been removed from their traditional networks of family and friends, the customary source of support through hardship and ill health. Devoid of alternative assistance, sick prisoners had nowhere to turn for care *but* the colonial surgeon, even for minor cases such as influenza or rheumatism.[638]

Perhaps due to its distinct lack of life-threatening symptoms (the complaint was undoubtedly unpleasant, and for many it was miserably painful, but in isolation it was not a disease which could prove fatal), relatively little space in nineteenth-century medical textbooks was occupied by the affliction. Due to the frequency with which cases of rheumatism appeared, however, the basic types of rheumatism were well known to every medical man. Acute rheumatism, or rheumatic fever, was the most violent of the types. This form was characterised by dramatic pain, swelling and stiffness of one or more joints, coupled with fever and shivering.[639] Some patients appeared to suffer derangement of internal organs following an attack of rheumatic fever, but during the early to mid-nineteenth century, whether or not this was related to the initial illness was essentially unknown. As it was largely understood to be caused by exposure to a moist environment, such as "sleeping in damp beds, living within damp walls, sitting in damp clothes, or working in damp situations," the high rate of cases reported at New Norfolk is unsurprising.[640]

The application of heat or pressure aggravated the pain of acute rheumatism, but in cases of chronic rheumatism, warm blankets and poultices provided relief. This form of rheumatism was the most commonly observed variety, and was also typified by pain, swelling and stiffness of the joints, although without the fever which identified acute rheumatism. The chronic form of the disease was well-known for its obstinacy. Accordingly, the emphasis was on keeping the patient

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[638] Convicts were also exposed to more intense surveillance which may have identified those in need of treatment sooner.
[639] G. Gregory, *Elements of the Theory and Practice of Physic* (4th ed., Baldwin and Cradock, London, 1835), p. 301.
[640] Gregory, *Elements of the Theory and Practice of Physic*, p. 303.

as comfortable as possible, and allowing them to continue with their lives (depending on the severity of their symptoms), rather than on active treatment.[641]

The third form of rheumatism was that of rheumatic gout, defined as the inflammation of the synovial membrane of a joint. This form of the condition generally appeared in a single joint and remained there (unlike other forms of rheumatism, in which the pain moved from joint to joint around the body). Contention between practitioners arose over the distinction between rheumatic gout and arthritis, with some maintaining that the two terms denoted the same conditions, while others averred that the two were distinct and separate diseases.[642] The primary reason for distinguishing between the two conditions appears to be that the arthritic form responded more readily to localised physical treatments such as blistering and leeches, while in cases of rheumatism, medicines such as calomel were favoured.[643] It is probable that some cases of arthritis (including many which may have been diagnosed as a form of rheumatism) were associated with venereal disease, specifically gonorrhoea, a connection which was well-known by the nineteenth century.[644]

Diseases of the respiratory system

As with many other categories of diseases, respiratory diseases were often conflated and confused in diagnosis, rendering classification difficult and somewhat arbitrary.[645] Accordingly, few parallels occur between the rates of disease in the three institutions within the category of respiratory illnesses. Bermudian surgeon Dr James Leatham Clark, for example, was convinced

641 Gregory, *Elements of the Theory and Practice of Physic*, p. 308.
642 Gregory, *Elements of the Theory and Practice of Physic*, p. 304.
643 Gregory, *Elements of the Theory and Practice of Physic*, pp. 304-305.
644 G. Storey and D. Scott, 'Arthritis Associated with Venereal Disease in Nineteenth Century London', *Clinical Rheumatology*, 17 (1998), p. 500, p. 502.
645 A. Hardy, 'Diagnosis, Death and Diet: The Case of London, 1750-1909', *Journal of Interdisciplinary History*, 18 (1988), p. 392.

there "some mischief going on in the chest" of one of his patients, but was unable to provide a more specific diagnosis.[646]

Two hundred and fifty-one cases of respiratory diseases per thousand patients were admitted to the Royal Naval Hospital in Bermuda, while the New Norfolk institution reported one hundred and eighty-one per thousand and St Bartholomew's thirty-seven per thousand. These rates were below that of Bermuda, where admissions of between one hundred and twenty-four and one hundred and sixty per thousand were recorded. Catarrh was the most frequently reported condition admitted to the Bermudian hospital, although the second most common, bronchitis, was seen more frequently at New Norfolk and St Bartholomew's. Pneumonia, phthisis, haemoptysis (probably tuberculosis), and cough were also seen in greater proportions at the Bermudian hospital.

Influenza and catarrh, two of the most common respiratory complaints, were essentially the same condition. Defined as the inflammation of the mucous membranes of the nasal passages, both diseases were characterised by aching and heaviness of the head, fever, watering eyes, a hoarse throat, and increased nasal secretions.[647] Alongside these symptoms, influenza was also typified by a more extreme debility than that experienced in cases of catarrh, and was generally observed in epidemic levels. Debate raged about the possible causes of these conditions, with those endorsing the miasma theory encountering impassioned arguments from supporters of the contagion theory (see Chapter Three).[648] In isolation, catarrh and influenza did not generally prove fatal, but either disease could develop into more serious conditions such as bronchitis or pneumonia, particularly in the elderly or those prone to respiratory disorders such as asthma.[649]

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[646] NA, *Case Book, Royal Naval Hospital, Bermuda: Patient Case Notes* (ADM 104/98, p. 00136).
[647] Gregory, *Elements of the Theory and Practice of Physic*, p. 210.
[648] Gregory, *Elements of the Theory and Practice of Physic*, p. 211.
[649] Hall, 'Epidemic Disease of Tasmania', p. 82.

Asthma and similar underlying conditions could also be exacerbated by the colder climate of Van Diemen's Land, although the weather itself could not directly cause the development of influenza or colds (see Figure 14).[650] Additionally, rates of particular types of respiratory conditions, such as bronchitis, associated with thick, lingering fogs and low winter temperatures were higher among New Norfolk patients than in the other two institutions.[651] Despite this, rates of respiratory conditions at the Australian hospital remained relatively stable throughout the seasons. Conversely, while Bermuda enjoyed warmer weather, the cramped, enclosed conditions aboard the convict hulks, and the constant close proximity of the convicts as they worked, ate and slept in the humid environment, fostered the more rapid and wider spread of infectious respiratory conditions such as catarrh and cough. Accordingly, rates of respiratory disease were highest in the hot and humid conditions of autumn, rather than the clear heat of summer.

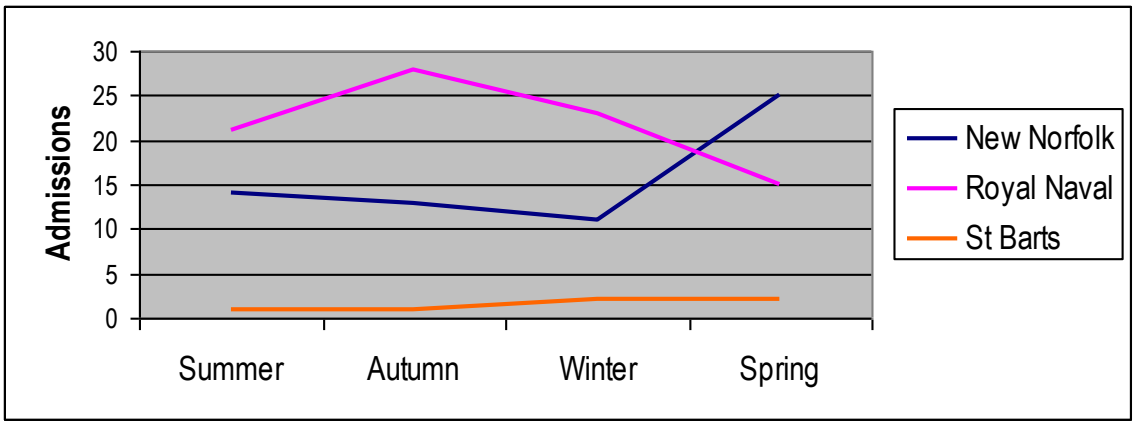

Figure 14: Rates of respiratory diseases per thousand cases in New Norfolk Hospital, St Bartholomew's Hospital, and the Royal Naval Hospital in Bermuda, compared by season

Convicts in Van Diemen's Land were generally accommodated in much smaller groups in huts, which were often very well 'ventilated', particularly on gusty autumn evenings and frosty winter nights. Other respiratory conditions, such as phthisis, were attributed to a constitutional

[650] J. Pearn, 'Sarah Island: The Infamous Prison Island in Macquarie Harbour, VDL' in J. Pearn and P. Carter (eds.), *Islands of Incarceration: Convict and Quarantine Islands off the Australian Coast* (Australian Society of the History of Medicine, Amphion Press, Brisbane, 1995), p. 12.
[651] Hardy, 'Diagnosis, Death and Diet', p. 394.

imbalance or an inherited predisposition (although this was often emphatically rejected by the sufferer's family).[652] James Cottrell, a twenty-six -year-old seaman, was "doing duty on the deck when his emaciated appearance" attracted the notice of Dr Isaac Wesley.[653] Wesley found that two of Cottrell's brothers had died of phthisis, and that despite suffering from pain in the side, laboured breathing, and a harsh cough Cottrell had not sought medical attention. Perhaps believing himself to be stricken with the disease that had inexorably carried away his brothers, he had preferred to deny his condition.

Phthisis, pleuritis, pneumonia, and bronchitis were among a more sinister group of respiratory conditions which frequently terminated in the death of the patient. Phthisis, also recorded in hospital notes as consumption or tuberculosis, was loosely applied to a cluster of respiratory diseases typified by a generalised emaciation of the patient's body.[654] Advances in anatomical pathology, however, allowed the delineation of a more precise definition of this condition. It was found that disease of the lungs was either the primary cause or the culmination of the process of illness in this group of maladies; accordingly, the various forms of the disease were defined as different types of pulmonary consumption.[655] After his extensive research into diseases of the chest, Laennec suggested confining the diagnosis of 'phthisis' to diseases characterised by the growth of tubercles in the lungs.[656] This proposal was adopted in France, but was less widely utilised in Britain and its colonies, where the group of conditions remained vaguely defined.

Bronchitis could also be abruptly fatal, particularly in the young and the elderly. It commenced with symptoms mimicking that of an attack of catarrh, with shivers, cough, and heaviness of the

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[652] Hardy, 'Diagnosis, Death and Diet', p. 395.
[653] NA, *Case Book, Royal Naval Hospital, Bermuda: James Cottrell* (ADM 104/98, p. 00152).
[654] J. Clark, *A Treatise on Pulmonary Phthisis* (Carey, Lea and Blanchard, Philadelphia, 1835), p. 9.
[655] Clark, *A Treatise on Pulmonary Phthisis*, p. 9.
[656] Clark, *A Treatise on Pulmonary Phthisis*, p. 10.

head and body.[657] As it progressed, however, breathing became oppressed and the airways congested with mucous. Pleuritis, too, was another frequently fatal respiratory disease. It was characterised by a severe pain in the chest, aggravated by breathing and coughing. Due to the increase of pain upon respiration, the patient generally stifled their inhalations as much as possible, breathing predominantly through the use of the muscles of the abdomen and the diaphragm.[658] While such measures may have provided the patient with a temporary respite, secretions would accumulate and thicken in the lungs if they were not expelled through coughing.

Infectious diseases

Fevers were traditionally attributed to an over-stimulated humoural system, often brought on through immoral and intemperate living.[659] Prisoners, assumed to be an inferior class of person, were therefore deemed particularly predisposed to infectious diseases. Indeed, the Medical Superintendent of Convicts, James Hall, declared that "no body of men are so susceptible to infectious fever as convicts, especially when confined in a prison hulk in a hot climate."[660] In the mid-eighteenth century, however, Dr John Pringle suggested that fevers may be a result not of "some peculiar elective affinity between sin and illness," but of the united injurious effects of poverty – poor ventilation, dirty water, deficient sanitation, and lack of knowledge of hygiene.[661]

General cases of fever fell into one of three types, with these broader groupings then split into more specific divisions. The first variety of fever was the periodic, which was divided into remitting and intermitting. These two fevers were similar both in symptoms and progression, with both exhibiting clearly defined phases – first the patient experienced a 'cold stage', with

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[657] Eberle, *A Treatise on the Practice of Medicine*, p. 336.
[658] Eberle, *A Treatise on the Practice of Medicine*, p. 305.
[659] B. Hilton, *A Mad, Bad and Dangerous People: England 1783-1846* (Clarendon Press, Oxford, 2006), p. 338.
[660] Cited in Hollis-Hallett, *Forty Years of Convict Labour*, p. 52.
[661] R. Evans, *The Fabrication of Virtue: English Prison Architecture, 1750-1840* (Cambridge University Press, Cambridge, 1982), p. 95; S. Cherry, 'The Hospitals and Population Growth: The Voluntary General Hospitals, Mortality and Local Populations in the English Provinces in the Eighteenth and Early Nineteenth Centuries (Part 2)', *Population Studies*, 34 (1980), p. 69.

shivering and lassitude, followed by a 'hot stage', during which great heat and thirst were experienced, with pain in the head and back, and lastly the 'sweating stage', when the symptoms of the fever dissipated and a perspiration occurred over the entire body (the 'breaking' of the fever).[662] The primary difference between the intermitting and remitting cases was the length and severity of their stages. The second type of fever was the continuing form, characterised, as its name suggests, by a constant, unremitting illness devoid of the remissions experienced in cases of the other types of fevers.[663] The third group of fevers encompassed the eruptive forms of the disease, such as smallpox, scarlatina, and measles.[664]

Predictably, the Royal Naval Hospital admitted a far greater number of cases of infectious diseases that the other two institutions. The infectious maladies seen in Bermuda consisted entirely of periodic or continuing fevers, as did the three admitted at New Norfolk Hospital.[665] Those reported at St Bartholomew's were slightly more diverse, reflecting the vastly greater population from which the institution drew its patients: six cases of scarlatina, two cases of smallpox, and two cases of purpura were admitted alongside the two instances of general fever.[666] The low numbers reported at St Bartholomew's Hospital reflect the deliberate control exerted over admissions to exclude infectious cases, primarily to prevent an uncontrollable outbreak within the institution. This exclusionary admission policy also acted to minimise the risk of infecting other hospital patients with epidemic diseases, leaving them vulnerable to secondary – and potentially fatal – illnesses. [667]

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662 Eberle, *A Treatise on the Practice of Medicine*, pp. 103-105, p. 129.
663 R. Thomas, *The Modern Practice of Physic* (4th ed., Longman, Hurst, Orme, Rees and Brown, London, 1813), p. 24.
664 J. Forbes, et. al, *The Cyclopaedia of Practical Medicine* (vol. 2, Lea and Blanchard, Philadelphia, 1845), p. 152.
665 Smallpox was common in Bermuda prior to the introduction of vaccination in the late eighteenth century, but rarely occurred after this (A. Verrill, *The Bermuda Islands* (self-published, Connecticut, 1902), p. 104; C. Harvey, 'Endemic Fever at Bermuda', *The British Medical Journal*, 2 (1890), p. 1172.
666 It is possible that purpura was in fact scurvy, characterised as it was by a blotchy rash on the skin (Hall, 'Epidemic Disease of Tasmania', p. 85).
667 Cherry, 'The Role of a Provisional Hospital', p. 304.

In 1837 and 1843, prisoners' particular vulnerability to fever was demonstrated when the convict population of Bermuda suffered the highest rates of infection (other than hospital staff) during epidemics of yellow fever centring at Ireland Island.[668] William Smart, Deputy Medical Inspector-General of the Royal Naval Hospital in Bermuda, attributed this vulnerability to the prisoners' "disadvantageous circumstances connected with hospital accommodation" in comparison with naval personnel, who exhibited a lower rate of infection.[669] In a particularly severe epidemic in 1853, the hospital ship *Tenedos* became the focus of the epidemic, with many patients who were initially hospitalised with other diseases soon fatally contracting yellow fever.[670] Of the one thousand six hundred convicts employed in Bermuda at the time of the epidemic, one hundred and fifty-two died.[671]

Despite these figures supporting conclusions to the contrary, the importance of removing uninfected people from epidemic zones was, however, well understood. Hospital surgeons recommended the swift removal of ships of war as far as possible away from the shoreline, and censored communication between the two areas.[672] It was considered particularly important to protect those newly arrived in the colony from exposure to fever, as they were deemed to be especially vulnerable to fatal attacks of the disease. This was based on the assumption that those who survived a 'seasoning sickness' would then be acclimatised (and become gradually more so over time) and therefore relatively resistant to diseases common to the area.[673] To prevent the dangers of exposing unacclimatised soldiers and sailors to the perils of the Bermudian climate, authorities tended to retain the same group of men in one location for ten years or more. Over time, however, this theory was challenged by evidence which suggested that mortality in fact rose

668 W. Smart, 'Yellow Fever Epidemics of Bermuda', *Transactions of the Epidemiological Society of London*, 2 (1867), p. 33.
669 Smart, 'Yellow Fever Epidemics of Bermuda', p. 44.
670 Smart, 'Yellow Fever Epidemics of Bermuda', pp. 55-56.
671 Verrill, *The Bermuda Islands*, p. 100.
672 W. Smart, 'On the Successive Epidemics of Yellow Fever in Bermuda during the Present Century', *The British Medical Journal*, 2 (1863), p. 98; Smart, 'Yellow Fever Epidemics of Bermuda', p. 35.
673 Curtin, *Death by Migration*, p. 45.

with each additional year of overseas service.[674] A system of rotation was proposed, meaning troops would spend no longer than three years in tropical stations; Bermuda, however, being a sub-tropical post, was utilised as a 'seasoning station' where men would be assigned before service in humid, tropic locations.[675] This scheme was soon abandoned, however, when statistics revealed that mortality increased over time in troops stationed in Britain as well as the tropics.[676] Land-based personnel were routinely evacuated to higher ground during times of epidemics, on the understanding that more moderate climates prevailed at higher altitudes (the lack of habitat for hosts of infectious diseases – such as mosquitoes – at such altitudes may have been more influential in lowering rates of infection, although the concept of insects as vectors of disease was not yet accepted).[677]

Unlike Bermuda, the climate of the Australian colony was believed to discourage the epidemic spread of infectious diseases. Many of those contagious diseases common in Britain were rare, even unknown, in Van Diemen's Land, particularly during the first few decades of settlement when population numbers were low.[678] During this period, most convicts and settlers had ready access to clean water and a relatively nutritious diet. Furthermore, the colony's population was protected from infectious diseases by the long voyage between Britain and the colony, during which any infectious diseases present on board could run their course and rapidly peter out due to the lack of vulnerable humans aboard ship.[679]

If any form of contagion did manage to reach the shores of Van Diemen's Land, the cooler weather patterns of the colony were considered to be "antagonistic to the spread of febrile

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[674] *Statistical Report on the Sickness, Mortality and Invaliding Among the Troops* (W. Clowes and Sons, London, 1838), p. 84.
[675] Curtin, *Death by Migration*, p. 45.
[676] Curtin, *Death by Migration*, p. 45.
[677] Curtin, *Death by Migration*, p. 47.
[678] J. Boyce, *Van Diemen's Land* (Black Inc., Melbourne, 2009), p. 64.
[679] Boyce, *Van Diemen's Land*, p. 64.

diseases."[680] Measles, for example, was not recorded in the colony until 1854 and no cases of smallpox had been detected by the mid-1860s.[681] While scarlatina periodically appeared in epidemic form, cases of the disease were generally mild and seldom fatal.[682] Even in Van Diemen's Land, however, pockets of fever nonetheless occurred "where the local defects of sewerage, accumulations of filth, etc., can engender it."[683] According to Crowther, the colony was particularly prone to "Bilious Fevers of a Typhoid character, not contagious nor epidemic, in which, with the derangement of the Hepatic Functions, the Brain and Nerves are principally affected, and whence Coma and Delirium close the fatal scene."[684] The peak of the small number of cases generally occurred during cooler weather.[685]

Hobart Town's urban setting may have contributed to its high rate of digestive cases, coupled with the admission of 'difficult' or severe cases from other hospitals around the colony. Additionally, as the colony's main medical institution was located close to the dockyards, convict and immigrant patients suffering infectious diseases were frequently received direct from ships. These complaints were often spread to other patients already in hospital, and were also occasionally communicated to those outside the institution. In mid-1839, for example, the *Marquis of Hastings* arrived in Hobart Town carrying two hundred and forty male convicts.[686] A number were hospitalised with fever shortly after their arrival. The consequences of this were akin a pond into which a stone has been tossed, where the impact of the rock causes ever-widening ripples through the water. The original group of patients had already infected other convicts in the penitentiary before their own admission to hospital. The secondary group passed the disease on to other prisoners from the probation station and in private service, who then,

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680 Hall, 'On the Epidemic Diseases of Tasmania', p. 76.
681 Hall, 'On the Epidemic Diseases of Tasmania', pp. 70-71.
682 Hall, 'On the Epidemic Diseases of Tasmania', p. 72.
683 Hall, 'On the Epidemic Diseases of Tasmania', pp. 75-76; Cumpston, 'Public Health in Australia: Part I', p. 495.
684 W. Crowther, 'Of the Typhoid Character and Treatment of the Bilious Fever of this Colony', *Hobart Town Gazette* (9 June 1826), cited in W. Crowther, 'Some Aspects of Medical Practice in Van Diemen's Land, 1825-1839', *The Medical Journal of Australia*, 1 (1935), p. 515.
685 Cumpston, 'Public Health in Australia: Part I', p. 496.
686 Hall, 'On the Epidemic Diseases of Tasmania', pp. 77-78.

supplemented by the arrival of another vessel bearing feverish convicts, in turn continued to broaden the pestilential cycle. By May 1840, the Hobart Town Colonial Hospital was forced to rent an additional building to accommodate their increasing caseload. Rural localities such as New Norfolk, however, were spared this inevitable spread of infectious diseases. In areas in which "people enjoy ordinary domestic advantages," cases of contagious conditions were infrequently reported.

Neurological-mental diseases

This large and diverse category encompasses diseases ranging from hysteria to chorea, from neuralgia to tetanus. St Bartholomew's Hospital admitted the largest number of neurological-mental diseases, with the most frequently reported being forms of paralysis, followed by cases of epilepsy. New Norfolk also admitted a relatively large number of cases of paralysis and epilepsy, with *cephalgia* and *apoplexia* forming much of the remainder of their neurological-mental admissions. In Bermuda, a relatively high number of patients were admitted with *cephalgia*, while only a small proportion were received complaining of paralysis or epilepsy. The rates of the three comparative groups were all below one hundred and one cases of neurological-mental diseases per thousand.

The sheer diversity of this category of diseases renders it difficult to draw conclusions regarding the relative frequency of cases between hospitals.[687] Paralysis, for example – the rate of which is high in New Norfolk and St Bartholomew's Hospitals but virtually non-existent in Bermuda – is attributable to so many different conditions that it is all but impossible to draw any but the most tenuous deductions about why the rate may be higher in one hospital than another. Everything from apoplexy, tumours, and various forms of pressure on the brain and spine were considered

[687] Curtin, *Death by Migration*, p. 78.

precursors to paralysis, alongside syphilis, lead poisoning, nutritional deficiencies, and even worms.[688]

Other diagnoses classified as mental-neurological disease were equally tenuous. Forty -year-old entrepreneurial barrister Charles Daling was admitted to St Bartholomew's Hospital suffering from nervous exhaustion after his outlandish proposal for improving the system of electric telegraphs failed. When the unspecified "chemicals" he purchased to use in his scheme were "upset" during their journey from Dublin to London, "the circumstance so preyed on his mind that he became violently delirious and so died in the course of the next 10 days."[689] Another St Bartholomew's patient, William Harper, was diagnosed with incoherency, although Ormerod contemplated reclassifying his condition as dementia, being uncertain whether or not it was "connected with any organic derangement of the brain."[690]

The climate was often remarked upon in cases of mental-neurological disease. "Sudden exposure to cold" was understood to contribute to attacks of paralysis, while overly hot conditions were associated with convulsive disorders.[691] High temperatures were also regarded as dangerously draining for even the most robust constitution, and the most vigorous nervous systems were apt to lapse into exhaustion and irritability when over-exposed to the intense sunshine of the colonies.[692]

Miscellaneous medical conditions

This final category includes a small number of conditions which do not fit neatly into any other categories, such as *delirium tremens* and debility or old age. Although no patients diagnosed with

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[688] H. Ellis, *Studies in the Psychology of Sex: Sex in Relation to Society* (vol. 6, Plain Label Books, 1927), pp. 535-536, also at <http://www.gutenberg.org/etext/13615> accessed 4 March 2010; Ross, *Death and Burial*, p. 47.
[689] SBHAM, *SBH: Charles Daling* (MR 16/6/206).
[690] SBHAM, *SBH: William Harper* (MR 16/6/193a).
[691] Eberle, *A Treatise on the Practice of Medicine*, pp. 30-47.
[692] Anderson, *The Cultivation of Whiteness*, pp. 24-25.

delirium tremens (the official diagnosis for illness induced by alcohol) were seen at the New Norfolk Hospital, both the Royal Naval and St Bartholomew's Hospitals admitted several cases.[693] This number included James Thomas, "a large fat man very intemperate" who "used to drink aether and among other feats he had drunk a gallon of gin in 3 days and a bottle of brandy during a night," but did not take account of poverty-stricken clergyman William Edward Marshall, who was admitted with dysentery after attempting to assuage his "most insatiable thirst…by [drinking] large quantities of spirits."[694]

The rates were reversed for debility, with a significant number of cases admitted to New Norfolk, a smaller proportion to the Bermudian institution, and none to St Bartholomew's. In London, frail elderly cases requiring the 'comfort' – but not the medical care – of a hospital, would be sent to the sick ward of the local workhouse. Colonial patients, however, had no such option. Instead, the wards of invalid depots and hospitals such as New Norfolk were crowded with chronic cases such as that of William Gibbons, a seventy nine -year-old convict initially admitted with fractured ribs. Although he recovered from his injury after a few months of treatment, he remained in the hospital suffering "only of old age" until his death two and a half years later.[695]

Although there was a single case of scurvy in a patient admitted to New Norfolk Hospital, Port Arthur reported an astounding one hundred and seventy three cases of this nutritional deficiency per thousand patients. It is possible that cases of scurvy were simply admitted under a different diagnosis in other institutions (such as chronic skin conditions), or, although unlikely, perhaps

693 Willcock, *Bulwark of Empire*, p. 104.
694 SBHAM, *SBH: James Thomas* (MR 16/6/176)*;* SBHAM, *SBH: William Edward Marshal* (MR 16/6/401).
695 TAHO, *RDH: William Gibbons* (HSD 246/1/122).

convicts assigned around the district of New Norfolk may have been receiving a sufficiently nutritious diet to ward off scurvy, while those at Port Arthur had a less nourishing diet.[696]

(Re)defining Diagnosis

As pathology began to expose the role of internal lesions in illness, and to reveal clearer patterns and similarities in the prognoses and outcomes of patients diagnosed with the same condition, diseases could be articulated and embodied outside the person. Fundamental concepts of disease were revised. The patient's experience of illness and the practitioner's understanding of abnormal pathological findings came to be unequally weighted: when disease could be conceptualised as external to the patient, as existing as an entity outside him or her, the patient was no longer central to definitions of disease. Illness became less about human experience, individual narrative and personalised diagnosis, and more connected to objectified notions of ideal clinical pathways, measured in neat, compartmentalised units rather than chaotic, emotion-fuelled patient descriptions. Indeed, as Foucault asserted, the patient came to be viewed as "a negative element," a mere "accident" which polluted the natural state of the disease – to arrive at an accurate diagnosis, all elements which made a case unique had to be subtracted, leaving behind only the pure facts of the illness itself.[697] In this manner, the symptoms, diagnosis, and prognosis of an ever-expanding number of "legitimate diseases" were painstakingly mapped out, complete with elaborate networks of possible atypicalities, stranding patients on the periphery of their own disease.[698]

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[696] See, for example, Cleland's citing of the one thousand and fifteen cases of scurvy treated in the Port Arthur Hospital between 1830-1835 (Cleland, 'Morbidity and Mortality in the Convict Settlement', p. 348).
[697] Foucault, *The Birth of the Clinic*, p. 15, pp. 70-71, p. 101.
[698] Rosenberg, 'The Tyranny of Diagnosis', p. 243.

In the analysis of disease, it is crucial that historians seek to utilise the meaning of diagnoses as they were used by the surgeon. Overlaying eighteenth and nineteenth-century terminology with modern connotations can distort both individual narratives and collective statistics.[699] This examination of admission rates has endeavoured to preserve the diagnostic categories used by surgeons and physicians at the New Norfolk Hospital, the Royal Naval Hospital in Bermuda and St Bartholomew's Hospital in London, and present them in a comparative framework. In doing so, it can be seen that the disease rates at each hospital represent that institution's unique combination of demographics, climate, diet, and other influential factors.

Dietary deficiencies, for example, undoubtedly contributed in various ways to a proportion of diseases in each category. Ironically, the meagre rations supplied to invalids and hospital patients in an effort to discourage malingerers may have prolonged recovery time by further weakening patients' bodies.[700] The intensity of the occupational, climatic and geographical conditions these patients were exposed to on a daily basis – particularly in the colonies – may have also negatively impacted their constitutions, limiting their ability to resist and recover from disease.[701]

A further factor influencing rates of disease in the two colonies centres on the more relaxed transportation guidelines which regulated selection of convicts bound for Van Diemen's Land. While chronic medical conditions, physical disability, and old age were no barrier to transportation to the Australian colony, only convicts who were "in perfect health, and are declared by the surgeon to be of sound constitution," were selected for labour in Bermuda.[702] This may have resulted in a larger number of convicts with pre-existing or chronic diseases

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699 Alter and Carmichael, 'Classifying the Dead', p. 131.
700 A discussion of the rations provided to hospitals patients in all three hospitals in comparison with those available outside the institutions would be beyond the scope of this thesis.
701 Cleland, 'Morbidity and Mortality in the Convict Settlement', p. 350.
702 B. Earnshaw, 'The Lame, the Blind, the Mad, the Malingerers: Sick and Disabled Convicts within the Colonial Community', *Journal of the Royal Australian Historical Society*, 81 (1995), p. 28; C. Hollis-Hallett, 'Bermuda's Convict Hulks', *Bermuda Journal of Archaeology and Maritime History*, 2 (1990), p. 98.

arriving in Van Diemen's Land than in Bermuda. These regulations also meant that the convicts in the Australian colony were, as a group, likely to be older than those labouring on the Bermudian fortifications. As the age of the convicts increased, so too did their likelihood of experiencing other medical problems.[703]

While many prisoners arrived on colonial shores having "enjoyed good health" for much of their lives, some may have already suffered an eventful medical history.[704] Still others may have found the new climate disruptive to their constitutions, leading to disturbing new health problems. For those who sought treatment, identification of their illness was important. Although there may have been negative consequences of the diagnostic process, there were also numerous beneficial outcomes. New medicines or new dosages of drugs could be trialled, with positive results used to provide other sufferers with improved treatment. Without standardised disease classifications, collating information on morbidity and mortality rates would be impossible, as would analysing clinical data.

For the surgeon, diagnosis enabled cases identified as the same type of condition to be compared – the basis of the modern clinical trial derived from such origins. The importance of such comparison was emphasised by St Bartholomew's surgeon Dr Ormerod, who affirmed that "medicine is learned by adding cases together."[705] The identification and classification of diseases was also significant on a much greater scale, as it informed the capacity of empires to enforce quarantine restrictions. While practitioners may have quibbled about the precise symptoms of various fevers or wasting sicknesses, the characteristic features of major epidemic diseases were well-known.[706]

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[703] See Chapter one for detail on age distribution of patients in the sample.
[704] Many patient records from New Norfolk Hospital include the note "has enjoyed good health" until the current admission.
[705] SBHAM, *SBH: Timothy Donovan* (MR 16/6/251a).
[706] Alter and Carmichael, 'Classifying the Dead', p. 124.

On an individual level, although the increasingly clinical nature of diagnosis extracted patients from the centre of the concept of disease during the mid-nineteenth century, it is crucial not to portray them as victims, universally and helplessly alienated from their illness. Diagnosis acted to engage the patient in a new type of narrative with his or her illness.[707] If it objectified, it equally empowered. The uncertainty of an unknown disease could be replaced by the relative sureness of a prognosis, a potential path to recovery on one hand, or impending death, on the other. If fear and uncertainty could not be allayed by diagnosis, at least the patient now had the opportunity to order them, to base them more firmly on fact than on nightmarish imaginings.[708] If death was to come, diagnosis at least permitted the opportunity of preparedness.

[707] Rosenberg, 'The Tyranny of Diagnosis', p. 257.
[708] Rosenberg, 'The Tyranny of Diagnosis', p. 256.

Chapter Five

Physical Treatments

James Blackman faced an agonising decision. Three weeks earlier, at five o'clock on a warm Wednesday afternoon in late February, 1848, he had been out riding his master's horse in Bridgewater, nineteen kilometres north of Hobart. Blackman's right foot suddenly slipped through the stirrup and, frightened by the sudden cry from his rider, the horse reared around. The rider's foot was caught and, unable to free himself as the horse struggled frenziedly, both bones in Blackman's lower leg snapped two inches above his ankle.[709]

Seven years earlier, Blackman, a red-headed farmer's labourer from Sussex, had been sentenced to fourteen years transportation as punishment for stealing a jacket and a pair of shoes. Arriving in Van Diemen's Land in mid-1842 aged twenty-three, he was first stationed in a probation gang in Victoria Valley, one hundred and one kilometres from Hobart Town. Five year later, Blackman was assigned to Mr Murdoch in Bridgewater.[710] Indeed, on that February afternoon in

[709] Tasmanian Archive and Heritage Office, *Royal Derwent Hospital: James Blackman* (HSD 246/1/6/152).
[710] TAHO, *Conduct Registers: James Blackman* (CON 33/1/20, p. 34).

1848 it may have been Murdoch who helped carry Blackman, his leg and foot painfully unstable, to a boat in the nearby Derwent River. As the day deepened into night and the temperature began to drop, Blackman was rowed towards New Norfolk, twenty kilometres away. After more than ten hours in the boat, soaked with the water thrown back by the oars and shivering with fatigue and shock, Blackman arrived at the Hospital. Fifteen hours after the accident, Dr Frederick Brock observed Blackman's injuries with trepidation. A double fracture of both bones of the leg was considered to be perhaps the most difficult break to treat.[711] Blackman's leg muscles contracted the bones from their natural positions, forcing them violently out through the skin. The sheer physical strength required to wrench the displaced bones back into position and their tendency to slip back was compounded by the dread of infection common to any nineteenth-century surgical procedure.

Brock helped Blackman onto his back and a wardsman – usually a fellow patient – was employed to firmly grasp his thigh so that the leg bent at the knee, forcing the large calf muscle to relax. Brock seized Blackman's ankle with both hands and, working by the feel and sound of the broken ends of the bones rasping together as much as by sight, manoeuvred them back into position.[712] To prevent the bones sliding back once Brock and the wardsman released their grip, two long pieces of wood were positioned on either side of Blackman's leg. Straps were bound around the limb to keep it immobile and padded with dressings over the wound, with sheets of linen rollers wrapped over the top.[713]

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[711] E. Lonsdale, *A Practical Treatise on Fractures* (John Churchill, London, 1838), pp. 473-507.
[712] Lonsdale recommended that "a kind of see-saw motion…will unlock the ends of the bone, as well as disentangle them from the muscles." He also warned that the fractured ankle is perhaps the most difficult break to reduce, having so little leverage with which to reposition the broken bones (Lonsdale, *A Practical Treatise on Fractures,* p. 480, p. 485).
[713] Lonsdale, *A Practical Treatise on Fractures*, pp. 488-493.

Brock's concise case notes do not record how his patient coped with the brutal pain of this treatment.[714] It *is* known, however, that Blackman was not offered the newly-discovered miracle of ether anaesthetic to dull the agony of this procedure.

Over the next ten days, Blackman's condition appeared to steadily improve. His appetite was healthy, his bowels were regular and he was "free from pain."[715] On the twelfth day, however, Brock pulled back Blackman's coarse blanket to find abscesses spreading from the sole of his foot, up the ankle and over the lower part of the leg.[716] The wound where the bone had pierced the skin was swollen, and the bandages were growing stiff from increasing quantities of pus discharging from the lesions. Brock dosed his distressed patient with wine, incised the abscesses to drain away the pus, and ordered the ankle to be rebandaged with clean dressings.[717]

Blackman spent a restless night, perspiring heavily and waking with little appetite for his arrowroot and milk. For another ten days his condition remained much the same, neither improving nor deteriorating. Three weeks after the accident, on a Thursday in mid-March, the discharge from the wound suddenly increased, with "several small pieces of bone" coming away with the pus.[718] The wound had also expanded in size, allowing Brock to probe further inside Blackman's leg than he had earlier dared. What he found disturbed him. Rather than beginning

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[714] Doctors accepted that patients varied in the level of their pain tolerance, with sex, age and class also believed to influence sensibility (S. Snow, *Blessed Days of Anaesthesia: How Anaesthetics Changed the World* (Oxford University Press, Oxford, 2008), p. 63).

[715] TAHO, *RDH: James Blackman* (HSD 246/1/6/155).

[716] This horrific level of infection was common after compound fractures; when the bone breaks through the skin, the shards permit bacteria to enter the gaping wound. Surprisingly, it was not universally fatal. A case similar to Blackman's was admitted to St Bartholomew's, with the attending surgeon commenting that the favourable "termination of this case was considered as remarkably fortunate, for in this great and crowded hospital, it rarely happens that a compound fracture does well, or at best, not until a tedious suppuration" (cited in A. Digby, *Making a Medical Living: Doctors and Patients in the English Market for Medicine, 1720-1911* (Cambridge University Press, Cambridge, 1994), p. 84).

[717] Although suppuration and pus was sometimes considered to be a healthy process which allowed the body to naturally rid itself of toxins and rebalance the humours, in Blackman's case Brock does not comment on the 'healthiness' of his patient's discharge. It is probable, therefore, that he considered the pus to be injurious to the healing of the wound (H. Ellis, *The Cambridge History of Surgery* (Cambridge University Press, Cambridge, 2009), p. 82).

[718] TAHO, *RDH: James Blackman* (HSD 246/1/6/155).

to unite, Brock recorded that the bones of Blackman's ankle and leg remained "completely separated." With "there being no probability of preserving the limb," he continued brusquely, "amputation is proposed."

The choice now facing Blackman was stark: consent to the amputation of his leg, with the very real risk of rapid death through loss of blood or a slower demise through infection, or face weeks, even months, of pain as the tissue of his leg slowly putrefied, poisoning his blood and eventually his entire body. While Blackman weighed up his dismal options, Brock consulted with the Principle Medical Officer and as many other surgeons as he could from his isolated location.[719]

Two hundred kilometres away in a different, although almost equally isolated, colonial town, another doctor had undertaken a radical experiment which would have extraordinary impact upon Blackman's treatment. In June 1847, eight months after its first public demonstration in America, Dr William Russ Pugh became the first surgeon in the southern hemisphere to anaesthetise a patient using ether.[720] Nine months later, Blackman was destined to become the first New Norfolk patient to experience the miraculous effects of the drug. Brock and his colleagues would have been aware of Pugh's innovative and startlingly successful operations.[721] They may have seen in Blackman an opportunity to utilise new anaesthetic techniques in a

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[719] Doctors routinely consulted with a number of colleagues before proceeding with an operation, primarily to confirm the necessity of surgery, but also to diffuse the responsibility if the procedure proved fatal (M. Cooper, 'The Agony – Surgery Before Anaesthesia, The Patient's Perspective' in P. Richards and P. Ogden (eds.), *Anaesthesia: Awakening the Sleeping Giant* (Myola Publishing, Launceston, 2003), p. 39).

[720] Sydney dentist Dr J. Belisaro was the first medical practitioner in the southern hemisphere to report using ether to anaesthetise a patient (see, for example, E. Ratcliff, 'The Pugh Oration: A Yankee Dodge for Making People Insensible' in Richards and Ogden (eds.), *Anaesthesia*, p. 7, pp. 10-11; H. Ellis, *The Cambridge History of Surgery* (Cambridge University Press, Cambridge, 2009), p. 80; 'St. John's Hospital – Surgical Operations. The Influence of Ether', *Courier* (12 June 1847), p. 2).

[721] It is likely that Pugh would have been interested in Blackman's case, as Pugh devoted his MD thesis to the subject of fractures, and later published a number of articles on various types of amputations (J. Paull, 'William Russ Pugh: Not Just an Anaesthetist', *Australian and New Zealand College of Anaesthetists*, at <http://www.anzca.edu.au/events/asm/asm2008/abstracts/william-russ-pugh-not-just-an-anaesthetist.html>, accessed 25 June 2009).

relatively rare 'capital' operation, to advance both personal and professional knowledge and reputation.[722] And, of course, to ultimately – hopefully – save a patient's life.

By early on that cloudy March afternoon, both doctors and patient had reached their decisions. Amputation was scheduled for four o'clock that day, allowing Blackman as little time as possible to dwell upon his impending surgery.[723] As the day lengthened, Brock arranged his equipment close to the wooden table on which the operation would be performed, being sure to keep it out of Blackman's sight.[724] Retractors, tourniquets, ligatures, and dressings were laid out alongside a wide-toothed saw and the long, curving amputation knife.[725] Dr John Meyer arrived to assist in the operation as Brock assembled his ether truss. As Blackman lay on the table, positioned close to the windows to take advantage of what little light filtered through the clouds, Brock dripped a tiny amount of ether onto a cloth and held it over Blackman's mouth and nose. The pungent odour of ether often caused patients to cough and gasp, although Brock does not record that Blackman experienced any respiratory distress. In fact, quite the reverse – after half an hour of administering the ether, his patient still appeared fully conscious, in control of all his limbs and faculties. Brock records despondently that, "as it was becoming late and the Evening dull, it was determined on to defer the operation untill [sic] tomorrow morning." Both patient and doctors were disconcerted by the apparent failure of the miracle of anaesthesia, but were determined to have a second attempt on the following day.

The second endeavour proved more entertaining, although still without the intended outcome. After Blackman had resumed his position upon the scrubbed wooden operating table, Brock administered a slightly more audacious dose of ether. All present watched apprehensively as the

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[722] See the Glossary of Terminology for explanation of terms.
[723] Cooper, 'The Agony' in Richards and Ogden (eds.), *Anaesthesia*, pp. 39-40.
[724] It was widely believed that patients should not see operating equipment prior to surgical procedures, lest it induce panic (T. Wakley (ed.), 'Lectures on Surgery Delivered by Mr Wardrop', *The Lancet*, vol. II (1833), p. 593.
[725] Amputation saws had widely-spaced teeth to prevent them from becoming clogged and blunted with bone and tissue.

moments passed. Suddenly, Blackman began to giggle. "Instead of insensibility," Brock wrote soberly, the ether produced a "state of Hysteria the Patient laughing and becoming much excited."[726] While Blackman enjoyed this unexpectedly hilarious interlude from the pain of his traumatised leg, Brock and Meyer solemnly pondered the possible reasons for the failure of the ether to induce unconsciousness. "Again Postponed," wrote Brock dejectedly in Blackman's case notes.[727]

Later the same day, the ether was given a third trial and, reports Brock triumphantly, "Finally the limb was removed."[728] This time, under the influence of the ether, Blackman's concentration became impaired; his speech slurred and became disconnected. Soon his movement became inhibited and sensibility decreased.[729] Cautiously, Brock removed the ether-soaked cloth from Blackman's face and picked up his knife.

As Meyer secured the tourniquet to compress the tibial artery behind Blackman's knee, Brock grasped the skin of Blackman's leg just below the knee and drew it taut before sinking the blade into his patient's skin and sweeping it around the leg.[730] . As the skin shrank away from the incision, Meyer quickly positioned retractors in the gaping wound. Brock made a second and third cut through the layers of fat and muscle as Meyer forcibly pulled the flesh away from the bone using the retractors. Laying down his knife, Brock began securing the arteries in the stump. Painstakingly knotting a fine length of silk thread, he trimmed one end close to the ligature and let the other to hang out of the incision, to allow it to be removed when – if – the

[726] TAHO, *RDH: James Blackman* (HSD 246/1/6/162).
[727] TAHO, *RDH: James Blackman* (HSD 246/1/6/162).
[728] TAHO, *RDH: James Blackman* (HSD 246/1/6/162).
[729] J. Pereira, *The Elements of Materia Medica and Therapeutics* (3rd ed., Blanchard and Lea, Philadelphia, 1852), p. 239.
[730] W. Fergusson, *A System of Practical Surgery* (2nd ed., Lea and Blanchard, Philadelphia, 1845), p. 162.

wound healed.[731] Directing Meyer to loosen the tourniquet, both doctors watched as the blood resumed coursing through Blackman's veins and arteries.

Satisfied that the ligatures would hold, Brock picked up the saw. Supporting the instrument on his left thumb nail to prevent it slipping, he began to cut into Blackman's exposed leg bones, moving slowly at first, then increasing his pace until carefully making the last few sweeps to prevent the bones splintering.[732] In less than three minutes Blackman's right foot was lying in the sawdust on the floor. Having earlier approximated a few inches of skin to cover the exposed bone and flesh, Brock now set to work "forming a posterior flap" and supporting it with a bandage.[733] Over this he wrapped calico dressings, and had "a Cloth wet with cold water applied to the part for 1½ hours."[734]Of Blackman's state of consciousness, of his level of pain or distress, Brock records tantalisingly little, stating simply that "The Man bore the operation pretty well."[735] Whatever his experiences, he passed "a pretty good night" and awoke the day after the operation hopeful of an uneventful recovery.[736]

The Surgical Trade

Brock was academically well prepared to perform Blackman's amputation. In the 1820s he qualified as a Doctor of Medicine at the University of Edinburgh and became a Licentiate of the

[731] W. Cocks, *A Concise Treatise of Operative Surgery, Describing the Methods Adopted by English, Continental and American Surgeons* (Longman, Rees, Orme, Brown, Green and Longman, London, 1837), p. 277.
[732] Cocks, *A Concise Treatise of Operative Surgery*, p. 319.
[733] TAHO, *RDH: James Blackman* (HSD 246/1/6/162); Cocks, *A Concise Treatise of Operative Surgery*, p. 342.
[734] TAHO, *RDH: James Blackman* (HSD 246/1/6/162).
[735] TAHO, *RDH: James Blackman* (HSD 246/1/6/162).
[736] TAHO, *RDH: James Blackman* (HSD 246/1/6/162).

Royal College of Surgeons, Edinburgh.[737] During this period, surgery was still struggling to throw off its reputation as a low-status, manual trade and assume a respectable position in parity with the comparatively clean and genteel practice of the physician. The graphic nature of the surgeon's work – the lancing of pus-filled boils, the excising of cysts and tumours, 'cutting for the stone',[738] and the reduction of grotesque compound fractures – and the very tools they used saw them likened to macabre butchers. Surgeons were described as 'uncouth in their manner, vulgar and indelicate in their language, slovenly in their dress, and harsh and unfeeling in their treatment" – the absolute antithesis of an elegant and refined elite physician.[739]

These extreme views of eighteenth and nineteenth-century surgeons have been compounded by descriptions of practitioners as reckless, imprudent performers, with a heavy emphasis on spectacular and exceptional procedures (such as amputation, ovariotomy and trephining) as opposed to the routine blood-letting, scarifying, tooth-pulling, and repairing of fistulas and hernias which formed the mainstay of the surgeon's income. The restrictions upon surgery, depicted as being so great as to prevent any amount of useful work to be done, has also been focused upon. The reality of the surgeon's work lies somewhere between these two extremes.[740]

Before the miracle of anaesthesia, surgeons were indeed limited by the need for haste to a small list of relatively minor – and comparatively safe – procedures.[741] Lithotomies, repair of hernias, removal of cataracts and the draining of septic inflammations were undertaken regularly,

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[737] TAHO, *Governor's Office: Governor's Duplicate Despatches Received by the Colonial Office* (31 May 1848), (GO 33/64, pp. 91-108); TAHO, *GO: Governor's Duplicate Despatches Received by the Colonial Office* (31 May 1848), (GO 33/64, pp. 99-100).

[738] Lithotomies (see the Glossary of Terminology for explanation of terms) were an extremely common procedure until at least the early twentieth century, when they gradually declined as diet and living standards improved (H. Herr, "Cutting for the Stone': The Ancient Art of Lithotomy', *British Journal of Urology*, 101 (2008), p. 1216.

[739] Cited in M. Pernick, 'The Calculus of Suffering in Nineteenth-Century Surgery', *The Hastings Center Report*, 13 (1983), p. 32.

[740] S. Cherry, 'At the Cutting Edge: Surgery in Norwich in the 18th and 19th Centuries', *The History of Anaesthesia Proceedings*, 30 (2002), p. 96; R. Porter, 'Hospitals and Surgery' in R. Porter (ed.), *The Cambridge Illustrated History of Medicine* (Cambridge University Press, Cambridge, 2004), p. 217.

[741] Porter, 'Hospitals and Surgery' in Porter (ed.), *The Cambridge Illustrated History of Medicine*, p. 207.

alongside the routine dressing of wounds, venesection and the treatment of venereal and cutaneous eruptions. Major operations, such as those described above, were performed only when all other treatment options had been exhausted and – as in Blackman's case – the patient's life would be lost without immediate action. The abdominal and thoracic cavities were avoided due to the time and complexity of undertaking procedures in these regions.[742] Although there were memorable and well-publicised exceptions, the majority of surgeons performed operations with assured composure; confidence and strength – both physical and mental – were crucial to wield the knife both swiftly and with certainty, and to withstand the anguished cries of the patient.[743]

The operations that surgeons were able to perform, however, could cure or alleviate the symptoms of a number of diseases and conditions that may have otherwise been painful, disabling or fatal. Conservative treatment under the care of a knowledgeable, experienced, and sensible surgeon, although frighteningly painful, was accompanied by a relatively low mortality rate.[744] Surgical patients were willing to undergo the pain and risk of operations in the knowledge that the procedures offered their final hope of relief.

The Tasks of a Surgeon: Physical Treatments

Nineteenth-century surgery encompassed a much broader array of tasks than the modern concept of the term. Major operations – whether amputations, the excision of tumours, or trephining – were relatively rare. While some surgeons specialised in particular procedures, and

[742] Cherry, 'At the Cutting Edge', p. 96.
[743] Any number of horrifically bungled operations can be found; see, for example, Cherry, 'At the Cutting Edge, p. 98
[744] Porter, 'Hospitals and Surgery' in Porter (ed.), *The Cambridge Illustrated History of Medicine*, p. 218.

undertook large numbers of operations for high fees in hospitals or in patients' homes, many had little use for scalpels, other than for lancing boils or opening veins.

Surgical treatment methods fitted comfortably within the parameters of the humoural theory which delineated the understanding of medicine well into the 1800s. In an imbalanced body, excessive humours were believed to build up, leading to illness; health could be restored by removing these surplus humours and allowing the body to regain its equilibrium.[745] Various forms of blood-letting (venesection, wet cupping, scarification, and leeching) and counter-irritation (blistering, dry cupping and the insertion of setons and issues) neatly fulfilled this role, as they universally aimed to rebalance the patient's constitution by allowing morbid matter to flow or be expelled from the body.[746]

Counter-irritation (or, as it was earlier termed, 'revulsion') operated on the understanding that diseases occurred when bodily organs became irritated by "certain physical agents."[747] By stimulating a localised, cutaneous disease a 'counter-irritation' would be produced, thereby drawing the 'mischief' away from the original, internal site of disease to the 'artificial', external location where it could be more easily cured. As one nineteenth-century practitioner explained, the "morbid state of the skin operates as a peculiar stimulus, the result of which is transmitted to centers [sic] of the nervous system, where it develops and modifies the nervous power and reflects it through organic nerves."[748]

Venesection (phlebotomy or blood-letting)

Blood-letting was undoubtedly the most common procedure performed by surgeons; essentially, many of the forms of physical treatments described below are simply various forms of bleeding

[745] R. Porter, *Blood and Guts: A Short History of Medicine* (Penguin Books, London, 2003), p. 115.
[746] See the Glossary of Medicines and Treatments for explanation of terms.
[747] A. Granville, *Counter-Irritation, its Principles and Practice* (John Churchill, London, 1838), p. 2.
[748] M. Paine, *The Institutes of Medicine* (8th ed., Sampson Low, Son & Co., London, 1867), p. 679.

designed to treat different types of diseases. Blood-letting as a medical treatment was an ancient practice. During the seventeenth and eighteenth centuries, influenced by renowned physician Thomas Sydenham (who commonly relieved his patients of upwards of ten ounces of blood, around three hundred millilitres), it was "carried to the greatest excess."[749] By the early nineteenth century, although blood-letting remained an extremely common treatment for a wide range of diseases, it was less frequently carried to such 'heroic' lengths.

So-called heroic medical practice was based on the notion that taking treatments (whether physical or medicinal) to an almost violent extreme was more likely to result, ultimately, in a return of health to the ailing patient. Although this type of medical practice was widespread in Britain, and therefore in its Bermudian and Australian colonies, it was particularly fashionable in America during the early nineteenth century. One of its most vociferous and well-known advocates was physician Benjamin Rush, who encouraged extensive bleeding and purging. Rush formed many of his theories during the Philadelphia yellow fever epidemics in 1793.[750] He routinely drew up to eighty ounces (almost two and a half litres) of blood from his fever patients over a five day period – this amount is close to half the total amount of blood flowing through the average adult body.[751] He claimed that by draining such vast amounts of blood, the strain on convulsed blood vessels would be relieved, allowing the patient to relax and health to be restored.[752]

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[749] D. Sandford, T. Thomson, and A. Cunningham (eds.), *The Popular Encyclopaedia, Being a General Dictionary of Arts, Sciences, Literature, Biography, History, and Political Economy* (vol. 5, part 2, Blackie & Son, Dublin, 1837), p. 534.
[750] R. Taylor, *Medical Wisdom and Doctoring: The Art of 21st Century Practice* (Springer Science + Business Media, New York, 2010), p. 112.
[751] R. Horsman, *Frontier Doctor: William Beaumont, America's First Great Medical Scientist* (University of Missouri Press, Colombia, 1996), p. 20.
[752] Horsman, *Frontier Doctor*, p. 20

Much of eighteenth and nineteenth-century medicine fitted into the heroic category, and can appear to modern eyes as unnecessarily cruel.[753] Such aggressive measures undoubtedly possessed the dubious benefit of producing obvious results – these treatments would uniformly produce a physical loss of matter from the body. Under the influence of medicines this would commonly occur as vomiting or diarrhoea, while a loss of blood would result during scarification or venesection; regardless of the form taken by the morbid matter as it left the body, both patient and doctor could be satisfied that their treatment was clearly – visibly – operating. Such a brutal purging of the body would, however, sometimes terminate fatally.[754] This uncertainty pervaded not only heroic medical treatments but all forms of healthcare, whether administered by practitioners in hospitals or provided at home by family or friends.

Venesection involved opening a major vein and allowing blood to flow freely from the wound. Doctors at the New Norfolk Hospital, St Bartholomew's Hospital in London, and the Royal Naval Hospital in Bermuda all enthusiastically prescribed this form of blood-letting for a wide assortment of diseases. On the nineteenth of October, 1832, boatswain Thomas Worster was admitted to the sick list aboard the HMS *Ariadne*.[755] Despite the cooling temperatures as the month came to an end, Worster had passed a sleepless night, awaking with "an acute pain in the head."[756] When surgeon Edward Hilditch admitted him into the sick berth, Worster's "pulse was frequent and hard – the skin hot and dry, and there was a wild expression of the countenance" – symptoms demanding immediate venesection.[757] Having seated his patient, Hilditch wound a bandage tightly around Worster's upper arm a few inches above the elbow, and checked to

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[753] As Segal contends, however, modern medicine can also seem violent and sometimes even unnecessarily cruel – some forms of surgery or cancer treatments may attempt to prolong life, but in the process cause immense pain and distress to the patients they are attempting to heal (J. Segal, *Health and the Rhetoric of Medicine* (Southern Illinois University, Illinois, 2008), p. 24, p. 124).
[754] B. Ehrenreich and D. English, *Witches, Midwives, and Nurses: A History of Women Healers* (The Feminist Press at the City University of New York, New York, 1973), p. 23.
[755] The ship's name is difficult to read, and my interpretation may be incorrect (The National Archives, *Admiralty and Predecessors, Office of the Director General of the Medical Department of the Navy and Predecessors, Service Registers and Registers of Deaths and Injuries: Case Book, Royal Naval Hospital, Bermuda: Thos Worster* [ADM 104/98, p. 00012]).
[756] NA, *Case Book, Royal Naval Hospital, Bermuda: Thos Worster* (ADM 104/98, p. 00012).
[757] NA, *Case Book, Royal Naval Hospital, Bermuda: Thos Worster* (ADM 104/98, p. 00012).

ensure that his patient's pulse remained perceptible at the wrist. Positioning Worster's arm over a basin to catch the flowing blood, Hilditch pressed his thumb over a vein and made a neat incision with a sharp lancet – not too long, or the flow of blood would be uncontrollable; not to short, or the blood would seep into the surrounding cellular tissue. Patient and doctor watched as the blood gushed gently into the dish.[758] As Worster's face began to grow pale and clammy, Hilditch loosened the tourniquet and wiped the blood from his patient's arm, pressing the wound closed and binding it with lint and dressings. Over the next ten days, Hilditch bled Worster zealously, twice bringing him close to losing consciousness.[759]

Upon a sudden loss of such a quantity of blood, a patient such as Worster would have found himself becoming nauseous, his skin growing cold and moist, and his pulse slowing, until "by and by the motion of the heart [was] so much weakened that it no longer propels the blood with sufficient force to support the functions of the brain."[760] This loss of consciousness during or immediately subsequent to venesection was known as 'syncope'. It was not considered a particularly dangerous condition; if the patient was helped into a reclining position, recovery was generally swift as the blood returned to the brain. In cases where the patient's system was already weakened by disease, however, "the syncope either passes directly into death, or is succeeded by an intermediate state, named Sinking."[761] Few patients recovered from such a state.

At the New Norfolk Hospital, Brock also routinely bled his patients, using the same methods as his colleagues in Bermuda. Giles Marsh, a thirty-four -year-old convict in government employ, was suffering from painfully inflamed eyes. Troubled by a constant "pricking sensation in the

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[758] S. Cooper, *The First Lines of the Practice of Surgery: Designed as an Introduction for Students and a Concise Book of Reference for Practitioners* (3rd ed., Longman and Co., London, 1813), pp. 610-611.
[759] NA, *Case Book, Royal Naval Hospital, Bermuda: Thos Worster* (ADM 104/98, p. 00012).
[760] J. Syme, *The Principles of Surgery* (5th ed., John Murray, London, 1863), p. 18.
[761] Syme, *The Principles of Surgery*, p. 18.

left Eye," Marsh was relieved of almost six hundred millilitres of blood.[762] The next day, although Marsh's pulse remained fast at ninety-five beats per minute, Brock was satisfied to now find the rhythm "soft," rather than the violent pulsation felt before bleeding.[763]

For centuries, the location of the incision when letting blood had been a cause of great deliberation among practitioners. By the 1830s and 40s, as in the case of Thomas Worster, above, most surgeons simply secured a tourniquet around the patient's arm above the elbow, and selected the vein which was visibly the largest (usually the medial basilica) for incision. For localised conditions, a vein would sometimes be chosen which was closer to the affected area; the temporal artery was also sometime opened to relieve congestion in the head (by the period of these case notes, this was the only artery routinely opened by surgeons; in all other instances veins were selected).[764] Numerous special implements and kits, including fleams and thumb lancets, were promoted as superior tools for achieving the perfect blood-letting incision, although most mid-nineteenth-century surgeons relied upon a simple lancet to perform the procedure.[765]

By the 1830s scientists began to challenge the unquestioned dominance of forms of bloodletting.[766] The increasingly influential role of laboratory analysis and empirical observation in medical theory and practice meant that some practitioners were willing to contemplate the suggestion that universal administration of heroic venesection was not, perhaps, in the best interest of patients. Research by numerous scientists, such as Dr John Hughes Bennett in the 1850s, demonstrated that patient outcomes did in fact improve as bloodletting was decreased.[767] While venesection did not rapidly fall out of favour, as evidenced by its enthusiastic application

[762] TAHO, *RDH: Giles Marsh* (HSD 246/1/1-2/129).
[763] TAHO, *RDH: Giles Marsh* (HSD 246/1/1-2/129).
[764] Sandford, Thomson, and Cunningham, *The Popular Encyclopaedia*, p. 534.
[765] L. Parapia, 'History of Bloodletting by Phlebotomy', *British Journal of Haematology*, 143 (2008), pp. 492-493.
[766] Parapia, 'History of Bloodletting', p. 494.
[767] Cited in Parapia, 'History of Bloodletting', p. 494.

at the three hospitals examined here, its use nonetheless began to gradually decline from the mid-nineteenth century.

Scarification

Scarification, a procedure used to make a series of shallow cuts in the skin, was often used to reduce localised inflammation and congestion. It could be used as a substitute for leeches if these were unobtainable, as the outcome of the two treatments was similar.[768] In some instances, such as in cases of ophthalmia, the use of scarification was preferred to the application of leeches as these were prone to cause irritation to the delicate tissues of the eyes and nose.[769]

Many practitioners were particularly enamoured of the success of this form of treatment in that "violent and destructive ophthalmia" which could obliterate a man's sight in a matter of days.[770] Brock utilised this procedure on Henry Pilkington, a sixty -year-old patient suffering with inflamed and swollen eyes. Taking up a lancet, its point rounded off, he everted Pilkington's eyelid and made a number of small incisions in the exposed conjunctiva.[771] As the scratches began to bleed, Brock applied warm fomentations to the wounds to encourage the blood to continue flowing. Small wisps of dry lint were used to soak up the blood until it began to coagulate.[772] Warm water was then trickled over Pilkington's eyes until the bleeding had been re-established, with Brock soaking up the blood until he was satisfied sufficient matter had been removed from his patient's swollen eyes. Despite the "exquisite pain" of the procedure,

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[768] J. Byrne, 'Reflections on Uterine Pathology', *The Medical Record*, 3 (1868-1869), p. 53.
[769] T. Jones, *The Principles and Practice of Ophthalmic Medicine and Surgery* (3rd American ed., Blanchard and Lea, Philadelphia, 1863), p. 70.
[770] R. Middlemore, *A Treatise on the Diseases of the Eye and its Appendages* (vol. 1, Longman, Rees, Orme, Brown, Green and Longman, London, 1835), pp. 141-142.
[771] Jones, *The Principles and Practice of Ophthalmic Medicine*, p. 72.
[772] Syme, *The Principles of Surgery*, p. 498.

Pilkington began to improve, with the inflammation gradually lessening as the trauma of the treatment passed.[773]

In Bermuda, too, scarification was practiced earnestly. A few days after Christmas in 1835, twenty-five year old sailor Alfred Rose was admitted from HMS *President* suffering from phlegmon in his left leg.[774] Dr Alexander Nisbet "fully scarified" the inflamed area, probably using a scarificator, a small brass box containing between four and sixteen sharp surgical lancets, with a regulator allowing the depth of the incision to be selected.[775] As Nisbet pressed the lever on the side, the blades were simultaneously pushed into Rose's skin, producing a number of neat cuts. With the wounds oozing blood and pus, Nisbet alternately applied cold compresses and warm cataplasms to relieve the pain and swelling. Dr J. Prowse, another Royal Naval doctor stationed in Bermuda, admitted thirty-one year old convict James Rupell, also suffering from ophthalmia. Happily, although Rupell's "right eye has been affected with Chemosis," the inflammation "almost entirely disappeared after a free scarification - by this and the other means employed together with Cupping and Blistering the inflammation became considerably reduced."[776]

Cupping (wet and dry)

Scarification was often used in conjunction with cupping, another technique of abstracting blood. This method was cited as the least perilous forms of bloodletting, as there was less chance of grave accidents such as haemorrhage from slicing too deeply into a vein.[777] It was not

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[773] TAHO, *RDH: Henry Pilkington* (HSD 246/1/1-2/54); A. Edmondston, 'A Treatise on the Varieties and Consequences of Ophthalmia, with a Preliminary Inquiry into its Contagious Nature', *The Edinburgh Medical and Surgical Journal*, 3 (1807), p. 218.
[774] See the Glossary of Terminology for explanation of terms (NA, *Case Book, Royal Naval Hospital, Bermuda: Alfred Rose* (ADM 104/98, p. 000362).
[775] R. Allan, *A System of Pathological & Operative Surgery, Founded on Anatomy* (vol. 2, Edinburgh University Press, Edinburgh, 1821), pp. 435-436.
[776] NA, *Case Book, Royal Naval Hospital, Bermuda: James Rupell* (ADM 104/98, p. 00064).
[777] J. Staples, *A Few Practical Observations on the Art of Cupping* (Longman, Rees, Orme Brown, Green, and Longman, London, 1835), pp. x-xi.

always a technique beloved by patients, however; some sufferers found the dramatic procedure, involving fire, sharp lancets, and cups brimming with blood rather terrifying. Robert Parker, for example, a patient at St Bartholomew's Hospital, "offered great resistance to the cupping" applied by Ormerod to treat Parker's inflamed spinal column.[778]

The aim of cupping was to "produce the largest quantity of blood in the least amount of time."[779] Both wet and dry cupping involved the use of vacuum force to raise blood to the skin; wet cupping then extracted this blood by scarifying the skin, allowing the blood to be sucked into a second heated cupping glass. Many parts of the body were cited as appropriate locations to apply cupping glasses. Around inflamed joints, on either side of the spine, across the abdomen, and even the calves of the legs could be cupped without difficulty.[780] Cupping, therefore, demanded less knowledge than the other methods of bloodletting, but a careful bedside manner remained just as important. One physician summarised the essential skills required for successful cupping as "cheerfulness without impertinence or undue familiarity, the most scrupulous delicacy and cleanliness in the operation, promptitude in attendance, and manual dexterity."[781]

The most common area of the body to be cupped was the back of the neck, as in the case of Robert Green, a thirty-six -year-old New Norfolk patient admitted with chronic ophthalmia. After eight long months of treatment, during which his condition remained much the same, Green 'took cold' and his eyes became more vascular. Brock warmed a cloth and rubbed the back of Green's neck vigorously to encourage good blood flow.[782] Holding three small glass cupping vessels in his left hand, their edges smoothly rounded so as not to cut into Green's skin,

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[778] St Bartholomew's Hospital Archives and Museum, St Bartholomew's Hospital, *Medical and Surgical Case Notes of Edward Latham Ormerod, Diseases of the Central Nervous System, Kidneys, Abdominal and Infectious Skin Diseases: Robert Parker* (MR 16/6/89a).
[779] Staples, *A Few Practical Observations on the Art of Cupping*, p. 28.
[780] Staples, *A Few Practical Observations on the Art of Cupping*, pp. 28-54.
[781] Staples, *A Few Practical Observations on the Art of Cupping*, p. 55.
[782] Allan, *A System of Pathological & Operative Surgery*, pp. 435-437.

Brock held a flame – probably a candle – to the lower edge of each vessel in turn. As soon as the flame was removed from the cups, Brock swiftly pressed the vessels to Green's neck. The air inside the vessels compressed, causing the patient's skin to redden as the blood congested. Brock quickly slipped his fingernail underneath the glass, breaking the vacuum and removing the vessel, leaving three purplish, circular bruises on Green's neck.

Brock had now successfully 'dry cupped' his patient. Green was unlikely to be in any pain at this point; dry cupping was said to be uncomfortable, but not actually painful. As one physician averred, "if the patient complains, it is merely from the novelty of the sensation," which was described as something akin to the pressure of a heavy weight upon the area being cupped.[783] If the practitioner had prescribed only dry cupping, the treatment was now complete, but most would finish by scarifying the cupped skin, releasing the congested blood in a procedure known as 'wet cupping'.

Picking up the scarificator, Brock incised the inflamed area on Green's neck. With the cuts beginning to ooze, Brock cupped Green for a second time, this time with crimson blood filling each vessel. Removing the cups, this time brimming with blood, required great dexterity; one practitioner admitted that "an ambidextrous person possesses advantages in all operations, - in none more than cupping."[784] Brock would have held a damp sponge in one hand, and released the cup's vacuum by sliding his fingernail under the uppermost edge of the glass as he pressed the sponge against the lower edge. With enough practice, as Brock had undoubtedly acquired during his years in the colony, he would have been able to remove each cup without spilling a drop.[785] After bathing the wounds with warm water to remove any coagula, Brock replaced the heated cups on Green's neck until the scarified skin ceased to bleed. Having dressed the wounds

[783] Staples, *A Few Practical Observations on the Art of Cupping*, p. 30.
[784] Staples, *A Few Practical Observations on the Art of Cupping*, p. 41.
[785] Staples, *A Few Practical Observations on the Art of Cupping*, p. 32.

with simple ointment and a small lint bandage, he left his patient to rest. The next day, Brock wrote with satisfied approval, Green "says he has experienced much relief from the cupping."[786]

Leeches (*Hirudo medicinalis*)

A gentler, but less specific, method of blood-letting was the application of leeches. The protein secreted by the leech inhibits the body's natural clotting mechanism, allowing blood to continue flowing unchecked (the flow occasionally continued after the leech had fallen off or been detached, requiring the attending surgeon to stitch the bite closed).[787] The type of leeches generally used for medical treatment were of an olive-black colour, around two to three inches in length. Larger leeches were more highly valued, as they were able to consume more blood. Some leech dealers capitalised on this by allowing their leeches to gorge on blood before selling them, increasing their size and weight and so making small, inferior leeches more valuable.[788] These leeches, however, were sluggish and difficult to attach, occasioning "much annoyance" to anxious or restless patients, while leeches which had been kept from food were easily attached to the skin and were accepted more readily by patients.[789]

As it was essentially painless, this treatment was hugely popular among all classes of society. Leech dealers struggled to meet the demand for their wares, with the four main sellers importing around six hundred thousand leeches into London each month in the early 1840s (amounting to an astonishing grand total of over seven million leeches annually).[790] Many practitioners lamented the fact that Britain was dependent upon this importation of foreign leeches, as they were not bred locally in sufficient quantities to be medically useful.[791] Colonial surgeons in

[786] TAHO, *RDH: Robert Green* (HSD 246/1/1-2/26).
[787] E. Shorter, 'Primary Care' in Porter (ed.), *The Cambridge Illustrated History of Medicine*, p. 122.
[788] M. Chevalier, 'Abstract of a Memoir on the Leech Commerce of France', *British and American Medical and Physical Journal*, 1 (1845-1846), p. 217.
[789] Chevalier, 'Abstract of a Memoir', p. 217.
[790] T. Andrew, *A Cyclopaedia of Domestic Medicine and Surgery* (Blackie and Sons, Glasgow, 1842), p. 320.
[791] T. Andrew, *A Cyclopaedia of Domestic Medicine and Surgery* (Blackie and Sons, Glasgow, 1842), p. 320.

Bermuda would also have relied upon imported leeches for their supplies. Practitioners in Van Diemen's Land, however, may have been able to source their own leeches locally.

The importation of leeches forced prices up, obliging surgeons to economise with them. Some practitioners routinely cut their leeches in half mid-way through a treatment, maintaining that they continued to suck as if nothing had happened.[792] More commonly, a single leech would be used repeatedly by a surgeon, who would keep a 'leech jar' in his rooms in which to house them. This jar was kept in a cool place (never on a window sill where it may be exposed to damaging heat or frost), and the leeches were inspected daily and removed every week or so for ten or fifteen minutes of exercise on a rough linen towel.[793]

Leeches did, however, require some additional maintenance. When a leech was removed from a patient, it would immediately be 'stripped' to remove the blood it had consumed. This procedure involved touching the mouth of the leech with a tiny quantity of clean white salt – not too much, or the leech would immediately expire – and then grasping it "by the tail with the fore finger and thumb of the left, and with the same finger and thumb of the right hand strip the leech from stem to stern, as a sailor would say."[794] After eight or ten days, the leech was ready to use on another congested patient, although care should be taken not to communicate diseases between patients. One practitioner recalled transmission of syphilis from one patient to another via a contaminated leech.[795]

Surgeons were also required to monitor leeches as they were being used, particularly in sensitive areas, and numerous texts were published instructing practitioners on methods of removing leeches from difficult anatomical positions or retrieving lost leeches. One such *Book of*

[792] 'Intelligence and Miscellanies: Leeches', *American Journal of Science and Arts*, 16 (1829), p. 394 (footnote).
[793] Andrew, *A Cyclopaedia of Domestic Medicine*, pp. 320-321.
[794] Andrew, *A Cyclopaedia of Domestic Medicine*, p. 321.
[795] 'Intelligence and Miscellanies: Leeches', p. 394.

Emergencies provides anxious practitioners with detailed instructions for an appropriate course of action in such dire situations.[796] Upon discovering that leeches applied to the back of a patient's gums had 'escaped' into the stomach, the doctor was immediately to dose his hapless patient with salt dissolved in water which would kill the leech, and provoke the patient to vomit it up. If the leech was detected before it arrived in the stomach, and had only made it as far as the back of the throat, a salt and vinegar gargle was suggested instead.

Blistering

While bleeding allowed excess fluids to drain from the body, blistering was understood to allow the deeper layers of tissue to excrete morbid matter and release spasms, thus also contributing to the rebalancing of the patient's humours.[797] Early in September, 1845, John Costall was admitted to the New Norfolk Hospital. A soldier who had served in India prior to being transported, Costall had lately been employed as a constable and flagellator in the district of New Norfolk.[798] For the previous ten days, he had been camped in the bush, exposed to wet conditions by day and night. At first, he dismissed the shivering and cold perspiration as a simple attack of catarrh, but soon the aching pain in his limbs prevented him from working. Waves of nausea forced him back to his rough bed, where he lay sleepless, his skin hot and dry and his head pounding.[799]

The surgeon promptly ordered Costall into a warm bath, then prescribed him *ipecacuanha*, a commonly-used, relatively mild emetic.[800] Instead of provoking the expected vomiting, Brock was slightly disconcerted when the medicine acted instead to purge his patient's bowels; Costall explained to his perplexed surgeon that "Emetics never produce vomiting in him but invariably

[796] E. Shaw, *The Medical Rememberer, or Book of Emergencies* (2nd ed., John Churchill, London, 1845), p. 68.
[797] J. Thomson (ed.), *The Works of William Cullen, M.D.* (vol. 1, William Blackwood, Edinburgh, 1827), p. 634.
[798] TAHO, *RDH: John Costall* (HSD 246/1/1/227).
[799] TAHO, *RDH: John Costall* (HSD 246/1/1/227).
[800] See Chapter Six for details on medicinal treatments.

act as this has done."[801] Costall also complained of a severe pain in the right side of his chest, worsening upon inspiration. To ease any generalised inflammation affecting his patient's system, Brock bled Costall; to target the localised pain in Costall's chest, however, a blister was deemed necessary.

Brock took a small piece of leather and spread it with an adhesive plaster to allow the preparation to stick to Costall's skin. Carefully leaving a margin of exposed adhesive plaster, Brock smoothed a layer of blistering plaster over the top using his thumb. This mixture, composed of powdered Spanish blistering flies (*Cantharides*), wax plaster, and lard, would raise a blister on Costall's skin by separating the top layer from the skin beneath.[802] Brock applied the small plaster to Costal's chest over the seat of pain, and left it for ten to twelve hours. Blisters were commonly applied locally, as this was understood to foster an improved flow of matter directly from the location of inflammation to the wound made by the blister – common sites included the nape of the neck, behind the ear or on the temples.

After a period of time, the leather was peeled away and a "perfect blister" remained on Costall's chest.[803] The swelling was then incised with a lancet or "snipped with a pair of scissors" to allow the collected serum to escape.[804] Brock dressed the wound with simple ointment, and strapped a soft white pad over the top. The blister would then be allowed to heal, although some practitioners advocated irritating the wound by removing the loosened layer of skin and applying a sprinkling of blistering powder to encourage it to continue weeping serum.[805] Most surgeons

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[801] TAHO, *RDH: John Costall* (HSD 246/1/1/227).
[802] This pharmaceutical recipe varied – the example used here was that advocated by the London College of Physicians (A. Thomson, *The London Dispensatory* (Longman, Rees, Orme, Brown, Green and Longman London, 1815), p. 695). For further explanation of terms, see the Glossary of Terminology.
[803] TAHO, *RDH: John Costall* (HSD 246/1/1/227)
[804] Thomson, *The London Dispensatory*, p. 695; W. Keeveston, *A Manual of the Domestic Practice of Medicine* (Longman, Brown, Green, and Longmans, London, 1856), p. 312.
[805] Syme, *The Principles of Surgery*, p. 25.

were opposed to such methods, as it often produced an ugly, festering sore, preferring instead to allow the first blister to heal and then applying another.[806]

After being blistered, Costall's breathing was less painful, although he continued to experience discomfort when he coughed. He did, however, complain to Brock that he "was kept awake in the fore part of the night" by the pain of his freshly blistered chest.[807] Until the advent of anaesthetic in the mid-nineteenth century, many patients, like Costall, were aware that the pain of treatments such as blistering was an integral part of healing; nonetheless, many case notes record the relief patients reportedly experienced upon such applications. Some practitioners avoided the use of blisters where possible, particularly in public hospitals, as non-compliant patients occasionally removed the blistering plaster before the blister beneath it had fully risen.[808]

While blistering plasters were the most widely used of the vesicatories, other ointments and poultices were also used to produce a similar effect. Although these treatments do not strictly come under the category of physical treatments as they were based on medical rather than surgical procedures, they were generally categorised together as they were used with the intention of producing comparable results (external counter-irritation).[809] Rubefacients were administered to produce a reddening and irritation of the skin, with the most common including poultices such as mustard (*Sinapis alba* or *Sinapis nigra*), camphor (*Camphorae*), and oil of turpentine (*Olei terebinthinae*).[810] Vesicatories, such as silver nitrate (*Argentum nitrate*) and tartar ointment (*Unguenta tartarised antimonii*), essentially a more severe form of rubefacient, were intended to form blisters on patients' skin.

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[806] 'External Stimulants', *The Penny Magazine of the Society for the Diffusion of Useful Knowledge*, 519 (1840), p. 175.
[807] TAHO, *RDH: John Costall* (HSD 246/1/1/227).
[808] SBHAM, SBH, *Medical and Surgical Case Notes: Patient Notes* (MR 16/6/210a).
[809] For more details on rubefacients, vesicatories, and other medicinal treatments, see Chapter Six and the Glossary of Treatments.
[810] J. Wand-Tetley, 'Historical Methods of Counter-Irritation', *Annals of Physical Medicine*, 3 (1956), p. 91.

Setons and issues

While blisters were rarely kept open for extended periods, issues and setons were administered specifically to allow lengthy, uninterrupted drainage. When inserting a seton, the surgeon would pinch a fold of the patient's skin, often on the nape of the neck or the temple (but never in a region close to a blood vessel or bone). An instrument known as a 'seton-needle' – a thin, curving, lancet-shaped tool, about three inches in length, with an eye at one end through which a piece of twine or silk thread was inserted – would then be carefully thrust through the fold of skin.[811] The needle would be passed through the incision, leaving the thread in the wound.[812] Each day, the thread would be moved through the incision to stimulate draining and prevent it from closing over.[813] If the surgeon was unsatisfied with the production of pus, the thread would be smeared with oil and dusted with a vesicant such as *Cantharides* to promote a more vigorous flow.[814]

Issues operated in a similar manner to setons but, in place of a thread, a pea or bean (sometimes more than one) was inserted to keep the wound open. Due to the larger size of the foreign body, issues tended to produce a greater flow of pus than setons.[815] If the seton or issue ceased to discharge, the procedure would often be repeated. When William Madley, a patient at St Bartholomew's Hospital, experienced a sudden deterioration in his condition, Ormerod immediately attributed this to sudden stoppage of his seton.[816]

Although setons and issues were long-standing treatments which had remained part of the surgeon's repertoire for centuries, by the 1850s practitioners had begun to question the efficacy

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811 Wand-Tetley, 'Historical Methods of Counter-Irritation', pp. 91-92.
812 Cocks states that "In fat subjects the operation is performed by plunging the point of a strong bladed lancet through the skin after the manner of bleeding then bearing it forward upward and outward" (Cocks, *A Concise Treatise of Operative Surgery*, p. 23).
813 Cocks, *A Concise Treatise of Operative Surgery*, p. 24.
814 Wand-Tetley, 'Historical Methods of Counter-Irritation', pp. 91-92.
815 Wand-Tetley, 'Historical Methods of Counter-Irritation', p. 92.
816 SBHAM, SBH, *Medical and Surgical Case Notes: William Madley* (MR 16/6/85 - MR 16/6/85a).

of these procedures.[817] While they were steadily rejected as treatments for most diseases, surgeons continued to utilise them in cases of ophthalmia for significantly longer.[818]

Rates of Physical Treatments

Despite the obvious pain, physical treatments were popular among patients. Lay understanding of the humoural system of health meant that people were often keen to undergo treatment

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[817] Wand-Tetley, 'Historical Methods of Counter-Irritation', p. 92.

[818] A small group of other physical treatments based on the use of cautery were practised during the nineteenth century, but, interestingly, are not mentioned in the pages of case notes from any of the three hospitals used in this research. Brief descriptions are nonetheless included here, as they continued to be utilised in other institutions. **Cautery** (generally termed 'actual cautery' to distinguish it from the effect produced by caustic medicines) was used to stem haemorrhage and to destroy ulcers and other growths. It was used as a potent treatment applied as a last resort, when all other means had been exhausted, which perhaps explains its lack of usage in the three hospitals in this sample (Wand-Tetley, 'Historical Methods of Counter-Irritation', p. 92). Indeed, Syme extols it as "the most powerful [remedial] means that can be employed" (Syme, *The Principles of Surgery*, p. 261). The intense, almost barbarous nature of this procedure, however, meant that only a small group of patients (perhaps the most desperate) could tolerate its application – as Cooper wrote, to "many patients the proposal [of actual cautery] is attended with horror; to all the application is severely painful" (Cooper, *The First Lines of the Practice of Surgery*, p. 65). To cauterise a patient, the surgeon would heat an iron until it was red hot, and apply it to specific points on the patient's body to produce small burns. Although the surrounding skin was protected by folded cloth, the wound which remained would be black, surrounded by an angry red rim which often took weeks to heal. Another type of counter-irritation involving cautery was **moxa** (also known as moxibustion or moxiburium). Although originating in Asia (primarily China and Japan) and particularly popular in France, moxa had also been practiced sporadically in Britain since the seventeenth century (Wand-Tetley, 'Historical Methods of Counter-Irritation', pp. 93-94). This procedure involved crushing leaves of the mugwort plant (*Artemisia moxa*) until they become almost cotton-like in appearance, and placing them inside a cone made of cotton wool or the pith of a sunflower, about an inch in length (other combustible materials, such as sulphur or cotton wool treated with nitre, could be used if mugwort was unobtainable, although the plant was commonly advocated to be superior for the purpose of moxa [Wand-Tetley, 'Historical Methods of Counter-Irritation', p. 93; R. Dunglison, *Medical Lexicon: A Dictionary of Medical Science* (6th ed., Lea and Blanchard, Philadelphia, 1846), p. 497]). This was placed onto the patient's skin, and the top of the cone set alight, while the surrounding skin was protected by wet cloths (N. Chapman, *Elements of Therapeutics and Materia Medica* (6th ed., vol. 2, Carey & Lea, Philadelphia, 1831), p. 54). As the cone gradually burnt down, the "agreeable sensation of heat" generated by the moxa developed into pain as a slough was formed on the skin, from which oozed pus (Pereira, *The Elements of Materia Medica* (1857), p. 24; Dunglison, *Medical Lexicon*, p. 497). The depth of irritation produced by the moxa could be controlled by the practitioner – if the cone was removed early, or moved along the skin, a rubefacient or vesicant effect could be produced, while if the moxa was allowed to burn to the skin (or its combustion hastened with a blow-pipe), an eschar would result (R. Dunglison, *New Remedies* (6th ed., Blanchard and Lea, Philadelphia, 1851), p. 534; Wand-Tetley, 'Historical Methods of Counter-Irritation', p. 93). To keep the moxa in position as it burnt, and to prevent the practitioner scorching his fingers, a *porte-moxa* (a tool made of metal and ebony, with a ring to hold the moxa and a handle to keep the surgeon's hand away from the burning fibres) was used to hold the cone (Dunglison, *New Remedies*, p. 533). Moxa could be used in place of other forms of counter-irritation in some circumstances – indeed, a certain Mr Leney assures us that the Irish "prefer it greatly to the application of a blister" (Dunglison, *New Remedies*, p. 533). A similar but more generalised form of moxa could also be used, which involved soaking a sheet of linen or paper in alcohol, laying on the patient's skin (often over the spine), and quickly applying a flame to the sheet. A flame engulfed the paper or cloth, and was swiftly extinguished as the alcohol was burnt away. The upper layer of the patient's skin would then be found detached from the "true skin" beneath (Dunglison, *New Remedies*, p. 533).

which produced a visible effect, and procedures such as venesection and counter-irritation yielded dramatic results which patients could both see and feel.

Patients in the New Norfolk and the Royal Naval Hospital occasionally requested particular physical treatments, generally bleeding. In one extreme case, however, seventy-six -year-old New Norfolk patient James Richardson begged Brock to amputate his phlegmatous arm to prevent the disease spreading and to end his overwhelming debility. Three weeks later, after extensive consultation with his colleagues and the Principle Medical Officer, Brock removed Richardson's arm just below the shoulder. "Very little blood was lost," Brock wrote of the operation, and "the Patient bore it remarkably well."[819]

In Van Diemen's Land, ill or injured convicts would first be treated at the small, temporary 'hospital' located close to the labour gang's work site. Here, the surgeon would provide treatment to the prisoner and admit him to the sick bay. If his condition deteriorated, or was too serious for the limited resources of such a small site, he would be sent on to a larger hospital, such as New Norfolk. In Bermuda, although a similar pattern existed, the sick bays aboard convict hulks were more substantial than the huts used as temporary hospitals for Vandemonian prisoners. Aboard the hulks, surgeons could treat their patients almost as if in a hospital on land; indeed, many patients were admitted to the Royal Naval Hospital simply for a change of air, or because conditions aboard ship were too cramped or noisy to be advantageous for health. Bermudian surgeons, however, were unlikely to attempt any operative procedures in the sick bay,

[819] While amputation would appear to be the epitome of agonising surgical procedures, it was not unknown for suffering patients such as Richardson to beg reluctant surgeons to operate. On the other hand, it was also not unknown for (convict, naval, or military) patients to feign diseases which occasionally and unintentionally ended in amputation – the relatively common ploy of irritating wounds to keep them open, thus prolonging treatment, sometimes ended with the wound so severely infected that amputation was the only option (J. Cheyne, 'Medical Report on the Feigned Diseases of Soldiers', *The Dublin Hospital Reports and Communications in Medicine and Surgery* (vol. 4, Hodges and M'Arthur, Dublin, 1827), p. 131; TAHO, *RDH: James Richardson* (HSD 246/1/4-6/2).

preferring instead to transfer their surgical patients to the larger hospital facilities. The single exception was the procedure of catheterisation, (which will be discussed in further detail below).

Table 5 (below) illustrates the comparative rates of blistering, cupping and scarification, venesection, and the insertion of issues and setons in the three hospitals. New Norfolk doctors were most enthusiastic of the three institutions in their prescription of blistering; this treatment was recorded for thirty-nine percent of their patients, while this rate dropped to just thirteen percent at St Bartholomew's. The Bermudian institution prescribed the highest rate of venesection, with thirty-three percent of patients undergoing bloodletting, while twenty-three percent of New Norfolk patients and just seven percent of St Bartholomew's patients received the same treatment. At both the New Norfolk Hospital and St Bartholomew's, between twenty and twenty-five percent of patients in the samples underwent cupping and scarification, while just thirteen percent of Bermudian patients received this treatment. Less than one percent of Bermudian patients, however, received either a seton or an issue as part of their treatment, while they formed part of the treatment for around three percent of admissions to St Bartholomew's and New Norfolk.

Treatment	New Norfolk Hospital, Van Diemen's Land	Royal Naval Hospital, Bermuda	St Bartholomew's Hospital, London
Blistering	158 (39% of all patients)	112 (27% of all patients)	24 (13% of all patients)
Cupping/Scarification	100 (25%)	55 (13%)	41 (22%)
Issue	9 (2%)	1 (less than 1%)	1 (less than 1%)
Seton	4 (1%)	1 (less than 1%)	5 (3%)
Venesection	92 (23%)	181 (33%)	13 (7%)

Table 5: Comparison of rates of physical treatments between New Norfolk Hospital, Royal Naval Hospital in Bermuda, and St Bartholomew's Hospital

These differences can be related to the types of conditions blistering and blood-letting were intended to treat. Blood-letting, by reducing the volume of blood in the body, discharged excess heat, thereby reducing inflammation. Accordingly, it was a common treatment for fever and other forms of inflammation frequently suffered in warmer climates such as Bermuda.[820] Blistering, as discussed above, was used as a counter-irritant; by intentionally producing a cutaneous disease, surgeons hoped to draw away morbid matter and alleviate internal maladies. Like venesection, blistering was used to reduce inflammation, but while veins were opened with the intention of relieving general systemic irritation, blistering was used to diminish localised inflammation. Rheumatism is a prime example of the type of condition targeted with blistering, and, being a disease associated with cooler climates, this treatment was accordingly prescribed to a larger number of patients in New Norfolk. While patients at St Bartholomew's also experienced colder conditions, similar to those encountered at New Norfolk, rates of blistering were lower in the London institution as blistering was not generally used to treat the particular types of diseases recorded in the notes.[821]

A small proportion (between three and four percent) of patients at New Norfolk and St Bartholomew's received a seton or issue whilst under treatment. At St Bartholomew's Hospital, one patient was ordered an issue, but took fright at the thought of the procedure and fled the ward before the seton-needle could be produced.[822] Interestingly, no Royal Naval doctors refer to inserting either setons or issues into any of their patients. Although both methods of treatment gradually sank out of favour as the nineteenth century progressed, this does not appear to be the cause of their absence within these samples, as the case notes from the Royal Naval Hospital were written in the 1830s, prior to the New Norfolk Hospital records. As will be seen

[820] Dunglison, *Medical Lexicon*, p. 106.
[821] Circulatory diseases formed the bulk of St Bartholomew's admissions used in this sample, due to the particular interest of the surgeon (Dr Edward Latham Ormerod) who wrote the notes. See Chapter four for further detail.
[822] This patient was David Cousins, "a well made man of pretty full habit of body with white hair and black eyes" – Cousins' hair had turned completely white, including his eyelashes, when he was fifteen years of age (SBHAM, SBH, *Medical and Surgical Case Notes: David Cousins* [MR 16/6/77]).

below, it may be the case that Royal Naval doctors were simply reluctant to open the patient's body through surgical procedures unless absolutely necessary.

Issues and setons were often used to treat obstinate inflammatory disorders, such as chronic headaches and ophthalmia, as well as epilepsy and abdominal complaints – diseases and conditions which occurred at all three hospitals examined in this study.[823] They were, however, only used after other treatments had been attempted without success, largely because the procedure entailed creating a large, open sore, usually on the temple or the nape of the neck which was both uncomfortable and unsightly. Many patients were unsurprisingly opposed to a treatment which entailed bearing, for an undefined but extended period of time, a publicly visible mark of illness such as that represented by a seton or an issue. William Madley, the St Bartholomew's patient mentioned above, certainly experienced the physical discomfort and aesthetic distaste associated with setons. Although Ormerod was pleased with his patient's progress, commenting that he had "gained in flesh, in health & strength," the surgeon also sympathised with the ongoing difficulties which resulted from the seton left in Madley's neck when he was discharged from the hospital. While Madley had regained much of the powers of motion and sensation in his lower limbs, he was forced to walk "rather stiffly throwing his toes up in the air, and as the poor fellow has to hold his neck straight on account of the seton he has a rather military air."[824]

[823] Dunglison, *Medical Lexicon*, p. 681.
[824] SBHAM, SBH, *Medical and Surgical Case Notes: William Madley* (MR 16/6/85).

A large number of nineteenth-century patients experienced bleeding or blistering. It was a smaller group, however, who underwent more serious treatments – patients such as James Blackman whose lives depended upon the sharpness and certainty of the surgeon's lancet. These procedures were attempted only when all other options had been exhausted; as surgeon and anatomist John Hunter declared, surgery should be employed only "when nothing but operations will relieve."[825] It was the heavy responsibility of the surgeon to decide when an operation was necessary, but it was the role of the patient to refuse or to consent to it. Unsurprisingly, patients were generally reluctant to submit to the surgeon's knife, even when they understood that it was their last hope of survival. Aware of the indescribable pain which accompanied such procedures, most refused to consent to any form of operation until they were so weakened by disease, infection, or blood loss that their chance of living through the surgery was greatly decreased.[826]

These procedures ranged from relatively routine operations such as the incision of ulcers to terrifying procedures such as amputations.[827] Unlike the physical treatments outlined above, most of the surgical procedures are self-explanatory and do not require much additional clarification. A great deal of insight, however, can be gained from an examination of the reasons behind variations between the rates at which different procedures were performed at each institution, as presented in Table 6.

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[825] J. Hunter, cited in Digby, *Making a Medical Living*, p. 89.
[826] Digby, *Making a Medical Living*, pp. 83-84.
[827] See, for example, N. Rice, *Trials of a Public Benefactor: as Illustrated in the Discovery of Etherization* (Pudney and Russell, New York, 1859), pp. 41-44, for informative, if theatrical, descriptions of several surgical cases.

Procedure	New Norfolk Hospital, Van Diemen's Land	Royal Naval Hospital, Bermuda	St Bartholomew's Hospital, London
Amputation	4	-	-
Catheter	5	9	6
Division of prepuce	1	-	-
Draining/incision of abscess, wound or ulcer	8	-	-
Eye operation	4	-	-
Ingrown toenail	1	-	-
Tapping of abdomen	-	-	1
Total	**23** (5.7% of all patients)	**9** (2.1% of all patients)	**7** (3.8% of all patients)

Table 6: Surgical procedures used in treating patients at the New Norfolk Hospital, the Royal Naval Hospital in Bermuda, and St Bartholomew's Hospital

As illustrated in Table 6, surgeons at New Norfolk Hospital clearly performed a much higher number – over three times as many – operations as surgeons at the Bermudian and London institutions. At a fundamental level, variations in rates of surgical procedures between the three hospitals are largely attributable to differences in the implementation of the health care systems between the three locations. The case notes from St Bartholomew's Hospital are essentially those from a medical ward, which results in few records with any mention of surgical procedures. Cases requiring more serious operations would have been admitted to the surgical wards, as would emergency cases requiring surgical intervention (such as those necessitating amputations).

The exception is the commonplace and relatively minor operation of inserting a catheter, which was a procedure undertaken with relative frequency in all three hospitals. A silver catheter,

between ten and eleven and a half inches long, was considered to be the best choice for adult male patients, with other sizes and shapes selected for female patients, and young children. Accordingly, most surgeons possessed a set of catheters of varying sizes and widths to allow them to select the appropriate instrument for each case.[828] While a wide array of variously curved catheters was available, many practitioners used straight catheters or those with a short curve at the extremity, as they allowed the instrument to be easily rotated and better followed the natural path of the urethra.[829] A celebrated advance in urology occurred with the introduction of the flexible elastic catheter, which consisted of woven silk tubes, coated with gum elastic. Whichever type of catheter was selected, it would be well-oiled and passed through the urethra into the bladder while the patient remained in a reclining position.[830] The procedure was often repeated once or twice a day as necessary, until the patient regained bladder control.[831]

It is significant to note that this procedure did not entail cutting or opening the body, thus reducing the risk of infection and blood loss.[832] Despite this, catheterisation was certainly considered to be a surgical operation, and was routinely referred to as such in patient case notes.[833] The importance and regularity of this procedure can be illustrated by an inventory of articles sent to Van Diemen's Land in 1828, which included a number of instruments for easing strictures and draining the bladder, such as curved trocars, flexible metallic bougies, and urethra syringes alongside the standard silver catheters and elastic gum catheters.[834]

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[828] S. Cooper, *A Dictionary of Practical Surgery* (vol. 1, Harper and Brothers, New York, 1836), p. 276.
[829] Syme, *The Principles of Surgery*, p. 379.
[830] Cooper, *A Dictionary of Practical Surgery*, p. 277.
[831] Syme, *The Principles of Surgery*, p. 379.
[832] Although the risk of infection was lower for cathetarisation, it remained a significant hazard as the procedure involved the insertion of instruments (which were, of course, unsterilized) into the body.
[833] See, for example, SBHAM, SBH, *Medical and Surgical Case Notes: Michael Sullivan* (MR 16/6/140a).
[834] *Historical Records of Australia* (vol. 7, Library Committee of the Commonwealth Parliament, Sydney, 1922), p. 61.

To enable comparison of rates of diseases and treatment methods between hospitals, patients within the sample group were classified into either surgical or medical categories, according to their diagnostic labels.[835] These categories were based upon Guenter Risse's study of the Royal Infirmary of Edinburgh (see Table 7, below).[836]

From these figures (see also Figure 15, below), it can be seen that although New Norfolk Hospital treated a larger proportion of accident and trauma cases, the Royal Naval Hospital saw more ulcers and abscesses within its wards. As patients in both institutions were employed in hard labour, performing tasks with considerable risk of injury (such as breaking rocks, dragging logs, or quarrying limestone) it is reasonable to expect a moderate number of accident cases in both hospitals. The discrepancy between the two institutions can perhaps be explained by the differences in the administrative systems outlined above. Convict patients could be treated for longer aboard the hulks, allowing minor traumatic injuries to resolve without the need for hospital admission. Obstinate or more serious conditions, however, were likely to fester and develop into chronic conditions which often required hospital admissions due to their long treatment time.

[835] These labels were applied by the surgeons treating the cases.
[836] G. Risse, 'Hospital History: New Sources and Methods' in R. Porter and A. Wear (eds.), *Problems and Methods in the History of Medicine* (Croom Helm, Kent, 1987), pp. 175-203.

Disease or Condition	New Norfolk Hospital, Van Diemen's Land	Royal Naval Hospital, Bermuda	St Bartholomew's Hospital, London
Traumatic conditions			
Contusion	6	6	-
Fracture	9	7	-
Wound	8	-	1
Head/brain injury	-	2	1
Poisoning	-	1	1
Accident	-	2	-
Dislocation	-	1	-
Burn	2	-	-
Tumours and cancers			
Scrofula	6	4	-
Tumour	1	2	3
Surgical infections			
Ulcers	16	18	1
Abscess	1	3	4
Miscellaneous surgical conditions			
Hernia	4	1	-

Table 7: Surgical disease categories for patients at the New Norfolk Hospital, the Royal Naval Hospital in Bermuda, and St Bartholomew's Hospital[837]

All three hospitals saw relatively similar numbers of scrofula and tumours, although St Bartholomews' records do not mention any cases of scrofula. New Norfolk saw a proportionally larger number of hernia cases when compared to the other two institutions. Differences between the two insitutions could be due to the more relaxed transportation guidelines for Vandemonian convicts compared to their Bermudian counterparts. As discussed in Chapter

[837] For explanation of terms, see Glossary of Diseases and Conditions.

Four, while chronic medical conditions, physical disability, and old age were no barrier to transportation to the Australian colony, only convicts who were "in perfect health, and are declared by the surgeon to be of sound constitution," were selected for labour in Bermuda.[838] This may have resulted in a larger number of convicts with pre-existing disorders – such as hernia – arriving in Van Diemen's Land than in Bermuda. These regulations also meant that the convicts in the Australian colony were, as a group, likely to be older than those labouring on the Bermudian fortifications. As the age of the convicts increased, so too did their likelihood of experiencing a range of medical problems, including hernias and chronic infections such as ulcers and abscesses.

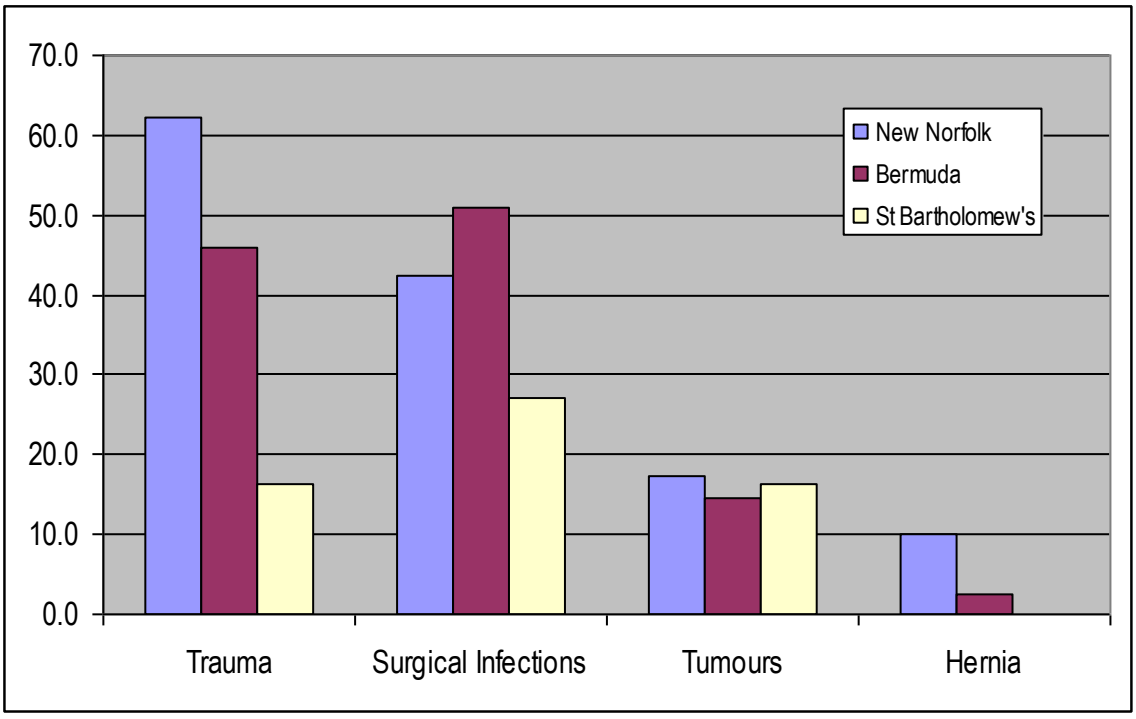

Figure 55: Comparison of rates of surgical complaints per thousand cases at New Norfolk Hospital, the Royal Naval Hospital in Bermuda, and St Bartholomew's Hospital

As is apparent from a comparison of diseases between the three institutions, the lack of patients from St Bartholomew's in many of these surgical categories is more a result of the skewed

[838] B. Earnshaw, 'The Lame, the Blind, the Mad, the Malingerers: Sick and Disabled Convicts within the Colonial Community', *Journal of the Royal Australian Historical Society*, 81 (1995)', p. 28; C. Hollis-Hallett, 'Bermuda's Convict Hulks', *Bermuda Journal of Archaeology and Maritime History*, 2 (1990), p. 98.

sample than a reflection on the type of cases admitted to the institution. The personal interests of Dr Ormerod, the author of the notes from St Bartholomew's, in diseases of the heart meant that many of his case notes dealt with circulatory conditions. Even those which were not related to conditions associated with heart and circulatory diseases were often recorded because they featured particularly 'interesting' or unusual characteristics. The proportionately higher number of patients recorded suffering from tumours may, therefore, be due to their atypical or abnormal presentation, which prompted Ormerod to note their treatment and progress in his journal.

A Rare Occurrence

Just after midnight two days after James Blackman's leg was amputated, the wound began to haemorrhage.[839] Brock was woken abruptly from his sleep; clumsily pulling on some clothes, he rushed across the courtyard to the ward. Having applied some fresh bandages, the bleeding seemed to cease, only to suddenly flow again around four o'clock in the morning. Staunching this new haemorrhage, Brock stumbled back to bed. At ten o'clock, he peeled back the dressings to find Blackman's leg swollen and the sutures pulled taut. Brock cut the stitches and replaced the dressings, heartened when no fresh bleeding occurred.

Over the next few days, Blackman's wound appeared to be healing. Although the dressings were discoloured with pus and the stump was swollen, no blood stained the bandages. Brock ordered Blackman's dressings not to be removed, but upon uncovering the wound found that the flaps had become "partially separated in the situation of the bone."[840] Blackman slipped into delirium, unable to take food or broth or answer a question coherently. He remained insensible until the

[839] TAHO, *RDH: James Blackman* (HSD 246/1/6/162).
[840] TAHO, *RDH: James Blackman* (HSD 246/1/6/162; HSD 246/1/6/167).

evening, when he revived sufficiently to take some wine. After a restless night, Brock wrote with relief that his patient "has taken his breakfast with an appetite [and] is perfectly coherent."[841]

From this point on, Blackman's story is a happy one. His wound began to granulate healthily, and in mid-June, three months after the operation which removed his leg, Brock recorded with satisfaction that the "unhealed portion of the stump now not much larger than half a crown, and is daily decreasing."[842] By August the leg was completely healed, and Blackman was impatiently awaiting the arrival of a wooden leg. Perhaps surprisingly, he was to be discharged back to Mr Murdoch, his old master who had brought him to New Norfolk six months earlier.[843]Blackman seems to have quickly become accustomed to his artificial limb, as within a month of leaving hospital, he had already been reprimanded twice for absconding. After a couple of minor misdemeanors, he received his Conditional Pardon in 1853, after which James Blackman quietly fades from the colonial records.

James Blackman was one of a relatively small group of patients who underwent surgical treatment in a nineteenth-century hospital. The emphasis upon the apparently crude nature of surgical treatment during this era has led to an over-amplification of the role of surgery in nineteenth-century medicine. Of the nine hundred and ninety-nine patients examined in this sample, just thirty-nine underwent a major surgical procedure. The dangers associated with opening the human body – the most common of which was the ever-present risk of infection – meant that using surgery to effect a cure was generally more hazardous than doing nothing at all. If disease proved fatal, at least the patient had died without suffering the agony and uncertainty of surgical intervention.

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841 TAHO, *RDH: James Blackman* (HSD 246/1/6/167).
842 TAHO, *RDH: James Blackman* (HSD 246/1/6/178).
843 TAHO, *RDH: James Blackman* (HSD 246/1/6/178).

The strong influence of the humoural theory, however, ensured that physical treatments such as venesection, blistering, cupping, and blistering remained popular. While these treatments were no longer taken to the heroic lengths seen in earlier periods, and other physical remedies such as the insertion of setons and issues were gradually sinking out of favour, blood-letting in all its manifestations were familiar to both practitioners and patients alike. While blistering was clearly more frequently prescribed in cooler climates such as Van Diemen's Land, and venesection was more common in the warmer environment of Bermuda, all three institutions regularly prescribed physical treatments for almost all of their patients. Despite this frequency, it is quite possible that Blackman was the only one of this group of patients to experience the failings and benefits of anaesthesia. The rapid expansion of knowledge in chemistry and biology was, however, fuelling advancement in drug treatments which was perhaps even more innovative than that occurring in surgical arenas.

Chapter Six

Medical Treatments

In the sharp chill of the winter of 1847, John Warring began coughing up blood. For the past few weeks, the thirty-one -year-old ploughman from Buntingford, Hertfordshire, had felt the niggles of a developing cold; not surprising, considering the amount of time he spent outdoors on days so icy his breath hung white in the air. Initially he ignored the heaviness in his head, the aches and the lethargy, passing them off as the lingering results of a bizarre accident five months earlier when a horse had fallen on him while he slept, breaking his arm and leaving him unable to work.[844] But the blood, staining his handkerchief a deep, crimson red, jolted him from his apathetic dismissal.

Warring sought the care of a doctor, who prescribed him various medicines over the course of the following four months. These occasionally checked the sharp cough and the frightening expectoration of blood, but did not entirely quell the symptoms. In the last week of November, Warring found his body wracked with shivering and his limbs weak and aching, with the

[844] Tasmanian Archive and Heritage Office, *Royal Derwent Hospital: John Warring* (HSD 246/1/4-6/140).

throbbing "pain in his knees compelling him to leave work."[845] His suffering compounded by a persistent tenderness and swelling in his abdomen, he languished in bed for the next two days, tentatively fingering the hard mass of his liver. By the third day, however, he could no longer lie down, a sense of suffocation oppressing his breathing as anasarca began swelling his lower limbs.[846]

It was not until one evening late in January, 1848, that Warring was admitted to the New Norfolk Hospital. Although his dark complexion had yellowed and the swelling of his legs slowed his walk to a painful shuffle, Warring's five foot nine inch, well-proportioned frame remained nonetheless impressive as he slowly entered the gloomy ward.[847] Still unable to lie down, he sat uneasily in a chair, feet raised, as Dr Brock placed the stethoscope on his chest. Despite his hurried breathing and the rapid action of his heart, Warring's lungs were clear. His abdomen was distended, "but not so to prevent a hard and prominent tumor being felt in the epigastric region;" Warring wincing as Brock probed the boundaries of the inflammation.[848] Pressing his finger into the skin of his patient's swollen lower limbs, Brock watched as the hollow left by the touch remained for several minutes before slowly being restored.
The treatment of anasarca was heavily based on the actions of medicines.[849] Brock's first objective was to remove the source of the disease; however, in Warring's case, with the disease so advanced and its onset a distant memory, he focused instead on eliminating the build up of serous fluid flooding the cellular tissue of his patient's body before it began to seep into Warring's thorax, effectively drowning him. Forced to decide between the surgical treatment to drain away the fluid and the medicinal treatment which sought to stimulate his patient's body to

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[845] TAHO, *RDH: John Warring* (HSD 246/1/4-6/140).
[846] Anasarca was commonly known as dropsy (see the Glossary of Terminology).
[847] TAHO, *Conduct Registers of Male Prisoners Arriving in the Period of the Probation System: John Warring* (CON 18/1/5/149); TAHO, *RDH: John Warring* (HSD 246/1/4-6/140).
[848] TAHO, *RDH: John Warring* (HSD 246/1/4-6/140).
[849] In particularly severe cases, the skin would be punctured to allow the collected fluid to drain away in a procedure known as tapping. Surgical procedures such as this, however, were only attempted as a last resort, due to the risk of opening the body and exposing it to infection (D. Zuck, 'John Snow and the Paracentesis of the Thorax', *The History of Anaesthesia Society Proceedings*, 30 (2002), p. 54).

absorb its excess secretions, Brock chose the less risky of the two options. By "exciting certain serous excretions" using medicines, the dropsical fluid saturating Warring's lower body would be absorbed into the blood stream, where it could easily be drained "by one or other of the common excretions."[850]

Writing in the Latin which was the accepted form of recording prescriptions, Brock began Warring's treatment with the stimulant *Massae pilulae hydrargyri* – mercury, commonly known as the ubiquitous 'blue pill'.[851] He added *Pulvaris scillae* (powdered sea onion, or squill), a strong diuretic, expectorant and diaphoretic used to stimulate the secretary organs.[852] Used in conjunction, mercury and *scillae* were credited with the ability to clear the bowel of blockages, allowing surplus fluids to drain away naturally.[853] *Spiritus ammoniae aromaticus* (aromatic spirits of ammonia) and *Mistura camphorae* (camphor) were given to stimulate Warring's weak system under the effects of *Tinctura colchici* (tincture of meadow saffron), a drug which acted as an emetic, cathartic and diuretic, but which was also highly toxic if incorrectly used.[854] One eighth of a grain of morphine was ordered to relieve the aching pain of Warring's swollen legs, and allow him to relax into restorative sleep.[855] Brock also prescribed a second mercurial, *Unguenta hydrargyri* (mercury ointment), "to be rubbed night and morning in the region of the right lobe of the Liver."[856] Finally, to promote the flow of excess fluid from Warring's system, his skin was to be scarified and bled.[857]

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[850] W. Cullen, *First Lines of the Practice of Physic* (2nd ed., vol. 2, Bell & Bradfute, Edinburgh, 1808), p. 390.
[851] S. Potter, *A Compendium of Materia Medica, Therapeutics and Prescription Writing* (P. Blakiston's Son, Philadelphia, 1902), at <http://www.henriettesherbal.com/eclectic/potter-comp/hydrargyrum.html> accessed 8 January 2010.
[852] G. Risse, *Hospital Life in Enlightenment Scotland* (Cambridge University Press, Cambridge, 1986), p. 381; H. Felter and J. Lloyd, *King's American Dispensary* (The Ohio Valley Co., Cincinnati, 1898), also at <http://www.henriettesherbal.com/eclectic/kings/ urginea-mari.html>, accessed 18 September 2007.
[853] R. Thomas, *The Modern Practice of Physic* (4th ed., Longman, Hurst, Orme, Rees and Brown, London, 1813), p. 465.
[854] Risse, *Hospital Life*, p. 381; Felter and Lloyd, *King's American Dispensary*: *Colchicum*, at <http://www.henriettesherbal.com/ eclectic/kings/colchicum-autu.html> accessed 26 October 2006.
[855] G. Hamilton and T. Baskett, 'In the Arms of Morpheus: The Development of Morphine for Postoperative Pain Relief', *Canadian Journal of Anaesthesia,* 47 (2000), p. 369.
[856] J. Murray, *A System of Materia Medica and Pharmacy* (2nd ed., vol. 2, John Anderson & Co., Edinburgh, 1813), pp. 393-396.
[857] See Chapter five for details on physical methods of treatment.

The next morning, Warring spoke in glowing terms of the medicines, especially the morphine. To his great relief, the drugs had allowed him to sleep lying down for the first time in nine weeks.[858] Over the next few days Warring's condition improved; as January gave way to February, he continued to enjoy restful sleep while lying in bed, "breathing without inconvenience and feeling much lighter about the stomach."[859] The day after this positive report, however, Warring was again gasping for breath, his shoulders hunched and his widened eyes staring anxiously. In a cycle which would repeat over the following weeks Brock prescribed more morphine, which allowed his patient to rest until dawn when the drug's effects began to wane and Warring's breathing again became laboured.

Brock continued with the draught composed of mercury, *scillae*, camphor and morphine. As the days passed, with Warring bartering dependency on morphine for freedom of breathing, Brock increased the drug to a quarter of a grain. His patient continued to "experience marked relief" from the mixture.[860] For two weeks Warring's condition wavered precariously, the medicines holding his symptoms at bay but unable to rid him entirely of the oppressive swelling. Just days later, however, Brock wrote grimly that Warring was "worse in every respect."

The extended use of mercury had caused salivation, which dribbled unchecked down Warring's chin, yellowing his clothing and bed sheets. The swelling had gradually crept up to his torso, oppressing his breathing still further. A change of medicine was called for. Brock retained the meadow saffron, *scillae*, morphine and camphor, but replaced the mercury with s*piritis aetheris nitrosi* (sweet spirit of nitre, or spirits of nitrous ether), also known for its ability to stimulate the kidneys.[861] He also added a cathartic mixture to further encourage purging from Warring's

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858 TAHO, *RDH: John Warring* (HSD 246/1/4-6/141).
859 TAHO, *RDH: John Warring* (HSD 246/1/4-6/141-HSD 246/1/4-6/142).
860 TAHO, *RDH: John Warring* (HSD 246/1/4-6/142).
861 J. Scudder, *The American Eclectic Materia Medica: Spiritus Aetheris Nitrosi* (1870), at <http://www.henriettesherbal.com/eclectic/scudder1898/aetheris_spir_seda.html> accessed 14 April 2009.

bowels. By the next day, to the relief of both patient and doctor, the new combination of medicines had eased Warring's symptoms markedly.

The period of Warring's hospitalisation – and, more widely, the period encompassed within the patient notes used in this research – was a time of great change within medicine. In the early nineteenth century, practitioners were still influenced by the generally noninterventionist position of earlier centuries, in which, as practitioner Francis Home stated, doctors should first allow nature to cure their patients before interfering with any form of treatment.[862] All medicines were prescribed with the intention of supporting the patient's own system while it healed itself, rather than hoping the drugs would enact the cure in isolation.

New Challenges to Old Prescriptions

Since the late eighteenth century, a slow but revolutionary transformation had been occurring within the pharmacopoeias of physicians, the notebooks of medical students, and across the shelves of apothecaries' shops. Ancient and medieval remedies based on human and animal fat, urine, blood and milk were gradually giving way to innovative new preparations founded on advancements in chemistry and biology.[863] As science increased its scope of influence, its place becoming progressively more entrenched within the medical discipline, the traditional emphasis upon rest, diet, and the importance of humoural balance began to lose its omnipotence.

Medicines which were supported by the increasingly influential discipline of science began to assume a greater position in the tasks of practitioners. These drugs, however, were prescribed

[862] F. Home, *Clinical Lectures* cited in Risse, *Hospital Life*, p. 177.
[863] D. Cowen, 'The Edinburgh Pharmacopoeia', *Medical History*, 1 (1957), pp. 125-127.

within the framework provided by the traditional humoural system of medicine. In this way, the humoural system of understanding could be legitimately continued, supplemented as it was by more innovative discoveries regarding the uses and actions of drugs. This smoothed the transition between humoural and scientific ways of 'doing medicine'. Consequently, medicines were categorised within pharmacopoeias and prescribed by physicians according to their actions in rebalancing the body's humours. The common purpose of medical treatments, particularly drugs, was to carry off stagnating matter from the body, which would otherwise cause inflammation and illness. This acted to improve circulation, increase the absorption of nutrients into the body, and generally hasten the restoration of vitality to the patient's weakened constitution.

Patients – whether gentlefolk under the care of eminent physicians, or labourers waiting on hard wooden benches for their few minutes with the house surgeon of a sprawling urban hospital – began to see medicine as an integral part of their treatment. Despite having been lectured as medical students on the importance of allowing nature to heal before attempting to cure a patient with medicines, hospital surgeons were in the ambivalent position of needing to treat patients more intensively than custom dictated. The ill came to hospital to be treated; here they expected to receive more rigorous therapy than that to which they would otherwise be exposed.[864] Patients began to prefer paying for drugs than mere advice; doctors were increasingly met with patients who expected to leave clutching some form of medicine, or, at the very least, a scrawled piece of paper instructing the apothecary which remedies to dish out.[865]

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[864] Risse, *Hospital Life,* pp. 179-180

[865] A. Digby, "A Human Face to Medicine': Encounters Between Patients and General Practitioners in Britain, 1850-1950', *Medizin Gesellschaft und Geschichte*, 21 (2003), p. 98; R. Porter, *The Greatest Benefit to Mankind: A Medical History of Humanity from Antiquity to the Present* (Fortuna Press, London, 1999), p. 268.

As oil of earthworms, unicorn's horn, spiders' webs, and moss grown on decaying human skulls were gradually disappearing from pharmacopoeias, herbal ingredients lingered on as the mainstay of most prescriptions. Botanic elements were used by hospital surgeons as well as 'home doctors', all of whom valued the importance of a regulated digestive system to a generally well-balanced body. Supplementing these foundational botanic ingredients – and increasingly supplanting them – were new compounds, particularly mineral and metallic based elements. Drugs with antimony and mercury bases found popularity as purges, although both were used extensively in various forms for a large number of diverse conditions.[866] Aside from their apparently superior efficacy and strength, chemical medicines were generally much more palatable than the often-bitter draughts made from herbal ingredients, and they had the additional benefit of remaining fresh and potent for longer than their botanic counterparts.[867] Chemistry also allowed the raw ingredients of herbal medicines to be analysed and their active components isolated and extracted. The therapeutic effects of these purified forms of drugs such as strychnine (from *Nux vomica*) and atropine (from *Belladonna*) were much stronger than their original forms, requiring minute doses for powerful reactions.[868]

These new and effective medicines, and the science which gave them life, presented a challenge to humoural-based theories of health and sickness. Not only did these drugs demand a rethink of traditional pharmaceutical categories, they required an entirely new system of classification – both theoretical, in the minds of apothecaries and doctors, and practical, in the pages of pharmacopoeias which were utilised across the world.

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[866] See the Glossary of Terminology for explanation of terms.
[867] B. Griggs, *New Green Pharmacy: The Story of Western Herbal Medicine* (Vermilion, London, 1997), p. 112.
[868] G. Haines, *'The Grains and Threepenn'orths of Pharmacy': Pharmacy in N.S.W. 1788-1976* (Lowden Publishing Co., Kilmore, 1976), pp. 47-48.

Specific Medicines[869]

Despite the geographical isolation of the hospitals of Bermuda and New Norfolk, their colonial surgeons were, on the whole, surprisingly well equipped. A stock of over one hundred and fifty types of medicines and treatments were administered (either individually or combined into compound concoctions) to the patients admitted to the three institutions, ranging from ointments, liniments and poultices to extracts, tinctures and pills. From the nine hundred and ninety nine cases examined for this research, many valuable individual narratives describing patients' experiences with medicines can be brought together, offering a great deal of insight into the wider medicinal treatments in the mid-nineteenth century.

Until the late eighteenth century, medical treatment had traditionally been tailored to the individual. As each patient had a unique constitution, each was expected to respond differently to the onset of disease, complicating diagnosis, prognosis, and outcome. Medical professionals made individual recommendations for each client, with each patient's requirements for rest, diet and exercise considered in isolation. Although medicines were utilised, they were intended to supplement the more general regulating of the patient's life with the ultimate aim of bringing the humours into perfect equilibrium – the recipe for good health.

Due to this individualised approach, medical treatment resisted easy categorisation or standardisation.[870] Practitioners did, however, utilise two broad therapeutic strategies when faced with different groups of diseases: one designed to stimulate the patient's system, the other to

[869] This section is by no means a complete examination of each medicine used in the three hospitals; such an exhaustive analysis is far beyond the scope of this research. However, every medicine used within the hospital case notes is documented and described in the Glossary of Medicines and Treatments.
[870] Risse, *Hospital Life*, p. 180.

soothe and sedate it (see Table 5).[871] If a patient presented with warm, flushed skin and a rapid pulse, he would be diagnosed as exhibiting symptoms of pathological arousal which required a sedative regime to equalise his system. Conversely, a pale, lethargic patient with a slow pulse and respiration would require stimulating treatments to correct his depressed constitution. Table 8, based on Risse's analysis of treatment at the Royal Infirmary of Edinburgh, delineates the basic elements of each regimen.[872]

	Sedative Regimen	**Stimulant Regimen**
Diet and Beverages	Abstinence or low, vegetable-based diet with cooling drinks such as cream of tartar and barley water	Full diet (including meat) with warming drinks such as wines, liquors and beers
Medicines	Cathartics Diaphoretics Diuretics Emetics Expectorants Emollients Narcotics	Astringents Bitters and tonics Diaphoretics Diuretics Emetics Expectorants Sialagogues
Physical Treatment	Blood-letting Cold and warm water baths Blistering Poultices and fomentations Rubbing	Cold and warm water baths Blistering, setons and issues Local heat and rubbing Fomentations Electricity
Other Treatment	Rest in a well-ventilated and darkened room; avoidance of exercise	Exercise

Table 8: Comparison of sedative and stimulant treatment regimens[873]

[871] Risse, *Hospital Life*, p. 181.
[872] Risse, *Hospital Life*, pp. 181-182.
[873] See the Glossary of Terminology for explanation of terms.

Despite the difficulty of classifying medicines, recognising the importance of some type of systematic order within the *Materia Medica*, physicians generally grouped medicines according to their effects on the body. Predictably, ardent debate occurred over the number and nomenclature of these groups; however, the following categories delineate the basic groups of drugs utilised by St Bartholomew's Hospital, New Norfolk Hospital, and the Royal Naval Hospital in Bermuda.

Anodynes

This group of medicines were classed as sedatives; by relieving pain and allowing rest, they depressed and soothed patients' tortured systems. Not surprisingly, they were among the most popular of the nineteenth-century surgeons' drugs.

The most notable of the anodynes was opium (*Papaver somniferum*), a widely used and accepted medicine.[874] While generally administered in a pill or draught, opium could also be prescribed as a wine to relieve irritable coughs,[875] an enema to reduce inflammation by drawing 'poisons' away from the site of disease, or as an ointment to relieve the pain of rheumatism or muscular injuries.[876] Among the more common forms of opium were mixtures such as Dover's powder and laudanum, both easily obtained and happily consumed by all levels of society in Britain and its colonies.[877] Morphine acetate (morphine salts) was also available, but due to its expense it did

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[874] Opiates were common in Britain and its colonies (P. Martyr, *Paradise of Quacks: An Alternative History of Medicine in Australia* (Macleay Press, Paddington, 2002), p. 35, p. 88, p. 97; J. Hagger, *Australian Colonial Medicine* (Rigby Limited, Adelaide, 1979), p. 151).

[875] This does not refer to opium *mixed with* wine, but opium *steeped in* wine (with cinnamon and cloves), then strained before administering to the patient. It had a pleasanter taste than *Tinctura opii*. Sydenham's laudanum was also referred to as Wine of Opium (R. Phillips, *A Translation of the Pharmacopoeia of the Royal College of Physicians of London, 1836* (S. Highly, London, 1837), p. 355.)

[876] Risse, *Hospital Life*, p. 379; Felter and Lloyd, *King's American Dispensary: Linimentum Opii*, at <http://www.henriettesherbal.com/eclectic/kings/papaver-somn.html> accessed 14 January 2010.

[877] J. Finch, *Pills, Potions and Politics: The Formation of the Pharmaceutical Society of Tasmania* (The Pharmaceutical Society of Tasmania, Hobart, 1991), p. 76; Hamilton and Baskett, 'In the Arms of Morpheus', p. 368.

not challenge the popularity of laudanum or other forms of opium until the hypodermic needle was perfected in the 1850s.[878]

Before the discovery of anaesthesia, opium was also commonly administered to ease the "pungent soreness" and "smarting of the wound" immediately after surgery.[879] When administered promptly after operations, opium allowed patients to rest in a comparatively comfortable oblivion until their wounds began to heal, or until infection carried them away. The drug could not, however, dull the agony of the operation while it was in progress; the size of the dose required for such an effect would be so fraught with danger that few, if any, surgeons would dare attempt its administration.[880]

Determining a safe dosage of opium was in any case a perilous business. In April 1848 Robert Adams, a forty-six -year-old actor, was admitted to St Bartholomew's Hospital with kidney disease, his anxious face and "large heavy" body bearing testament to the effects of his intemperate lifestyle.[881] His abdomen bloated with retained fluid, Adams was immediately prescribed diuretic medicines by Dr Ormerod. After a disturbed night, punctuated by vomiting and diarrhoea but little sleep, Adams lapsed into delirium, his face and neck suffused with blood, blushing his skin a dusky purple and staining his lips almost blue. In such a condition, administering opium would push Adams into an unconsciousness from which he was unlikely to wake. The patient, however, was delirious from lack of sleep. By dosing him with opium, Ormerod could ease his near-hysterical patient into the sleep he desperately craved – but it could come at the highest possible cost. For four long days, Ormerod deliberated. On the fifth day,

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878 Hamilton and Baskett, 'In the Arms of Morpheus', p. 369.
879 Surgeons B. Bell and J. Moore cited in Hamilton and Baskett, 'In the Arms of Morpheus', p. 368.
880 Hamilton and Baskett, 'In the Arms of Morpheus', p. 368.
881 St Bartholomew's Hospital Archives and Museum, St Bartholomew's Hospital, *Medical and Surgical Case Notes of Edward Latham Ormerod, Diseases of the Central Nervous System, Kidneys, Abdominal and Infectious Skin Diseases: Robert Adams* (MR 16/6/314).

he cupped Adams, relieving the stricken man of enough blood to reduce the congestion in his upper body – enough blood, Ormerod hoped, to allow the administering of opium. Almost immediately after the drug was swallowed, however, Adams sank into a deep sleep. At noon three days later, Adams quietly died. Ormerod had lost his gamble.

Cathartics

The type of medicine most frequently employed, both in hospitals by practitioners and at home by self-dosing sufferers, was cathartics. Sedative and stimulating plans of treatment mutually extolled the virtues of a purged gastrointestinal tract. As well as clearing morbid matter from the bowels, cathartics were believed to stimulate circulation of the blood in the lower body and assist the body to absorb nutrients through newly cleansed intestines.[882]

Cathartics were generally grouped according to the severity of their action. Laxatives were the gentlest of the cathartics, more often self-prescribed than hospital-administered. Purgatives and drastics, however, were perhaps the mainstay of the hospital surgeon's cache of medicines; most hospital patients underwent some form of cathartic treatment during their stay. Purgatives included *Extractum aloes* (extract of aloes), *Olei ricini* (castor oil), *Pulvaris jalapae compositus* (compound powder of jalap), and *Tincturae sennae* (tincture of senna), while drastics encompassed violent drugs such as *Extractum citrullus colosynthus* (extract of colocynth), *Extractum elaterii* (squirting cucumber), and *Scammonium* (scammony). The popularity of these cathartics was secured – among doctors, if less so among their patients – by the impressive visible results of their action.

[882] Risse, *Hospital Life*, p. 192.

Terrence Grey, a patient at the New Norfolk Hospital, experienced the powerful effects of scammony. He was admitted four days before Christmas, 1844, suffering from ophthalmia. Having already lost the sight of his left eye, his right was shadowed by a cataract and traversed by swollen red vessels. He was admitted to the hospital more for lack of a better option than for the need of medical treatment; there was little surgeons could do for ophthalmic conditions other than cleanse the eyes and, of course, the bowels. After being purged, vomited, cupped, bled, and enduring enemas and stinging local applications to his eyes, Grey's bowels were declared open, although his eyelids remained adhered together with a vile mixture of mercurial ointment and sticky pus. For twenty-four hours, however, Grey failed to visit the stool. Concerned for Grey's constitution, Dr Brock dosed his obstructed patient with scammony. The drastic acted swiftly, regulating Grey's bowels and purging his system of waste. While both Grey and his surgeon were thankful to have escaped more dramatic effects of the powerful drug, the dose did little for Grey's overall condition; after exactly two years at New Norfolk Hospital he was finally discharged to the Invalid Depot at Impression Bay "to try the effects of a change of air."[883] Other patients dosed with drastics were less fortunate – in cases of serious overdoses, violent vomiting and diarrhoea would be followed by abdominal pain, cooling extremities and a dangerously slow pulse.

Diaphoretics and sudorifics

As with all forms of purging from the body, the free drainage of the pores of the skin was considered to be of great importance. Doctors and scientists spent lengthy periods of time calculating the number of pores on the average human body, the amount of perspiration excreted from them, and the elements contained in the exuded fluid.[884] While suppressed or

[883] TAHO, *RDH: Terrence Grey* (HSD 246/1/1/8; HSD 246/1/1/58; HSD 246/1/1/147; HSD 246/1/4-6/24).
[884] Scudder, *The American Eclectic Materia Medica: Spiritus Diaphoretics*, at <http://www.henriettesherbal.com/eclectic/scudder1898/diaphoretics.html> accessed 14 January 2010.

impaired perspiration could cause illness, stimulating the body to perspire copiously through the use of sudorifics, or producing a gentle perspiration by using diaphoretics, was seen as an excellent preventative and curative treatment.[885]

Unlike cathartics and emetics, which purged the body, often leaving it debilitated, diaphoretics had the advantage of not unduly weakening the patient. Indeed, as they were considered to be generally soothing in their character, these medicines were often part of sedative treatment regimes. To augment the warming effects of the drugs, patients receiving diaphoretics were often bathed, fomented, and wrapped snugly in layer upon layer of blankets.

Popular sudorifics included *Mistura camphorae* (camphor) and opium, with diaphoretics such as *Guaiacum* (guaiac powder) and *Decocta sarsae* (decoction of sarsaparilla). Samuel Wootley, a thirty-one -year-old pass-holder admitted to the New Norfolk Hospital, received sarsaparilla as part of his treatment for syphilis.[886] After a restless night, his sheets soaked with perspiration as the drug cleansed his system, Wootley's condition seemed marginally improved. By the following week, the ulcers over his chest and legs were healing, and his throat was no longer tender when he swallowed. He remained in hospital for a further two months until, his convalescence complete, he was discharged.

Diuretics

Diuretics performed the crucial task of removing dangerous excess fluid from the body by stimulating the kidneys to produce increased quantities of urine. These medicines were generally used in cases of serious illness such as ascites, anasarca, and respiratory conditions, for patients

[885] Risse, *Hospital Life*, p. 196.
[886] TAHO, *RDH: Samuel Wootley* (HSD 246/1/6/59; HSD 246/1/6/108; HSD 246/1/6/163; HSD 246/1/6/177; HSD 246/1/6/228; HSD 246/1/6/231; HSD 246/1/6/244).

exhibiting symptoms such as the wheezing, cough and dyspnoea common to asthma, bronchitis and emphysema.[887]

The most frequently prescribed medicines in this category were *Antimonium* (antimony) and *Digitalis* (foxglove). Antimony, a violently irritant drug, was used commonly as a cathartic, emetic, and diaphoretic. A minute dose in susceptible patients was sufficient to cause immediate vomiting and profuse perspiration; if the drug was not rejected from the body through such purging, it would cause the patient agonising cramps, horrendous nausea, terrible burning sensations in the abdomen, and, in extreme instances, death through heart failure.[888] These alarming hazards saw the gradual abandonment of antimony in the late nineteenth century. During the early to mid-1800s, however, the drug was stocked behind every apothecary's counter and confidently prescribed by many hospital surgeons (including those in all three institutions examined here).

Digitalis was one of the most significant medicinal discoveries of the late-eighteenth century. Dr William Withering isolated the drug from the leaves of the foxglove, determined its dosage through bold experiments, and recognised its valuable diuretic effects.[889] While exalting its exceptional diuretic capacities, Withering also prudently warned fellow practitioners of the fickle nature of the drug. If a patient was administered sufficient digitalis to cause purging or vomiting, a fatal overdose was likely.[890] Smaller doses, however, provided a long-awaited and much-needed

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[887] Potter, *A Compendium of Materia Medica, Therapeutics and Prescription Writing: Antimonium*, at <http://www.henriettesherbal.com/eclectic/potter-comp/antimonium.html> accessed 15 January 2010; Risse, *Hospital Life*, p. 199.
[888] Griggs, *New Green Pharmacy*, p. 78.
[889] W. Withering, *An Account of the Foxglove, and Some of its Medicinal Uses* (G.G.J. and J. Robinson, London, 1785), p. 11.
[890] Griggs, *New Green Pharmacy*, p. 139.

remedy for cardiac dropsy and other forms of heart disease – conditions which, until the discovery of digitalis, could essentially not be treated.[891]

At the end of November, 1845, Henry Bowman was admitted to the wards of St Bartholomew's Hospital with ascites.[892] His face pale and anxious, he was suffering from pains across the loins and sacrum, coupled with blood-streaked diarrhoea.[893] The day after his admission, Bowman noticed that his lower legs were swollen; when Dr Ormerod probed his abdomen the region of the kidneys was found to be tender. A week later he was prescribed digitalis to combat the increasing oedema of his lower limbs. He remained in hospital for a further week, predominantly complaining of "weight and pain in his head," but largely convalescent from the attack of ascites.[894] Upon his discharge in mid-December, Bowman was "very much thinner since the commencement of his illness, but in good spirits," and, apparently, good health.[895]

Digitalis was also used to treat respiratory conditions, particularly in Bermuda. Late in 1832, ordinary seaman John Hayes was admitted from the *HMS Winchester* into the Royal Naval Hospital in Bermuda. Just twenty-two years of age, Hayes was suffering from a persistent bout of pneumonia. Although, as Dr Arthur Savage records, the "acute stage yielded to repeated bleeding, blisters, Cathartics, Antimony and Mucilaginous cough mixtures," aboard the *Winchester's* sick bay Hayes' skin grew "morbidly hot" and his pulse became frequent and small.[896] When his patient began wheezing, constantly troubled by a "very teazing" cough, Dr Savage

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[891] J. Pearn, A. Petrie and G. Petrie, 'An Early Australian Pharmacopoeia: A Drug List and its *Materia Medica* for an Australian Convict Settlement', *The Medical Journal of Australia*, 149 (1988), p. 633; Porter, *The Greatest Benefit to Mankind*, p. 270.
[892] See Glossary of Diseases and Conditions for explanation of terms.
[893] SBHAM, SBH, *Medical and Surgical Case Notes: Henry Bowman* (MR 16/6/220a).
[894] SBHAM, SBH, *Medical and Surgical Case Notes: Henry Bowman* (MR 16/6/221).
[895] SBHAM, SBH, *Medical and Surgical Case Notes: Henry Bowman* (MR 16/6/221).
[896] The National Archives, *Admiralty and Predecessors, Office of the Director General of the Medical Department of the Navy and Predecessors, Service Registers and Registers of Deaths and Injuries: Case Book, Royal Naval Hospital, Bermuda: John Hayes* (ADM 104/9, p. 00014).

administered digitalis, accompanied by a bitter and an anodyne (almost certainly opium). This mixture greatly relieved Hayes' breathing, making him sufficiently comfortable to be transferred to the larger, land-based hospital.

Some patients were placed on lengthy courses of digitalis to treat chronic conditions. Angus Smith, for example, a twenty-eight -year-old convict aboard the Coromandel hulk in Bermuda, experienced occasional attacks of haemoptysis.[897] Small, regular doses of digitalis were found to control the condition, although they did little for his nagging cough.

Emetics

Emetics were prescribed with the intention of removing excess waste matter from the body before it contaminated the rest of the system, causing disease. By expelling this matter through vomiting, patients could be rid of the waste before it burdened the digestive tract.[898] The vomiting was often continued until the patient's appetite began to return, any discomfort or heaviness having been carried off by the purging. Drastic emetics, particularly those caused by lead and mercury based medicines, caused violent muscular spasms which doctors often hastily prescribed other drugs (typically belladonna) to relieve.[899]

Ipecacuanha was a common, relatively mild emetic frequently used to treat rheumatic pains, by both hospital surgeons and self-dosing sufferers at home.[900] In the form of a medicinal wine, it was prescribed as a gentle emetic, while as a tincture it produced a slightly more rigorous effect. In either form, it produced an emesis which was valued for its brevity and the lack of prostrating

[897] NA, *Case Book, Royal Naval Hospital, Bermuda: Angus Smith* (ADM 104/98, p. 00038).
[898] Risse, *Hospital Life*, p. 195.
[899] Porter, *The Greatest Benefit to Mankind*, p. 270.
[900] R. Pearson, *Thesaurus Medicamenum* (3rd ed., London, C. and R. Baldwin, 1804), p. 103.

exhaustion which often accompanied other emetic medicines.[901] Frequently used to treat children, ipecacuanha was commonly prescribed in cases of mild poisoning, fever, and sick headache, and also to expel undigested food or foreign bodies from the oesophagus or stomach. More rigorous emetics included favourites such as antimonial potassium tartrate (tartar emetic) and copper sulphate (blue vitriol or bluestone). Minute doses of tartar emetic were sufficient to cause violent vomiting, followed by exhaustion.[902] Its severe action rendered it too drastic for the treatment of children.

Copper sulphate was considered an excellent emetic in cases of dysentery and diarrhoea, croup, diphtheria, and other throat conditions (to expel any false membranes that may have formed across the airways), and poisoning.[903] As with the majority of medicines, however, blue vitriol had a darker side. A well-known and easily purchased poison, copper sulphate was often swallowed in chunks by those intent on suicide. One such tragic case was John Harrison, a fifty-nine -year-old invalid admitted to New Norfolk Hospital after attempts to take his own life. Upon his admission, his neck was found to be bloody, scraped across the left side with jagged scratches. Harrison was questioned, and admitted that "he felt unwell and particularly unhappy in his mind having been wrongfully accused of being a tale Bearer."[904] Having swallowed two pieces of bluestone, he found that the only effect they produced was violent vomiting. The drug having failed to take his life, Harrison resorted to scratching his neck with a needle, which

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[901] F. Ellingwood, *The American Materia Medica, Therapeutics and Pharmacognosy: Ipecac* (self-published, Chicago, 1919), at <http://www.henriettesherbal.com/ eclectic/ellingwood/cephaelis.html> accessed 20 January 2010.
[902] A. Johnson, J. McKenzie, and H. Hartshorne, *Household Companion: The Family Doctor* (The John C. Winston Co., Toronto, 1909), at <http://chestofbooks.com/ health/reference/Household-Companion/The-Family-Doctor/Tartar-Emetic.html> accessed 20 January 2010.
[903] Potter, *A Compend of Materia Medica: Hydrargyrum*, at <http://www.henriettesherbal.com/eclectic/potter-comp/hydrargyrum.html> accessed 14 January 2010.
[904] TAHO, *RDH: John Harrison* (HSD 246/1/6/110).

succeeded only in having him admitted to hospital, where he was copiously bled, and his head shaved.[905]

Expectorants (pectorals)

As emetics expelled the contents of a patient's oesophagus and stomach, so expectorants brought up any stagnating matter from the lungs.[906] This category of drug, however, was less well-defined than the other groups of medicines. In an attempt to describe this awkward group of medicines, one textbook explains that as there were "no expectorants which act directly or specifically, and…no medicinal agents [were] more uncertain in their effects than those arranged under this class," these drugs were regarded with suspicion by some medical men.[907] A few practitioners became quite outspoken in their scepticism of the class of expectorants, scornfully branding it as a "fallacious term, which ought to be obsolete, as it serves only to perpetuate error."[908]

As these sentiments demonstrate, practitioners were divided in their understandings of how expectorants operated, and, indeed, whether their operation was predictable or effective enough to entitle them to an entirely separate class of medicines. Some doctors contended that by softening, thinning, or breaking up the solidifying bronchial discharges, expectorants assisted the patient to easily cough them up.[909] A second group of practitioners challenged the nomenclature

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[905] Head shaving as a form of treatment was fairly common. It was performed for a number of reasons, such as allowing better access to the scalp to apply leeches, blisters or lotions, to calm the patient in cases of hysteria, or simply to allow more cooling air to flow around the patient. Conversely, it could also be performed as a type of punishment, particularly for violent or maniacal patients (W. Stokes, 'Lectures on the Theory and Practice of Medicine, delivered at the Medical School, Park Street, Dublin, Sessions 1833-34', *London and Medical Surgical Journal*, 5 (1834), pp. 713-714).

[906] Incidentally, emetics were often used in conjunction with expectorants to rid the stomach of swallowed expectorations from the patient's lungs.

[907] J. Neligan and D. Reese, *Medicines, Their Uses and Modes of Administration* (Harper and Brothers, New York, 1844), p. 210.

[908] Neligan and Reese, *Medicines, Their Uses and Modes of Administration*, p. 210.

[909] Risse, *Hospital Life*, p. 196.

of this group of drugs, and questioned whether they should perhaps be classed as a type of emetic, as they operated by dislodging and expelling secretions from the passages.[910] Still others insisted that expectorants operated by relaxing the muscles of the chest, allowing the patient to breathe deeply enough to restore the body's natural respiration and thus dissipate any accumulated matter.[911] In this case, practitioners suggested, perhaps these drugs should be considered to be part of the antispasmodic category, inasmuch as they acted to diminish any muscular spasms of the chest.

The precise manner in which expectorants were understood to operate was also crucial to defining exactly which medicines should be placed within the category, and how these medicines should be administered to the patient. As the primary aim of expectorants was the expelling of matter from the lungs, some practitioners expressed the belief that the medicine should be inhaled in the form of an airborne vapour or gas, while others contended that the drug would still operate if it was taken into the patient's stomach.[912] These practitioners supported their assertions by highlighting how other medicines, when ingested by the patient, were then evident upon their breath (such as camphor or oil of turpentine).[913]

Expectorants were most frequently employed in cases of pneumonia, asthma, and other inflammatory respiratory conditions. They were generally considered to be a form of stimulant, as they aroused the muscles in order to encourage the rejection of matter from the lungs. In some situations, however, expectorants could also be employed to soothe a patient's condition – when administered in combination with opium, they were used as sedatives to ease troublesome

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910 Neligan and Reese, *Medicines, Their Uses and Modes of Administration*, p. 210.
911 Murray, *A System of Materia Medica and Pharmacy*, pp. 448-450.
912 Neligan and Reese, *Medicines, Their Uses and Modes of Administration*, p. 211.
913 J. Forbes, A. Tweedie, J. Connelly and R. Dunglison, *The Cyclopaedia of Practical Medicine* (vol. 4, Lea and Blanchard, Philadelphia, 1845), pp. 112-113.

coughs.[914] Antimony, *ipecacuanha*, squill, and digitalis were all prescribed as expectorants, alongside Gum-arabic and Balsam of Tolu. The patient would often be wrapped in blankets and urged to remain in bed while the medicines acted to prevent a recurrence of illness.[915]

Mercurials (sialagogues)

Medicines containing mercury maintained their popularity for centuries among practitioners and patients.[916] As a stimulating cathartic and diaphoretic, mercury's value lay in its capacity to purge the body – the bowels, kidneys, and other organs – through copious sweating and salivation.[917] It was prescribed in pill form for venereal or gastrointestinal diseases, and applied as an ointment on skin eruptions and venereal lesions (which were often kept open for lengthy periods of time to allow drainage). By the late 1830s, however, practitioners had begun to question the wisdom of free administration of such a destructive drug.[918]

Despite its collective acceptance and usage, mercury also had the potential to cause patients horrendous injury and disfigurement. An extended course of mercurials (particularly one in which small doses were given repeatedly close together, rather than larger doses spread over a greater period) often caused patients to lapse into a debilitated and emaciated state, their discomfort compounded by the common side-effects of swollen, painful gums and constant salivation – sometimes the quantity of saliva which ran endlessly from patients' mouths was so great that it was measured by the pint.[919] Others were dosed to the point of "complete

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914 Murray, *A System of Materia Medica and Pharmacy*, p. 447; Risse, *Hospital Life*, p. 197.
915 B. Ellis, *The Medical Formulary* (5th ed., Carey, Lea and Blanchard, Philadelphia, 1838), p. 70.
916 Risse, *Hospital Life*, p. 378.
917 P. Martyr, 'No Paradise for Quacks?: Nineteenth Century Health Care in Tasmania', *Tasmanian Historical Studies*, 5 (1997), p. 143; Porter, *The Greatest Benefit to Mankind*, p. 175.
918 J. Pereira, *The Elements of Materia Medica (Part 1)*, (Longman, Brown, Green, Orme and Longmans, London, 1839), p. 452.
919 Forbes, Tweedie, Connelly and Dunglison, *The Cyclopaedia of Practical Medicine*, p. 249; Pereira, *The Elements of Materia Medica (Part 1)*, p. 706.

salivation," such as Bermuda patient William Orr, a fifty-one -year-old cook aboard a Royal Naval steamer, and Henry Bowman, the thirty-one -year-old founder treated at St Bartholomew's who also received digitalis to treat his ascites.[920] Most pitiful, perhaps, was William Gibbons, a seventy-nine -year-old invalid at New Norfolk Hospital, who whilst under treatment at an earlier period had been "Kept in what was there termed a walking salivation as a preventative against fever."[921] These patients would have spent miserable days leaning uncomfortably over a basin, their mouths streaming with saliva, their teeth loosened in their aching jaws, their tongues and gums sloughing from the constant foul flow.[922]

Until the late 1840s, this salivation was understood by medical practitioners as favourable, a sign that the mercury had been absorbed by the patient's system and was acting to restore health.[923] In extreme cases, however, excess salivation would cause whole sections of patients' jaws to fall away, leaving them permanently disfigured, publicly marked by their disease and its treatment. These appalling side-effects were accepted by many doctors as the necessary cost of utilising what was seen, despite the drawbacks, as a useful and effective medicine.

Other veteran sufferers were discernible by the tremors and paralysis typical of mercury poisoning. These side-effects of were also obvious in those who worked with mercury, such as looking-glass silverers, hatters, barometer makers, or miners employed in sourcing quicksilver.[924] Initially, the victim would notice a certain unsteadiness in the arms, which soon progressed to muscular spasms and often also affected the speech and balance. If the exposure to mercury continued, more dramatic symptoms followed, such as delirium, seizures, and occasionally fatal

[920] NA, *Case Book, Royal Naval Hospital, Bermuda: William Orr* (ADM 104/98, p. 00284); SBHAM, SBH, *Medical and Surgical Case Notes: Henry Bowman* (MR 16/6/220a).
[921] TAHO, *RDH: William Gibbons* (HSD 246/1/1/173).
[922] Potter, *A Compend of Materia Medica: Hydrargyrum*, at <http://www.henriettesherbal.com/eclectic/potter-comp/hydrargyrum.html> accessed 14 January 2010.
[923] Risse, *Hospital Life*, p. 199.
[924] Pereira, *The Elements of Materia Medica (Part 1)*, p. 704.

apoplexy.[925] Such dramatic effects generally arose only when the mercury was inhaled or absorbed cutaneously, but occasionally also occurred following rigorous medicinal courses. By the 1840s, however, mercurial courses had become much gentler treatments than their predecessors. Whereas eighteenth century practitioner Herman Boerhaave considered it essential that a patient under a mercurial course of treatment "should spit three or four pounds in twenty four hours" and physician Daniel Turner "says from two to three quarts are a good and sufficient discharge," nineteenth-century medical men were confident that the mercury was exerting its beneficial effects with only a "very slight affectation of the mouth."[926]

Tonics (corroborants)

Tonics encompassed a group of drugs employed to restore vitality and tone (or tension) to patients' constitutions. As physician John Murray recommended, over a period of continual administration, tonics "increase gradually the force of the circulation, promote the action of the digestive organs, augment the secretions, or moderate them when they have been morbidly increased and, give vigour to the muscular system."[927] Unlike most other categories of drugs, this group of medicines was not administered to cure illness. Rather, they were designed to help rebuild strength following any disease which left a patient emaciated, lethargic, or frail. As such, tonics were generally employed as gentle courses of lengthy duration rather than brief or intensive treatments, which risked further depleting or overwhelming the patient's weakened constitution.

The restorative and vitalising action of tonic medicines was understood to operate slowly but effectively in a two-fold manner. When taken internally, they simultaneously strengthened the

[925] Pereira, *The Elements of Materia Medica (Part 1)*, p. 704.
[926] Boorhaave and Turner, cited in Pereira, *The Elements of Materia Medica (Part 1)*, p. 706.
[927] Murray, *A System of Materia Medica and Pharmacy*, p. 212 (grammar original).

patient's entire constitution through a "powerful impression upon the central organs of the nervous system," and stimulated the appetite by exerting toning action upon the digestive system.[928] When applied externally, they operated by increasing the density of the body's muscular fibres, thus strengthening them. Tonics were often used in conjunction with stimulants, as each operated to enhance the action of the other drug; as physician John Biddle succinctly commented, "tonics give strength, stimulants call it forth."[929]

Quinine was the most potent of the nineteenth-century tonics, and formed an integral part of any surgeon's medicine chest, particularly in warmer environments such as Bermuda. The active ingredient in *Cinchona succirubra* (Peruvian bark), quinine had been acknowledged for its anti-malarial properties since the seventeenth century. After a ferocious battle in which physicians fought to reject the bark from the canon of accepted *Materia Medica*, *Cinchona* was eventually received into standard pharmacopoeias as a tonic and antiseptic.[930] Upon this acceptance, many practitioners then embraced the medicine with a passion, crediting it with miraculous curative powers over a vast array of diverse conditions. Intensely bitter, quinine had the potential to cause a number of unfortunate side-effects in patients, including "a pernicious state of mental enervation," ringing in the ears, and dizziness. Fortunately, these generally occurred only when large doses thrust the patient's "nervous system beyond all natural bounds," and were generally reversible.[931] In more moderate amounts, quinine was used to prevent and treat various types of fevers, respiratory conditions (such as asthma), inflammations (particularly skin eruptions, where it acted as an antiseptic), gastrointestinal disturbances (especially dysentery), and even venereal diseases, where it was used to offset the effects of mercury.

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[928] J. Biddle, *Review of Materia Medica, for the Use of Students* (Lindsay and Blakiston, Philadelphia, 1852), pp. 76-77.
[929] Biddle, *Review of Materia Medica*, p. 77.
[930] W. Cook, *The Physiomedical Dispensatory: Cinchona* (self-published, Cincinnati, 1869), at <http://www.henriettesherbal.com/ eclectic/cook/CINCHONA.htm> accessed 15 January 2010.
[931] Quinine was often administered in wine, to mask the bitter taste. Without such a precaution, patients often vomited after swallowing the medicine (Cook, *The Physiomedical Dispensatory: Cinchona*, at <http://www.henriettesherbal.com/eclectic/cook/CINCHONA.htm> accessed 15 January 2010; Risse, *Hospital Life*, p. 373).

James Duncan, a thirty -year-old convict aboard the Coromandel hulk, was given quinine as a tonic to restore his strength after an exhausting bout of catarrh and an even more taxing round of drastic cathartics.[932] After enduring a number of doses of elaterium, Duncan's system was severely depleted, but the quinine rapidly saw him increasing in strength. At the New Norfolk Hospital, James Bedford, a tall, thin carpenter, was also given quinine to restore his beleaguered constitution as he battled hepatitis.[933]

Other tonics prescribed at the three hospitals used in this sample include botanic-based medicines such as quassia (wood of the *Picraena excelsa*), gentian (*Gentiana lutea)*, and the bark and roots of the magnolia. These three remedies were most frequently administered as stomachics, to treat gastrointestinal complaints, but were also employed as general restoratives.[934] Various mineral-based drugs were also used, such as preparations of iron, zinc or silver. These medicines were frequently prescribed in cases of depletion of the blood, in which the tonic was understood to "exercise a restorative influence on the composition of the blood, by increasing the number of its colouring particles, and the amount of its solid constituents."[935]

Where tonics were given as prophylactics, to assist in the prevention of diseases such as fever, they required careful monitoring. If healthy subjects were administered large doses of tonics, the medicines would act as a stimulant, irritating their constitutions rather than soothing and maintaining health.[936] Although they were most frequently used to treat chronic disease or during convalescence, when prescribed appropriately, tonics could also assist in acute cases of

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[932] NA, *Case Book, Royal Naval Hospital, Bermuda: James Deacon* (ADM 104/98, p. 00032).
[933] TAHO, *RDH: James Bedford* (HSD 246/1/6/217; HSD 246/1/6/222; HSD 246/1/6/225; HSD 246/1/6/231; HSD 246/1/6/232).
[934] Biddle, *Review of Materia Medica*, pp. 78-79, pp. 80-81, pp. 87-88.
[935] Biddle, *Review of Materia Medica*, p. 99.
[936] Biddle, *Review of Materia Medica*, p. 76.

epilepsy, neuralgia, and other painful spasmodic conditions, by soothing muscular fibres and relaxing the patient's system.[937]

Other categories of medicines

A number of other groups of medicines were routinely prescribed by doctors throughout the late-eighteenth century and well into the nineteenth. Although utilised less frequently than the drugs discussed above, these medicines all served particular purposes within the *Materia Medica*.

Type of Medicine	Uses	Examples of Medicine
Antacids[938]	Neutralises stomach acid	*Mistura cretae comp* (chalk compound) *Pulvaris magnesium carbonate* (magnesia carbonate)
Antispasmodics[939]	Relieves spasms in the involuntary muscles	*Ferula asafoetida* (Asafoetida) Ether
Carminatives[940]	Eliminates abdominal bloating	*Coriandrum* (coriander)
Emollients[941]	Relaxes or lessens the density of bodily fibres	*Mica panis* (bread poultice) *Liniment ammonia* (olive oil and water solution of sodium hydroxide)
Epispastics and rubefacients[942]	Produces cutaneous blisters, reddening or discharge	*Cantharides vesicatoria* (plaster of Spanish fly) *Sinapis alba* (white mustard)
Errhines[943]	Produces discharge from the nose	*Hydrargyri subsulphas* (yellow mercuric subsulphate)

Table 9: Other groups of medicines employed at the New Norfolk Hospital, the Royal Naval Hospital in Bermuda, and St Bartholomew's Hospital[944]

[937] Biddle, *Review of Materia Medica*, p. 77.
[938] Murray, *A System of Materia Medica and Pharmacy*, p. 489.
[939] Murray, *A System of Materia Medica and Pharmacy*, pp. 197-200; Risse, *Hospital Life*, p. 201.
[940] Felter and Lloyd, *King's American Dispensary*: *Coriandrum*, at <http://www.henriettesherbal.com/eclectic/kings/coriandrum.html> accessed 20 January 2010; Risse, *Hospital Life*, p. 200.
[941] Murray, *A System of Materia Medica and Pharmacy*, p. 539.
[942] Murray, *A System of Materia Medica and Pharmacy*, pp. 473-476.
[943] Murray, *A System of Materia Medica and Pharmacy*, pp. 468-469; Risse, *Hospital Life*, p. 201.
[944] See Glossaries for further explanations of terms and medicines; see, for example, Murray, *A System of Materia Medica and Pharmacy*, for further obscure categories of *Materia Medica* – those included here are those which appear in the records of the three hospitals used in this research.

Of the twelve most commonly prescribed categories of drugs (see Tables 10 and 11), cathartics featured as the most frequently prescribed group of medicines in each of the three hospitals with around twenty percent of patients receiving a purgative. By promoting a general purging of the body, ridding the patient of disease-causing matter, cathartics served as the universal remedy of the nineteenth century. Indeed, many surgeons prescribed a warm bath and a mild aperient as part of hospital admission procedure, regardless of whether the patient was ailing from chronic rheumatism or acute ophthalmia, severe bronchitis or a sudden attack of dropsy.

Category of Medicine	Percentage of Patients Prescribed
Cathartics	19.87%
Mercurials/sialogogues	10.40%
Emetics	9.82%
Anodynes	9.27%
Epispastics/rubifacients	7.45%
Tonics	6.77%
Other medical treatments	4.83%
Astringents	4.64%
Diuretics	3.58%
Diaphoretics/sudorifics	2.86%
Expectorants	1.51%
Antacids	1.10%
Antispasmodics	0.36%

Table 10: Most commonly prescribed groups of medicines at the New Norfolk Hospital, the Royal Naval Hospital in Bermuda, and St Bartholomew's Hospital combined

Cathartics were followed in popularity by mercurials and other sialogogues. A substantial sixteen percent of St Bartholomew's patients were prescribed mercury, compared to around ten percent

in New Norfolk and Bermuda. While all three institutions admitted venereal cases – the most common disease to be treated with mercury – the two colonial hospitals may not have had the luxury of prescribing their patients extended courses of the drug. Due to limited supplies, mercurial remedies may have been used more sparingly, or other medicines administered in their place.

Medicine	New Norfolk Hospital (%)	Royal Naval Hospital (%)	St Bartholomew's Hospital (%)
Anodynes	9.64	9.66	6.28
Antacids	1.21	1.23	0.22
Antispasmodics	0.34	0.38	0.43
Astringents	5.97	1.80	3.46
Cathartics	19.66	21.21	17.97
Diaphoretics/sudorifics	2.50	4.17	1.95
Diuretics	2.95	3.60	7.14
Emetics	11.83	7.58	3.46
Epispastics/rubifacients	9.98	1.42	6.71
Expectorants	1.29	2.46	0.65
Mercurials/sialogogues	9.30	10.70	16.02
Other medicines[945]	4.23	4.83	8.23
Tonics	7.90	5.49	3.25
Total	**100**	**100**	**100**

Table 11: Most commonly prescribed groups of medicines prescribed at the New Norfolk Hospital, the Royal Naval Hospital in Bermuda, and St Bartholomew's Hospital

Just under ten percent of patients were prescribed an emetic, with *ipecacuanha* and antimony featuring heavily in the case books of all three institutions. A stark disparity, however, is apparent between the three hospitals. Close to twelve percent of New Norfolk patients, received an emetic as part of their treatment – almost three times the number of patients compared to St Bartholomew's and double that seen in Bermuda. This discrepancy is largely due to the vast

[945] This category includes all other groups of medicines not appearing elsewhere in Table 11.

number of ophthalmic cases seen in the Vandemonian hospital. Ophthalmia was generally treated with copper sulphate (classed as an emetic) and *Argentum nitrate* (silver nitrate, grouped with the tonics). These remedies were not administered internally, but applied externally in the form of ointments or drops. The dramatic disparity between the prescription of emetics among the institutions, therefore, is largely a result of quirks in nineteenth-century classification of medicines, rather than intriguing differences between prescription writing.

Anodynes were prescribed to over nine percent of patients at New Norfolk Hospital and the Royal Naval Hospital. At St Bartholomew's Hospital, however, just six percent of patients received a form of medicinal pain relief. This is a curious disparity; presumably patients at the colonial institutions were not suffering from more painful complaints than those in St Bartholomew's. As discussed in Chapter Two, patients at New Norfolk and Bermuda were, however, viewed very differently by their surgeons when compared with patients at St Bartholomew's, and these divergent perspectives may have contributed to disparities in prescription writing. In the smaller colonial hospitals, most patients were highly valued as workers; their health was an asset measurable in economic terms. Relieving their pain and restoring their health as quickly as possible was crucial to returning them to their productive labour. St Bartholomew's patients were largely drawn from the homogenous mass of the urban working class – whatever the patient's role in day-to-day life, he would often simply be replaced by another worker from the vast pool of unskilled labourers. In this large city hospital, the case notes reveal less personalised concern for individual patients; in such an anonymous setting pain may easily have gone unnoticed or overlooked.

Epispastics and rubifacients, predominantly plasters comprised of mustard or powdered Spanish flies, were applied to just under eight percent of hospital patients. Their use, however, was

sharply differentiated between the institutions. A little less than two percent of patients admitted to the Royal Naval Hospital had been treated with epispastics, while almost ten percent of New Norfolk cases received these cutaneous applications, with St Bartholomew's patients falling in the middle at seven percent. This could be largely attributed to the types of conditions suffered by patients in each institution – blistering was administered to relieve localised inflammation, such as that seen in the ophthalmic or rheumatic cases common in the colder environment of Van Diemen's Land. Diseases frequently reported in Bermuda, such as gastrointestinal and febrile conditions, were typically treated using venesection, which was used to target more generalised inflammatory diseases.[946]

Around seven percent of patients across the three institutions were treated with tonics. New Norfolk (at eight percent) and Royal Naval patients (at five and a half percent) received much more frequent doses than their counterparts in St Bartholomew's. As discussed above, the high number of ophthalmic cases received at New Norfolk were generally administered silver nitrate as part of their treatment, while the Bermudian patients often received quinine to relieve the symptoms of fevers and prevent their recurrence. Kelly notes that Colonel David Collins requisitioned quantities of 'bark', but confused this with the bark of trees in the native Vandemonian bushland, and commented that it seemed "strange that Collins should include bark in his requisitions with an unlimited supply on hand in Tasmanian forests."[947] The bark to which Collins was referring was in fact *Cinchona* (Jesuit's or Peruvian bark), from which the active ingredient of quinine was drawn.

While almost six percent of New Norfolk patients received astringent medicines, less than two percent of Bermudian patients and just over three percent of St Bartholomew cases were treated

[946] See Chapter five for more detailed discussion of physical treatments and their uses in the three institutions.
[947] B. Kelly, *A Background to the History of Nursing in Tasmania* (Mercury-Walch, Hobart, 1977), p. 10.

with this group of medicine. Again, this may simply be attributable to the types of disease seen predominantly in the colder Vandemonian climate, such as respiratory afflictions. The role of astringents in treating haemorrhage may also account for its higher usage in the colonial hospitals, where it was often prescribed as an external application for wounds sustained during labouring accidents (few such work-related incidents appear in the case book of St Bartholomew's Hospital).

Around three percent of patients were prescribed expectorants and diuretics. The exaggeratedly high number of ascites and anasarca cases documented in the St Bartholomew's Hospital consequently inflates the rate of diuretic medicines prescribed in this institution – over seven percent compared to around three percent in both colonial hospitals.[948] Diaphoretics were prescribed more habitually in Bermuda, where fever cases demanded the frequent use of this group of medicines. Expectorants, antacids and antispasmodics were administered to less than two percent of patients (for each group of drugs), while between four and eight percent were prescribed medicines from other categories not included in the above analysis (such as aromatics, carminatives or emollients).

Access to Medicines

Availability and proximity to medicines were often deciding factors in the types of treatment patients could expect to receive upon hospital admission. With London acknowledged as being among the great centres of medicine during the nineteenth century, patients at St Bartholomew's Hospital could be assured of access to a vast range of drugs. In vast hospital wards and cramped

[948] As outlined in Chapter one and Chapter five, the St Bartholomew's case notes used in this research were selected by the surgeon according to his interests; they do not necessarily form a representative sample.

laboratories across the city, numerous medical men, ranging from fresh-faced medical students to well-established physicians, sought renown by experimenting (generally on uninformed patients) with new medicines or new uses of old ones.

As far-flung colonies, however, Bermuda and Van Diemen's Land had much less certain access to supplies of drugs. In the Australian colony, the Medical Department was responsible for furnishing each colonial hospital with the necessary medicines and instruments from its main supply room in Hobart Town.[949] The stocks held in this room were supplied directly from Britain; however, there were a number of serious problems concomitant with this system. Most markedly, the length of time it took for colonial orders for particular preparations to make their way through official channels to suppliers in Britain often produced problems. After a letter requesting fresh supplies was sent from a colonial hospital, it then had to wend its way through the bureaucracies of both colonial and home government, before the order could be filled and a ship found to courier the requested medicines. It was not unusual for it to take two or more years before a depleted hospital medicine chest could be refurbished. Even then, the long journey to the colony took its toll on the drugs – the erratically fluctuating temperatures, humidity and exposure lessened the freshness and potency of many medicines.

Surgeons stationed in Bermuda were often forced to abandon their patriotism in favour of the health of their patients, finding they could frequently obtain fresher medicines from America than Britain. Until the convict establishment passed from the hands of the Royal Navy in the late 1840s, medicines were routinely supplied from Britain, despite the warm humidity which caused drugs to deteriorate rapidly as they travelled to the colony. From the 1850s, however, medicines were obtained from the most practical and freshest source – usually America. Some

[949] W. Rimmer, *Portrait of a Hospital: The Royal Hobart* (Royal Hobart Hospital, Hobart, 1981), p. 32.

surgeons contended that American medicines remained efficacious for longer periods, being "better suited to this warm and damp climate."[950]

In Australia, too, the efficacy of medicines supplied to colonial surgeons was questionable, and purchasing from dispensing chemists would generally have been far too expensive for the working classes.[951] William Kelly, for example, complained in the mid-1850s that frequently the only medicines available were "ships' stores, the scrapings of old medicine chests, quinine with as much tonic property as arrowroot; blistering ointments as harmless as Windsor-soap, and everything else equally deteriorated by age, adulteration and exposure."[952] This in turn meant that colonial patients were receiving less effective drugs (often in smaller doses and shorter courses) than their British counterparts. This was particularly the case for stimulants, such as mercury.[953] The unusual climate and weather patterns of the colonies were also understood to influence the rapidity with which various medicines acted, assuming they retained sufficient potency to act at all. It was occasionally the inappropriate handling or storage of medicines, however, which rendered drugs useless. Bigge, for example, reports that "from want of room or proper arrangement in the stores in which [the medical supplies] were deposited," coupled with the lack of care taken in "the preservation of the different articles," meant that medicines had been damaged or done unused as they had been hidden from view.[954]

Unpredictable access to more established pharmaceutical supplies undoubtedly stimulated interest among colonial surgeons in experimenting with native botanic remedies. While local botanic medicines undoubtedly supplemented convict treatment in Bermuda, they could not be

[950] C. Hollis-Hallett, *Forty Years of Convict Labour: Bermuda, 1823-1863* (Juniperhill Press, Bermuda, 1999), p. 52.
[951] R. Haines, *Life and Death in the Age of Sail: The Passage to Australia* (National Maritime Museum, London, 2006), p. 112; Martyr, 'No Paradise for Quacks?', p. 144.
[952] W. Kelly, as cited in Martyr, *Paradise of Quacks*, p. 39.
[953] Forbes, Tweedie, Connelly and Dunglison, *The Cyclopaedia of Practical Medicine*, p. 251.
[954] J. Bigge, *Report of the Commissioner of Inquiry, on the State of Agriculture and Trade in the Colony of New South Wales* (1966 facsimile of original, published by The House of Commons, London, 1823), p. 109.

found or produced in quantities sufficient to supply the entire convict population – accordingly, the use of small local supplies of various medicines was not recorded in case notes at the naval hospital.[955] It is known, however, that crops such as castor oil trees were established as early as the seventeenth century, although it does not seem they were ever of particular commercial importance.[956]

Practitioners posted to the Australian colonies also evidently took to collecting, naming and experimenting with local flora with great fervour. In 1788, while the settlement at Sydney Cove was still being established, the surgeons sent convicts out to scour the land for native berries and greens which could prove valuable as antiscorbutics.[957] The competitive aspiration to discover a medicinal marvel was just as strong among colonial surgeons as it was amid their British-based colleagues. Many practitioners had a keen interest in botany which equipped them with added knowledge and a familiarity with medicinal plants – and there was no shortage of potential panaceas within the uncharted Australian bush. In this way, experimentation provided a means for colonial surgeons and botanists to stay connected to the wider medical and scientific worlds.

The lack of a reliable supply of medicines also forced colonial surgeons to improvise with locally available remedies. Although Australian Aborigines utilised a large repertoire of indigenous medicines and treatments, settlers appear to have been reluctant to rely upon the Aborigines' native knowledge, preferring instead to conduct their own (often disastrous, but sometimes surprisingly successful) empirical investigations into the properties of local plants.[958] This may have been due to surgeons' doubts regarding the efficacy of Aboriginal cures when faced with

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[955] Hollis-Hallett, *Forty Years of Convict Labour*, p. 52.
[956] A. Verrill, *The Bermuda Islands* (self-published, Connecticut, 1902), pp. 111-112.
[957] J. Pearn, 'The Enchanted Herb: The Work of Early Medical Botanists in Australia', *The Medical Journal of Australia*, 147 (1987), p. 568.
[958] Pearn, 'The Enchanted Herb', p. 569.

European ills, combined with a lack of trust and communication between the two groups. Research has shown, however, that the effectiveness of both European and Aboriginal medicine was similar.[959] It also appears that convicts undertook their own forms of experiments with local botanic resources, with a small number using plants known to be toxic to attempt suicide.[960]

A number of valuable remedies were discovered through the surgeons' experimentation, including the use of *Tetragonia tetragonioides* (wild spinach), *Smilax glyciphylla* (native sarsaparilla), and *Leptomeria acida* (native current) as antiscorbutics and the *Xanthorrhoea* (grass tree) species in cases of respiratory diseases. Various types of *Acacias* (wattles) and *Eucalypts* (gums) were used to treat dysentery and diarrhoea.[961] Indeed, it was the oil extracted from the Eucalyptus which proved to be perhaps the Australian colonies' most beneficial drug, both in economic and medicinal terms. In 1847, Van Diemen's Land exported apothecary goods valued at £279; these items were likely to have included locally produced medicines, such as eucalyptus oil.[962] Although this sum was minor when compared to the cost of supplying the colony with medicines – in the same year, Van Diemen's Land imported medicines totaling over £3000 – there is no doubt that once the industry was established, the cost of producing medicines in Van Diemen's Land was much less than that of importing the same drugs. The benefits of this local industry, however, extended beyond the economic.[963] By utilising local botanic resources, patients had access to fresher, more potent medicines, and surgeons had recourse to a more reliable supply of drugs.

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959 Pearn, 'The Enchanted Herb', p. 569.
960 B. Gandevia, 'Malingering in the Penal Era: Its Epidemiology and Social Implications, with Contemporary Observations by Dr James Stewart' in Australian Medical Association, *Festschrift for Kenneth Fitzpatrick Russell* (Queensbury Hill Press, Victoria, 1978), pp. 86-87.
961 961 J. Pearn, 'The Enchanted Herb', p. 570.
962 State Library of Tasmania, *Statistical Returns of Van Diemen's Land* (Government Printers, Hobart, 1847).
963 This industry evidently grew over time. By 1901, Tasmania had five businesses producing and/or marketing eucalyptus oil (Martyr, 'No Paradise for Quacks?', p. 145).

The Effects of Medicines New and Old

In mid-May, having endured three and a half weeks of hospital treatment, John Warring's prescription was altered. Brock had departed New Norfolk Hospital – a bureaucratic quarrel saw him transferred to Port Arthur; less than two years later he would leave Van Diemen's Land and return to England. His replacement at New Norfolk was Dr George Francis Huston, a relative newcomer to the colony. Upon taking charge of Warring's case, Huston reviewed his patient's condition, noting the ominous "dullness on percussion of under both Scapula [with] Considerable effusion in the Abdomen with Anasarca" of both upper and lower limbs.[964] Warring's entire body was sodden with retained fluid. His breathing was ragged, his lungs compressed with the serum building up in his abdomen, and Huston could palpate his patient's inflamed liver, "distinctly felt hard and well defined under the short ribs on the right side."[965] The medicines were not working.

Helpless, Huston could do little for Warring but continue Brock's prescription, supplementing his patient's treatment with a little wine. As Warring's anasarca increased, Huston purged his patient with *Pulveris jalapae compositus* (compound powder of jalap), which "afforded him great relief."[966] Heartened, Huston continued purging Warring, dosing him with violent purgatives *Citrullus colocynthis* and *Elaterii*. Warring's condition improved, and Huston noted with relief that his patient "feels himself better than he has been for some days."[967] This merciful hiatus, however, was not to last. Two days later, towards the end of May, Warring was again sinking under increasing anasarca, "his countenance…worn and haggard," his strength drained by the

[964] TAHO, *RDH: John Warring* (HSD 246/1/6/181).
[965] TAHO, *RDH: John Warring* (HSD 246/1/6/181).
[966] TAHO, *RDH: John Warring* (HSD 246/1/6/191).
[967] TAHO, *RDH: John Warring* (HSD 246/1/6/191).

combination of desperate illness and relentless purging.[968] Warring stopped eating, taking only wine and milk supplemented occasionally with crumbs of bread. His heart pumped furiously, striving in vain to circulate blood throughout his swollen body, but the frantic beating could scarcely be detected at the wrist.[969] By late afternoon of the twenty-ninth of May, the sun sinking below the bush bordering the hospital gardens, Warring was semi-conscious. He died quietly at seven o'clock that night.

Warring's case illustrates the helpless desperation felt by many nineteenth-century medical practitioners. Despite the increasing understanding of the body in health and disease gleaned through anatomy and pathology, this newfound knowledge seldom extended to the understanding of how to *cure* illnesses, or relieve the suffering of those afflicted. As Matthew Baillie lamented, "I know perhaps better than any other man, from my knowledge of anatomy, how to discover disease, but when I have done so, I don't know better how to cure it."[970]

Very few of the medicines available to nineteenth-century surgeons possessed compounds which would be recognised today as scientifically effective, able to unquestionably relieve or cure a patient's disease. This has had the lamentable effect of causing historic medicines to be widely dismissed as placebos, when examined from a pharmacological perspective. Even when analysed from the viewpoint of social history, the wider influence of revolutions in science and chemistry is often dismissed as insignificant. Such myopic approaches, however, tend to miss the importance of the symbolic value of medicines. The lack of safe and effective active ingredients in nineteenth-century medicines does not inevitably decrease their significance, nor does it dictate or accurately describe the effectiveness of these drugs as experienced by patients. Whether medicines were physically or psychologically effective, not effective at all, or whether

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[968] TAHO, *RDH: John Warring* (HSD 246/1/6/191).
[969] TAHO, *RDH: John Warring* (HSD 246/1/6/191).
[970] J. Wardrop, *The Works of Matthew Baillie* cited in F. Burwick, 'Joanna Baillie, Matthew Baillie and the Pathology of their Passions' in T. Crochunis (ed.), *Joanna Baillie, Romantic Dramatist: Critical Essays* (Routledge, London, 2004), p. 53.

they occupied some ambivalent expanse 'betwixt and between' is a vast area of study in its own right, too broad to be attempted here.

What can, however, be gleaned from the examination of these patient case histories is the understanding that the medicine of the nineteenth century – both as a discipline, and in the sense of the drugs utilised by practitioners – cannot be easily compressed or simplified into neat, scientific categories. Even as drugs were recorded as occupying one category, they were used just as regularly to fulfil the purposes of another. Doctors and patients alike were comfortable with the fluidity and ease of interchange between classifications – indeed, probably more comfortable than they were with the classifications themselves. Long-established humoural theories and new-found, scientifically-endorsed chemistry, biology and pathology were utilised together, forming a complex, but nonetheless reciprocal, collaboration of tradition and innovation.

Essentially, while nineteenth-century hospital physicians around the world undoubtedly supported the increasing dominance of science in medicine – indeed, they could legitimately be described as the vanguard of the movement – they and their colleagues were equally reliant upon the traditional medicines and theories of much more ancient understandings of the body in sickness and health. They drew no rigid boundaries between "the scientific and the superstitious," they saw nothing mutually exclusive between these two ends of a single medical spectrum.[971] The importance of rest, nutritious diet and appropriate exercise were valued as highly as the use of medicines in treating disease. After all, as William Cullen averred, it was better to allow disease to kill a patient, than to kill them through the over-enthusiastic

[971] Porter, *The Greatest Benefit to Mankind*, p. 40.

administration of medicines.[972] Nonetheless, the weight of powerful new forms of drugs such as digitalis, opium and mercury was gradually tipping the scales away from the superstitious and towards the scientific.

[972] W. Cullen, *Clinical Lectures Delivered for John Gregory, February-April 1777* (Royal College of Physicians, Edinburgh, 1772), p. 276.

Chapter Seven

Treatment After Death ~

Post-Mortem Examinations and Dissection

In the chill of a November day, the London streets slick with icy mud, Ben Goodman collapsed on a footpath in the centre of the bustling city. The seventy-one -year-old man was carried to the closest hospital, St Bartholomew's, where he was immediately admitted as an emergency case.[973] Although Goodman regained his senses and the shock of his sudden fall had dissipated, his surgeons were unable to account for his ongoing paralysis; despite perfect sensation in his lower limbs, Goodman was unable to bear weight upon his legs, or even to move them. After almost four months of lying motionless in his narrow hospital cot, anasarca began to swell his

[973] St Bartholomew's Hospital Archives and Museum, St Bartholomew's Hospital, *Medical and Surgical Case Notes of Edward Latham Ormerod, Diseases of the Central Nervous System, Kidneys, Abdominal and Infectious Skin Diseases: Thomas Fomian* (MR 16/6/65).

feet, legs and eventually his torso.[974] As the fluid accumulated, his breathing became oppressed, each inhalation causing his thin chest to heave. Soon after, he was struck by a bout of diarrhoea. Goodman's body was unable to resist the rapid and violent purging which drained his already emaciated frame, and within hours he sank and died.

Goodman's story was tragically common. He represents vast numbers of working-class people who were admitted to hospitals, perhaps with a severe bout of bronchitis or gastroenteritis, suffering the crippling aches of rheumatism or arthritis, or (as in Goodman's case) after an accident in the street or the workplace.[975] Despite medical attendance, which came with both benefits and hazards, scientific knowledge proved unable to trump disease, with death emerging victorious.

Death, however, was not the only victor in this common scenario. Since the gradual advance of scientific medicine, informed by the rise of anatomy and pathology, the demand for cadavers through which to further explore the connections between the physical evidence of disease and its manifestations during life were in ever-increasing demand. The progression of these branches of medical knowledge depended on the availability of bodies for dissection.[976] Prior to the Anatomy Act in 1832, the bodies of executed criminals formed the only legitimate source of material for anatomical examinations. Surgeons could acquire these cadavers only after a battle (usually bureaucratic in nature, but sometimes erupting into physical violence) with many antagonistic parties. The destruction of condemned felons' bodies by dissection was predictably

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[974] See Glossary for explanation of terms.
[975] G. Mooney, B. Luckin, and A. Tanner, 'Patient Pathways: Solving the Problem of Institutional Mortality in London during the Later Nineteenth Century', *Social History of Medicine*, 12 (1999), p. 227.
[976] P. Linebaugh, 'The Tyburn Riot Against the Surgeon' in D. Hay, P. Linebaugh, J. Rule, E. Thompson and C. Winslow (eds.), *Albion's Fatal Tree: Crime and Society in Eighteenth-Century England* (Pantheon Books, New York, 1975), p. 69.

and fiercely opposed by their family and friends; the judges, executioners, and Sheriff's officers involved in the case would often also require financial inducements to pass a body directly to a surgeon's porters (who also required remuneration); and police constables also had to be paid to protect the surgeons and their beadles as they fought for the corpses.[977]

It was the duty of the Crown to allocate these corpses; while they were usually sent directly to the Company of Surgeons, members of the College of Physicians, private practitioners, and hospital schools also fought jealously for the right to obtain a body unmarked by disease.[978] The Crown, however, was motivated not by the humanitarian desire to speed advancements in medicine or provide the nation's most eminent anatomists with additional material to dissect.[979] Rather, the authorities sought to use dissection to humiliate and terrify the working classes into docility – disobedient and noncompliant subjects would be punished. As a sentence, dissection went far beyond straightforward public punishment. The desecration of the bodies of these criminals after death emphasised the perpetual consequences of the depravity of their crimes. This was punishment which extended past *corporeal* life and into the *after*life.

In the 1820s, the public was simultaneously outraged and terrified to learn that this demand had so greatly exceeded the supply of legitimately-available corpses that murders were being perpetrated to enable the sale of bodies to anatomy schools. While the first bill to regulate the sale and distribution of corpses foundered, a more carefully worded Anatomy Act succeeded in 1832. While this Act did indeed stifle – if not entirely eradicate – the heinous crime of 'burking'

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977 Linebaugh, 'The Tyburn Riot' in Hay, Linebaugh, Rule, Thompson and Winslow (eds.), *Albion's Fatal Tree*, p. 71, p. 75.
978 Private practitioners, too, sought opportunities for extending their professional knowledge through dissection (J. Wilson, 'A Surgeon's Private Practice in the Nineteenth Century: Sir William Fergusson's Edinburgh Day Books 1832-39, with some Extracts from his London Day Books 1839-77', *Medical History*, 31 (1987), p. 351).
979 Linebaugh, 'The Tyburn Riot' in Hay, Linebaugh, Rule, Thompson and Winslow (eds.), *Albion's Fatal Tree*, pp. 73-77.

and threaten the profitable careers of grave-robbers, it did little to ease the anxiety of the working classes. Public fear surged as opponents to the Anatomy Act spread scandalous stories of hospital, gaol, asylum and workhouses inmates who were dissected before grief-stricken relatives could claim the bodies of their loved ones. Even more shocking, perhaps, were the tales of corpses who had been legitimately claimed, but who were later found to have been covertly examined, sometimes with parts of their bodies retained and preserved by anatomists, and the remains treated with irreverent derision by impudent medical students.

Mortality Rates

Regardless of the negative publicity surrounding the treatment of hospital patients after their demise, death was nonetheless a very real part of the day-to-day occurrences of early and mid-nineteenth-century medical institutions.[980] Mortality rates have been seized upon, both during the nineteenth century and in modern times, as guides to demographic trends and the significance of social changes. They are 'paper trails', able to provide comparable information of the number of deaths between specific hospitals or in a single institution over time. In the multitude of statistical societies which proliferated throughout the Victorian period, men such as William Farr and Thomas Edmonds grappled with equations and complicated calculations in their attempts to compile 'laws' of mortality and vital statistics.[981] By determining rates of death in various age groups, statisticians hoped to better measure, and, ultimately, to positively

[980] For an examination of a slightly later period, see S. Cherry, *Medical Services and the Hospitals in Britain, 1860-1939* (Cambridge University Press, Cambridge, 1996), especially Chapter two.
[981] J. Eyler, 'Constructing Vital Statistics: Thomas Rowe Edmonds and William Farr, 1835-1845' in A. Morabia (ed.), *A History of Epidemiological Methods and Concepts* (University Hospital, Geneva, 2004), p. 149.

influence, the health of human populations.[982] Indeed, Edmonds went so far as to suggest that the "only sure index of the practical success of the science of medicine is in the increase of collective vitality, or in the diminution of collective mortality."[983]

As mentioned briefly in Chapter One, during the 1920s authors such as Griffith and Buer contended that mortality rates were actively reduced from around 1780 through the fostering of medical skills and knowledge which occurred within the growing number of hospitals.[984] Improvements in hospital treatment and healthcare included, as recognised by Dobson, such elements as more developed skills in treating a wider variety of diseases (the employment of cool treatments in cases of fever, for example); the use of medicines which had demonstrably positive effects (such as quinine, the active ingredient in Peruvian bark); the implementation of vaccinations for smallpox; the gradual improvement in sanitary measures and ventilation; the growing numbers of dispensaries, voluntary, and lying-in hospitals where the sick poor could receive free or very cheap advice and treatment; segregation and quarantine of infectious cases in hospitals; and marked improvements in medical disciplines such as chemistry, surgery, and pathology.[985]

While the significant influence of this growth in knowledge and skill upon "public, preventative and personal health" has been acknowledged, the extent and importance of these changes has also been highlighted.[986] Controversial authors such as McKeown and Brown emphasised the impact of general social and economic changes upon mortality rates, while others placed more

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[982] R. Woods, 'The Population of Britain in the Nineteenth Century' in M. Anderson (ed.), *British Population History from the Black Death to the Present Day* (University of Cambridge, Cambridge, 1993), p. 329.
[983] T. Edmonds, 'On the Laws of Collective Vitality', *Lancet*, 2 (1835-1835), p. 5.
[984] M. Buer, *Health, Wealth and Population in the Early Days of the Industrial Revolution* (G. Routledge and Sons, London, 1926); G. Griffith, *Population Problems in the Age of Malthus* (Cambridge University Press, Cambridge, 2010), p. 258..
[985] M. Dobson, *Contours of Death and Disease in Early Modern England* (University of Cambridge, Cambridge, 1997), p. 35; G. Trevelyan, *English Social History* (Penguin Books, London, 2000), p. 359.
[986] Dobson, *Contours of Death*, p. 36; T. McKeown, *The Modern Rise of Population* (Edward Arnold, London, 1976).

importance on the significance of medical interventions such as those described by Dobson above.[987] To what degree could the innovations of science improve the lives of those who dwelt in the overcrowded lanes and alleyways of metropolitan London, where the same narrow and gloomy roads were shared by humans, livestock, and swarms of vermin, where few inhabitants were literate, and where the living kept vigil over the dead, where sickness and disease merged with life and health?[988]

In discrete, controlled environments such as hospitals, it seems likely that medical innovations and scientific advances would have been influential. Within these institutions, where the focus was primarily on the healing of disease, medical and administrative staff worked together to implement changes which they perceived would positively benefit their patients. Accordingly, measures were taken to manipulate environmental variables in a way which would have been all but impossible in a working class domestic setting; ventilation was controlled, temperatures were adjusted, bed-rest was often enforced, professional medical advice was generally close by (if not always immediately on hand), attempts were made to ensure relative cleanliness, and even the diet was monitored closely. Complicating any analysis of the possible impact of hospital treatment, however, is the difficulty of assessing which changes were due to medical intervention, and which may result from environmental changes.

Essentially, it is likely that any positive effects of medical intervention were limited to those who were actually treated *within* the hospitals – the simple fact of the existence of the institutions, and

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[987] See, for example, McKeown, *The Modern Rise of Population*; T. McKeown and R. Brown, 'Medical Evidence Related to English Population Changes in the Eighteenth Century', *Population Studies*, 9 (1955), pp. 119-141; E. Sigsworth, 'A Provincial Hospital in the Eighteenth and Nineteenth Centuries', *College of General Practitioners, Yorkshire Faculty Journal* (1966), pp. 24-36; H. Habakkuk, 'English Population in the Eighteenth Century', *The Economic History Review*, 6 (1953), pp. 117-133; E. Wrigley and R. Schofield, *The Population History of England 1541–1871: A Reconstruction* (Cambridge University Press, Cambridge, 1981).

[988] J. Tooth, *Human and Heroic: The Life and Love of a 19th Century Country Doctor* (Artemis Publications, Hobart, 2007), p. 34.

any advancements in the wider discipline of medicine that occurred within their walls, did not necessarily improve the health or the mortality rates of those *outside* the institutions. While the number of hospitals in Britain was gradually increasing over the nineteenth century, even as late as 1860 there were still only twelve thousand beds available to patients in England (accommodating approximately one hundred and twenty thousand patients annually).[989] Thus, while the improvements are clear, their influence was socially and spatially restricted.[990]

While the records from St Bartholomew's Hospital used in this sample do not allow for the compilation of a mortality rate, published sources report that between 1830 and 1834 over twenty-eight thousand patients were admitted to St Bartholomew's Hospital.[991] Of these, one thousand eight hundred and ninety-four died, a rate of just over seven percent of cases. This rate remained remarkably steady between the years of 1790 and 1834, fluctuating from a low of slightly under seven percent (between 1825 and 1829) and a high of close to eight and a half percent (between 1815 and 1819).[992] These rates are low compared to other institutions in London during the same timeframe. The London Hospital, for example, located just two miles away from St Bartholomew's, had an average mortality rate of almost eleven and a half percent between 1829 and 1833, while the rate at St George's Hospital between 1830 and 1834 was also over eleven percent.[993]

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[989] F. Smith, *The People's Health* (Croom Helm, London, 1976), p. 249.
[990] Dobson, *Contours of Death*, p. 36.
[991] In 1834, a total of five thousand, two hundred and sixty-seven patients were admitted to St Bartholomew's Hospital, with three hundred and forty-six of these dying whilst under treatment. These figures included seven hundred and seventy-seven male medical patients and one thousand, nine hundred and fourteen male surgical patients (*House of Lords Sessional Papers: Tables of the Revenue, Population, Commerce, &c. of the United Kingdom and its Dependencies* (vol. 29, William Clowes and Sons, London, 1835), p. 446).
[992] G. Porter, *The Progress of the Nation in its Various Social and Economic Relations from the Beginning of the Nineteenth Century to the Present Time: Population and Produce (Sections I and II)*, (C. Knight and Co., London, 1836), p. 41.
[993] Porter, *The Progress of the Nation*, p. 42.

These rates include both medical and surgical cases. High rates of mortality had been an accepted part of eighteenth century surgery, based on the risks to which patients were exposed both during and after procedures.[994] During the nineteenth century, however, this bleak complacency gave way to a quiet confidence; advances in knowledge, surgical skills, and improved aftercare and hygiene gave surgeons and patients hope that deaths from operations could be avoidable. Accordingly, mortality rates from routine and regularly performed operations improved greatly. At the same time, however, this confidence also fed a certain boldness which saw a small number of audacious surgeons pushing the boundaries of their knowledge and skill with innovative – and dangerous – new operations. These new procedures, such as leg amputations at the hip and operations to treat hernia and aneurism, predictably resulted in high mortality rates.[995] Therefore, while acknowledging this general trend of gradually decreasing mortality in surgical operations, it is also important to use caution when employing such generalisations. As Stanley notes, the wide variations between rates at different hospitals and among different surgeons over different time periods require detailed and comprehensive analysis, rather than a brief review, to obtain an accurate representation of hospital mortality.[996]

If the advances in medicine and science discussed above did genuinely enact beneficial change within these institutions, why did the mortality rates remain relatively static? If methods of treatment, types and dosages of drugs, and surgical processes were all undergoing such reform and alteration, why did the mortality rates remain so obstinately immobile? It is this very frame of reference – change, and its speed – which itself suggests a possible answer to this question. While many things were undergoing change within the hospital, it is crucial to remember that so too were things outside the walls of the institution, as patient demographics varied over time. During these decades, hospitals grew busier, causing less severe cases to be turned away. The

[994] Stanley, *For Fear of Pain*, p. 152.
[995] Stanley, *For Fear of Pain*, p. 153.
[996] Stanley, *For Fear of Pain*, pp. 153-154.

number of dispensaries was simultaneously increasing to deal with the needs of this group of patients, who were often treated at home under the advice of 'sixpenny' doctors. Accordingly, only unusual or critically ill cases were admitted as inpatients – cases whose chances of recovery were lower than those of the milder cases who had been turned away. This acted to prevent the decrease of the hospital's mortality rates, despite the incorporation of various diagnostic and curative advances during this time.

Many of these same innovations were seen at the New Norfolk Hospital. The detailed nature of the records from this institution did allow for the compilation of various statistics, which revealed a startling death rate of fourteen percent – double that of St Bartholomew's and significantly higher than other British institutions. Although Nicholas contends that the mortality rate for convicts is comparable with those in British voluntary hospitals during the same period, this research would superficially appear to contradict such assertions.[997] There are, however, a number of key differences between the two hospitals that may have a significant influence upon these figures.

Firstly, the profiles of patients admitted to these two hospitals were very different. As discussed in Chapter Two, St Bartholomew's had complicated and restrictive admission guidelines, which excluded a wide variety of patients who were eligible for accommodation and treatment at New Norfolk Hospital. The chronically ill, the elderly, those suffering venereal or infectious diseases, ulcers, epilepsy, or who were deemed to be close to death were turned away from the British institution. In Van Diemen's Land, these groups of patients had very few alternative options – no workhouses or other institutions existed to tend those unable to care for themselves, and hardly any patients had family or friends close by in a position to take them in – the hospital was

[997] S. Nicholas (ed.), *Convict Workers: Reinterpreting Australia's Past* (Cambridge University Press, Cambridge, 1988), p. 12.

often their only choice. Half of the patients who died in New Norfolk Hospital were over the age of fifty, and were admitted essentially as invalids, no longer capable of caring for themselves in the community.

Secondly, the experience of transportation and the rigours of colonial work regimes appear to have negatively impacted convict health. The long voyage at sea, spent confined in an overcrowded vessel in wildly fluctuating climatic conditions, could weaken the constitution of many robust prisoners and force those already ailing further into ill-health. Maxwell-Stewart has demonstrated that the mortality rate for convicts was markedly higher in the first twelve months after their arrival in the colony, at thirty-seven per thousand, but by the second and third years the rate steadied at eight per thousand.[998] Provisional results also suggest that the health of convicts employed in severe labour regimes (such as ganged labour), which relied upon the use of punishment to extract labour, was impaired to a degree not evident in those prisoners who worked under incentive-based management practices.[999] Accordingly, the mortality rate of the first group of convicts was much higher, at forty-eight per thousand, than the second group, at just twelve per thousand.[1000] This stark disparity emphasises the need to consider other social aspects of the convict experience – not only healthcare – when examining mortality rates.[1001]

Thirdly, it may also be possible that sporadic access to medicines negatively impacted colonial patients' hospital treatments, resulting in a higher mortality rate. The great expanse of ocean across which fresh medical supplies were obliged to travel before they could refill colonial

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998 H. Maxwell-Stewart, 'Crime and Health: An Introductory View' in P. Richards, B. Valentine and T. Dunning (eds.), *Effecting a Cure: Aspects of Health and Medicine in Launceston* (Myola House of Publishing, Launceston, 2006), p. 42.
999 Maxwell-Stewart, 'Crime and Health' in Richards, Valentine and Dunning (eds.), *Effecting a Cure*, p. 43.
1000 It is also important to note that most labour management systems would have employed a combination of punishment and incentives, and that while under sentence most convicts would have experience a mix of the two systems (Maxwell-Stewart, 'Crime and Health' in Richards, Valentine and Dunning (eds.), *Effecting a Cure*, pp. 43-44).
1001 Maxwell-Stewart, 'Crime and Health' in Richards, Valentine and Dunning (eds.), *Effecting a Cure*, p. 43.

medical chests meant that drugs were already several years old when they reached the convict patients.[1002] However, it must be conceded that the negative impact of inadequate or stale medicines is both relatively unlikely and almost undoubtedly minor; regardless of the freshness of the medicines, few eighteenth and nineteenth-century drugs were capable of actively relieving or curing disease.[1003]

The Shortage of Bodies Available for Anatomical Examination

The difficulties experienced by medical students obtaining practical experience of the anatomy and pathology of the human body lay at the heart of the dissection controversy. As early as the mid-eighteenth century, it was considered essential for a new surgeon to:

> be an accurate Anatomist, not only a speculative but practical Anatomist; without which he must turn out a mere Bungler. It is not sufficient for him to attend Anatomical Lectures, and see two or three Subjects cursorily dissected; but he must put his hand to it himself, and he able to dissect every Part, with the same Accuracy that the Professor performs.[1004]

Such accuracy took practice. Accordingly, the education of medical students experienced a subtle transformation, with the emphasis gradually moving from the classical and theoretical to the innovative and practical.[1005] While the expansion of medical science stipulated that every surgeon have a detailed knowledge of what lay beneath the skin of their patients, and how each

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[1002] See Chapter Six for further detail.
[1003] See Chapter Six for further detail.
[1004] R. Campbell, *London Tradesmen, being a Compendious View of all the Trades, Professions, Arts, both Liberal and Mechanic, now Practised in the Cities London and Westminster* (T. Gardner, London, 1747), p. 50 cited in Linebaugh, 'The Tyburn Riot' in Hay, Linebaugh, Rule, Thompson and Winslow (eds.), *Albion's Fatal Tree*, p. 70.
[1005] K. Russell, 'Medicine in Melbourne – The First Fifty Years', *The Medical Journal of Australia*, 2 (1977), p. 18.

disease was manifest both internally and externally, the law precluded them from acquiring it.[1006] While the bodies of executed criminals formed the only legitimate source of material for anatomical examinations, the need to educate a generation of medical students and to hone the skills of their superiors pushed demand far beyond legal supplies.

Until the eighteen century, the Royal College of Physicians and the Company of Barber-Surgeons (which split in 1745 to form the Company of Surgeons) dominated the progress of British medicine.[1007] Under their guidance, doctors and surgeons were trained and received their qualifications; also under their control were the development of new techniques and the advancement of medical knowledge. In the early decades of the nineteenth century, however, larger urban hospitals (including St Bartholomew's) began to establish schools in which they trained their own medical students. As *The Times* effusively averred, with a fervour verging on the spiritual, these hospital schools were perceived to benefit more than just the students:

> The daily, the nightly – nay, the hourly, ministrations of the elder students were a constant source of comfort to the patients, and the knowledge they thus acquired of the exact progress of each case, when communicated to the physician or surgeon, enabled him with far more certainty and exactness to apply his remedies. Nor was this all: the constant presence of a body of students [stimulated] the promotion of medical science, in the discovery of new modes of alleviating sufferings, and in the attainment of knowledge, of which the patients were always themselves the very first to reap the benefits. Nor did the benefits even stop here, for from the medical school and from the wards of the hospital hundreds went forth to our towns, our villages, and hamlets, carrying with them the sound practical knowledge they had acquired, and diffusing everywhere the advantages they had thus derived…Wherever the British flag waved…there were also our young men carrying from the medical schools and hospitals the only

[1006] P. Stanley, *For Fear of Pain: British Surgery, 1790-1850* (Rodopi, Amsterdam, 2003), p. 32; N. Goodman, 'The Supply of Bodies for Dissection: A Historical Review', *British Medical Journal*, 2 (1944), p. 807.
[1007] Linebaugh, 'The Tyburn Riot' in Hay, Linebaugh, Rule, Thompson and Winslow (eds.), *Albion's Fatal Tree*, p. 70.

> protection against the dangers of climate and of toil, to which their fellow man exposed themselves.[1008]

Many of these teaching hospitals were also able to offer courses in dissection to their students. Those which did so were hailed, as illustrated in the above passage, as fostering the progression of medicine and of science.[1009] Accordingly, these schools experience a dramatic increase in the number of students demanding training in the minutiae of human anatomy. In the early eighteenth century, a maximum number of ten corpses annually were available to the anatomists and medical students in London; by 1831, eleven bodies were made available each year for the eight hundred or so medical students based in the city.[1010] This disparity becomes all the more ludicrous when considered in the light of the recommendation that each student should have at his disposal three cadavers – one on which to practice operative surgery, and the other two to dissect.[1011] Nonetheless, the bodies of criminals were considered excellent dissecting material, as they were generally young and relatively healthy (at least inasmuch as they rarely suffered from the gruesome injuries, chronic illnesses, or acute infections which often caused the demise of workhouse and hospital inmates).[1012]

Through the act of dissection the state harnessed death, and the complex social and cultural relationships and rituals surrounding it, to reinforce public punishment for deplorable crimes.[1013] These criminals were considered so shocking, their crimes so unpardonable, that to take their life

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1008 'St. Bartholomew's Hospital', *The Times*, 17672 (17 May 1841), p. 3.
1009 'To the Editor of the Colonial Times', *Colonial Times* (15 January 1833), p. 3.
1010 Stanley, *For Fear of Pain*, p. 32; Linebaugh, 'The Tyburn Riot' in Hay, Linebaugh, Rule, Thompson and Winslow (eds.), *Albion's Fatal Tree*, pp. 70-71.
1011 Goodman, 'The Supply of Bodies', p. 807.
1012 W. Brockbank, 'Old Anatomical Theatres and What Took Place Therein', *Medical History*, 12 (1968), p. 376; H. MacDonald, 'Procuring Corpses: The English Anatomy Inspectorate, 1842-1858', *Medical History*, 53 (2009), p. 381.
1013 It was *unnatural* crimes, rather than *disorderly* crimes, which society found outrageous and unforgiveable. Dissection, as an unnatural act, was a fitting addendum to an unnatural death by hanging – both these acts were accepted as an appropriate punishment for such unnatural crimes (G. Karskens, 'Death was in his Face: Dying, Burial and Remembrance in Early Sydney', *Labour History*, 74 (1998), p. 22, p. 28).

was judged an insufficient retribution; the desecration of their corpses after death was necessary to further emphasise the depravity of their actions during life.[1014] Dissection added "some further Terror and [a] peculiar Mark of Infamy" to the already-formidable punishment of death by hanging.[1015] This was wreaking vengeance, legally and publicly, upon the bodies of the guilty.[1016] Anatomisation was also understood to offer these criminals a means – although hardly by choice – by which to repay the society they had so grievously offended.

This understanding of dissection as a punishment – as the consequence of criminal acts – pervaded society and informed widespread fears of post-mortem examination.[1017] Public sentiment tenuously supported the punishment of criminals through dissection, but could not condone the notion of inflicting such penalties upon those who had committed no crime.[1018] Here, the differentiation between the deserving and the undeserving poor was clear: it was acceptable for those who were idle and lawless to be dissected, but those who were honest, although poor, should be spared such a humiliating fate.[1019] Some wealthier members of society did suggest that paupers who had been dependant upon the state during life should view dissection as a method of repaying the society which had supported them, in the same way that criminals did. However, a significant proportion of the government expressed their dissatisfaction with such a proposal, perhaps influenced by the knowledge that the state also supported their lifestyles.

[1014] R. Davis, *The Tasmanian Gallows: A Study of Capital Punishment* (Cat & Fiddle Press, Hobart, 1974), p. 3; Karskens, 'Death was in his Face', p. 28.
[1015] Cited in Linebaugh, 'The Tyburn Riot' in Hay, Linebaugh, Rule, Thompson and Winslow (eds.), *Albion's Fatal Tree*, pp. 76-77.
[1016] Karskens, 'Death was in his Face', p. 28.
[1017] H. MacDonald, 'The Anatomy Inspector and the Government Corpse', *History Australia*, 6 (2009), p. 40.14.
[1018] At public executions, the crowd did sometimes still riot in an attempt to prevent the felon's remains from being taken away for dissection (A Correspondent, 'Bodies for Dissection', *British Medical Journal*, 2 (1847), p. 379).
[1019] J. Knott, 'Popular Attitudes to Death and Dissection in Early Nineteenth Century Britain: The Anatomy Act and the Poor', *Labour History*, 49 (1985), p. 7.

By the 1820s, intense competition for this limited pool of legally available corpses had pushed up the price to truly astronomical figures – from around three guineas in 1809, charges had risen within two decades to a poverty-inducing sixteen guineas.[1020] These costs were difficult for most medical students to bear. Some were forced to pool their funds and share a corpse, while others were obliged to merely spectate at dissections undertaken by others, or to attend anatomy museums where wax models and brightly coloured displays of body parts were exhibited (although simply observing would not allow them to pass their examinations).[1021] These problems were particularly acute for students attending private anatomy schools. As these institutions existed in a grey area, neither illegal nor wholly accepted, they had no legitimate, permanent source of cadavers on which their students could learn the intricacies of the human body, or practice their ligatures and lithotomies.[1022] Predominantly attended by apprentices and students who could not afford the fees of hospital schools, or those who sought additional lessons, the private academies generally operated during the summer to avoid direct competition with larger schools.[1023]

Prominent hospital schools had a clear advantage in sourcing bodies for their anatomy classes. Not only were they able to make use of the bodies of deceased, unclaimed patients from their own wards as teaching material, but they could also exercise their considerable influence to secure arrangements with workhouses. The hospital schools often bargained with these workhouses, bartering free medical treatment for their inmates during life in exchange for the use of their bodies upon death. The sheer size of the workhouses and hospitals meant that there

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[1020] Stanley, *For Fear of Pain*, p. 171.
[1021] A. Bates, "Indecent and Demoralising Representations': Public Anatomy Museums in Mid-Victorian England', *Medical History*, 52 (2008), p. 1; Stanley, *For Fear of Pain*, p. 171.
[1022] R. Richardson, *Death, Dissection and the Destitute* (2nd ed., University of Chicago Press, Chicago, 2000), p. 40.
[1023] This allowed students to study over the summer at a private school, then take examinations at a hospital school when term started in winter. It may also have eased demand for corpses in winter, when the larger schools were at their busiest. It did mean, however, that any cadavers sourced by the private schools needed to be used quickly, as they putrefied more rapidly in the summer heat.

were always a number of corpses lying unclaimed in cold, gloomy dead-rooms across the city. Additionally, the proximity of the patients treated on hospital wards allowed medical students to follow inmates through their treatment (albeit unsuccessful) to their appearance on their dissection table. This was excellent practice for the pupils, who could then trace and correlate the appearance of symptoms in their patients during life to any pathological lesions or abnormalities found within their bodies upon post-mortem examination.[1024]

With legal avenues for obtaining corpses exhausted, the medical profession and their students existed in a state of unease and instability. Unable to obtain the raw materials with which to extend their medical knowledge and practice their surgical skills, wealthier scholars began undertaking their anatomical studies in foreign schools such as Dublin or Paris, where radical legislation made corpses more freely available to keen practitioners.[1025] This tarnished the reputation of the British medical schools, and those who studied and taught within them.[1026] The students and other medical practitioners who remained in Britain, however, sought a solution closer to home.

In a society where everything was available for a price, anatomists began to turn to "a clandestine criminal fraternity" to meet their needs for corpses.[1027] They found that if sufficient money was offered, bodies could be sourced (with or without consent) from hospital dead rooms, gaols, asylums, and workhouses with credulous or money-hungry overseers. The purportedly closed eyes of the medical profession to the sources of their anatomical material acted to stimulate the

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[1024] R. Porter, 'Hospitals and Surgery' in R. Porter (ed.), *Cambridge Illustrated History of Medicine* (Cambridge University Press, Cambridge, 1996), p. 223.
[1025] H. MacDonald, *Human Remains: Episodes in Human Dissection* (Melbourne University Press, Carlton, 2005), p. 12.
[1026] Knott, 'Popular Attitudes to Death', p. 4.
[1027] J. Walton, 'Review of *Death, Dissection and the Destitute*', *Journal of Social History*, 23 (1989), p. 193; Stanley, *For Fear of Pain*, p. 32; see also E. Hurren, *Dying for Victorian Medicine: English Anatomy and its Trade in the Dead Poor, 1834-1929* (Palgrave Macmillan, Basingstoke, 2011).

activities of grave-robbers and resurrectionists.[1028] Some were remarkably resourceful, even willing to pose as mournful relatives waiting to claim the body of a beloved family member, only to pass it discreetly into the waiting hands of the anatomy school porter.[1029] Others bribed undertakers to sell them bodies and replace them with stones or soil before sending the coffin away with the grieving relatives; more than a few mourners unknowingly wept over caskets filled with bricks, while their loved ones, secreted in a sack, were being delivered to the back door of the closest anatomy school.[1030]

Just as the poor were particularly vulnerable to unsanctioned anatomical examinations, they were also susceptible to grave-robbing.[1031] Even when paupers were granted the meagre dignity of being buried in a coffin, their flimsy caskets were often interred in shallow communal graves, yielding easily to the resurrectionists' wooden shovels.[1032] Many anxious relatives kept a vigil over their loved one's grave for several weeks, through the day and night, to protect the dead from lurking grave-robbers. Even the wealthy, who could enjoy the relative security of interment in lead-lined coffins, stone mausoleums, or even the iron-barred 'mortsafe', often paid a servant to keep watch until the body had decomposed.[1033] Figure 16, below, shows the apprehension of a bodysnatcher in the act of making off with a corpse secreted in a basket. Although the resurrectionists' interest was confined only to those cadavers who would prove profitable due to their use as material for anatomists' dissection tables, the anatomy schools were often supplied with putrid corpses that had been buried up to three weeks earlier, limiting their

[1028] S. Burrell and H. Gill, 'The Liverpool Cholera Epidemic of 1832 and Anatomical Dissection – Medical Mistrust and Civil Unrest', *Journal of the History of Medicine and Allied Sciences*, 60 (2005), p. 488.
[1029] Knott, 'Popular Attitudes to Death', p. 2.
[1030] W. Moore, *The Knife Man: Blood, Body-Snatching and the Birth of Modern Surgery* (Bantam Press, London, 2006), p. 84.
[1031] Karskens, 'Death was in his Face', p. 30, p. 34.
[1032] A Correspondent, 'Bodies for Dissection', p. 380.
[1033] As Sir Astley Cooper pointedly declared to the Parliamentary Select Committee, however, "there is no person, let his situation in life be what it may, whom, if I were disposed to dissect, I could not obtain" (cited in Moore, *The Knife Man*, p. 90; A. Knight, *Crime Archive: Burke and Hare* (National Archives, Kew, 2007), p. 10).

usefulness.[1034] At the St Bartholomew's medical school, Ormerod attempted to dissect kidneys belonging to James Redruff, but found them "so decomposed that no opinion can be given of their exact condition."[1035] Redruff's heart, however, had been injected and preserved, allowing Ormerod to examine the thickened aortic valves, and to pass his slender metal probe into false membranes which had formed inside the left ventricle.

Figure 66: An etching showing a graverobber "overtaken by the watch" just before handing over his female victim to anatomist John Hunter[1036]

Medical students, many of them born into eminently respectable families, were also deeply implicated in the surreptitious removal of bodies from morgues and graveyards. They, too, sought out and removed corpses, conveying them discreetly back to their anatomy school.[1037] Some pupils undertook these stealthy activities at the behest of their superiors, others under their own initiative, but the principle behind their actions remained identical – while society urged

[1034] 'Bodies for Dissection in Dublin in 1818', *British Medical Journal*, 1 (1943), p. 74.
[1035] SBHAM, *SBH: Case Notes of James Redruff* (MR 16/6/230).
[1036] Etching with engraving by W. Austin, held at the Wellcome Library (London), also at <http://catalogue.wellcome.ac.uk/record=b1183515> accessed 1 September 2010.
[1037] Knight, *Crime Archive*, p. 11.

continued surgical innovation, constant medical breakthroughs, and relentless scientific advancement, the lack of legally obtainable cadavers left anatomists with no adequate source of material with which to fulfil public demands.

In November 1827 the public was horrified to learn that, tempted by the offer of easy money, suspects had been arrested for murdering apparently friendless itinerants and selling the bodies to anatomists. Edinburgh newspapers broke the scandal which outraged every class of British society, but particularly those able to envisage themselves meeting the same shocking fate. The medical profession was also uneasy, with a number of recent court cases finding medical practitioners and their students guilty of inappropriately being in the possession of corpses.[1038]

The Anatomy Act

Into this atmosphere of scandal and chaos, a Bill was brought before Parliament to permit anatomists to use unclaimed patients for dissection.[1039] It was argued that the widespread public horror of dissection was simply a result of it being a punishment for heinous crime, and that if dissection was no longer used as part of a criminal sentence, paupers would not object to their bodies being used as anatomical subjects.[1040] While the Bill met with some support, it was rejected by the House of Lords on the grounds that it left the poor unable to voice their objections to posthumous examinations, and thus vulnerable to unwanted dissection, while the rich would be more able to exercise their rights to prevent their remains falling prey to they anatomist's knife.[1041] Outspoken 'protectors of the poor', such as the Archbishop of Canterbury

[1038] MacDonald, 'Procuring Corpses', p. 380.
[1039] MacDonald, 'Procuring Corpses', p. 380.
[1040] Knott, 'Popular Attitudes to Death', p. 5.
[1041] A Correspondent, 'Bodies for Dissection', p. 381.

and the Lord Chief Justice, Lord Tenterden, were alarmed that those who had committed no crime should be denied a peaceful burial and the opportunity to rest undisturbed in their graves.[1042] They argued that the 'unconquerable objection' held by the working classes to the dissection of their friends and relatives should be respected, and the Bill withdrawn.[1043]

In 1831, Londoners were aghast to discover that the crime of 'burking', which had scandalised the Edinburgh public four years earlier, was also occurring in the midst of their metropolis. This shocking revelation prompted a second attempt to pass a Bill regulating the supply of corpses to medical practitioners and their students. Titled 'A Bill for Regulating Schools of Anatomy', it was a masterpiece of persuasive language, the wording of the first Bill having been judiciously moderated to ease it through the parliamentary process (even the word 'dissection' had been eliminated, replaced instead with the less evocative term 'anatomical examination').[1044]

Essentially, the Bill aimed to ease the chronic shortage of cadavers for anatomical research by adopting a system of presumed consent.[1045] The bodies of hospital patients and workhouse and asylum inmates were permitted to be used as material for dissection, so long as they were not claimed by relatives within forty-eight hours after death, and had not registered their formal dissent to the procedure. In effect, this system assumed that patients were willing to undergo post-mortem examinations unless they declared otherwise. This enabled authorised medical practitioners to be in legal possession of corpses for the purpose of dissection, freeing them from the overhanging threat of legal action for unlawful possession of a cadaver. An

[1042] Richardson, *Death, Dissection and the Destitute*, p. 157.
[1043] Richardson, *Death, Dissection and the Destitute*, p. 157.
[1044] Richardson, *Death, Dissection and the Destitute*, p. 204; MacDonald, *Human Remains*, p. 40.
[1045] MacDonald, 'Procuring Corpses', pp. 380-381.

Inspectorate, unprecedented in its levels of funding and authority (although much less intrusive than later inspectorates), was established to implement and enforce the new regulations.[1046]

While the Anatomy Act was ostensibly proposed to placate the working classes' anxieties about dissection, it functioned instead to actively cultivate it. Samuel Roberts, also vocal in his opposition to the Poor Law, echoed the fear felt by much of the working classes when he wrote that the body of "every unfortunate, miserable being, who is driven by want to seek refuge in a Workhouse, may, when dead, be given up to the Surgeons." Another critic, Lord Teynham, decried the Act on the basis that it would "convert every workhouse-keeper into a systematic trafficker in dead bodies."[1047]

In this manner, the Anatomy Act functioned to worsen the plight of the working classes. Other seemingly minor guidelines associated with the Act emphasised its exploitation of the most vulnerable classes of society. By stipulating that all unclaimed bodies were to be buried with the same parsimonious irreverence, the pauper burial, which had always been despised, became something to be feared. It was not so much the thin, splintery wood which made up the coffins, or the fact that the corpses were buried naked, or wrapped in a sheet of paper or calico, and laid upon a layer of sawdust instead of a soft cloth lining. It was the social disgrace, the public humiliation symbolised by all these physical indignities which so violently emphasised the vulnerability of the poor after death.[1048] This shame was compounded by the ambiguity of what had happened to the body in the mysterious time between death and burial – could anyone really be sure that the bodies inside the coffins (or, indeed, the parts inside the bodies) were complete?

[1046] MacDonald, 'Procuring Corpses', pp. 380-381.
[1047] Cited in MacDonald, 'Procuring Corpses', p. 381.
[1048] J. Strange, *Death, Grief and Poverty in Britain, 1870-1914* (Cambridge University Press, Cambridge, 2005), p. 2; Burrell and Gill, 'The Liverpool Cholera Epidemic', p. 473.

Perhaps, like New Norfolk convict Charles Abbott, a kidney had been removed and preserved.[1049] Or like William Sumpter, another Vandemonian prisoner, maybe part of the stomach had been cut out and retained by a surgeon as an interesting memento of a curious case.[1050]

Fear of such mutilation and of the indignity and uncertainty of a pauper burial led working-class families – most of whom could have better spent their hard-earned pennies on food and clothing to help keep them alive – to take out burial insurance.[1051] Predictably, the number of friendly societies which offered such schemes increased dramatically in the years after the Anatomy Act was passed in 1832.[1052]

Despite the Act's shrewd exploitation of the working classes, much of the British public agreed that any form of regulation over the distribution of these dead bodies amongst anatomists was better than an omnipresent threat of random, ruthless murder.[1053] Upon the wave of terror engendered by the London episodes of 'burking', the Anatomy Act was finally passed into law through the Parliament. It introduced a system of licensing which specified who could undertake human dissection and where it could be undertaken. This capitalised on the supply of corpses which, according to the law, went unutilised due to ignorant superstitions and outdated beliefs.[1054] Henceforth, the Act caused any person in legal possession of human bodies (including overseers of hospitals and workhouses) to effectively become the owner of these

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[1049] Tasmanian Archive and Heritage Office, *Royal Derwent Hospital: Charles Abbott* (HSD 246/4/123).
[1050] TAHO, *RDH: William Sumpter* (HSD 246/4/155).
[1051] Walton, 'Review of *Death, Dissection and the Destitute*', p. 193.
[1052] Richardson, *Death, Dissection and the Destitute*, p. 275.
[1053] MacDonald, 'Procuring Corpses', p. 381.
[1054] A Correspondent, 'Bodies for Dissection', p. 379.

bodies, legally authorised to distribute them to licensed anatomists – unless the subject had specified otherwise.[1055]

Consent and Dissent

Among nineteenth-century medical men there was an implicit understanding, a generally unspoken accord, that the dead bodies of patients should be used to benefit the living. Integral to this perception was the belief that surgeons possessed the right to cut into, separate, remove, keep, and even give as gifts, parts of these bodies.[1056] When anatomists purchased human cadavers, the bodies were transformed into commodities, property purchased by the surgeon and quantifiable in monetary terms.[1057] As Helen MacDonald comments, these corpses became the surgeons' things, utterly objectified and depersonalised.[1058]

This sentiment allowed medical practitioners to easily accept the Anatomy Act's emphasis on presumed consent to dissection. Supporters of the Act emphasised that 'none without consent' would be dissected, but deliberately omitted that this consent would be implied – if the patient had not specifically expressed their dissent during life, surgeons could interpret their silence as assent.[1059] Surgeons were under no legal obligation to enquire whether consent had been forthcoming, nor were they obliged to inform subjects' relatives before performing any type of anatomical examination.[1060] If the inmate lay unclaimed, and the 'interesting' anatomical part was

[1055] MacDonald, *Human Remains*, pp. 39-40.
[1056] MacDonald, 'The Anatomy Inspector', p. 40.11.
[1057] Linebaugh, 'The Tyburn Riot' in Hay, Linebaugh, Rule, Thompson and Winslow (eds.), *Albion's Fatal Tree*, p. 72.
[1058] MacDonald, *Human Remains*, p. 10.
[1059] Richardson, *Death, Dissection and the Destitute*, p. 206.
[1060] L. Picard, *Victorian London: The Life of a City, 1840-1870* (Phoenix, London, 2006), p. 230.

easily obtainable and could be accessed from an area which would not be immediately visually obvious, it would simply be taken.[1061]

Patients were, of course, free to formally object to the dissection of their bodies after death – but many were not aware that such an overt objection was necessary, or how to go about providing it. In order to dissent to anatomical examination, hospital patients and workhouse inmates were required to inform their relatives of their wishes, either in writing or in front of at least two reliable witnesses.[1062] These directives could in themselves be almost impossible for members of the lower classes to fulfil, particularly if they were bed-ridden or weak. Many were illiterate, or able to only write their names, and thus unable to leave a written testimony of their wishes (by the mid-1830s, however, increasing numbers of workhouse inmates chose to sign pre-written declarations expressing their dissent against dissection).[1063] If their dissent was given verbally, the only available witnesses were often fellow inmates of patients (who would be unable, in practical terms, to ensure their friends' wishes were honoured) or institutional staff (who may have financially or socially benefitted by treating the subject's wishes with disdain).[1064]

A small number of patients in St Bartholomew's Hospital were recorded as expressing their desire to avoid dissection if they died whilst under treatment. Dr Ormerod wrote, somewhat dispiritedly, that "no PM" was allowed on the bodies of patients Thomas Fomian, John Brown, Robert Parker, or Thomas Osbourne.[1065] Another patient, sixty-eight -year-old Timothy Dunn, had been admitted suffering from abdominal cramps, diarrhoea and vomiting.[1066] Ormerod

[1061] MacDonald, 'The Anatomy Inspector', p. 40.11.
[1062] Richardson, *Death, Dissection and the Destitute*, p. 205; MacDonald, 'The Anatomy Inspector', p. 40.11.
[1063] Knott, 'Popular Attitudes to Death', p. 17.
[1064] Richardson, *Death, Dissection and the Destitute*, pp. 206-207.
[1065] SBHAM, *SBH: Case Notes of Thomas Fomian* (MR 16/6/5-6a), *John Brown* (MR 16/6/92), *Robert Parker* (MR 16/6/89-90), and *Thomas Osbourne* (MR 16/6/244-a).
[1066] SBHAM, *SBH: Case Notes of Timothy Dunn* (MR 16/6/376).

dosed him with chalk mixture every hour until his purging ceased the following day just after midday. However, Dunn began to feel increasingly sleepy. Ormerod urged his patient to continue walking about to prevent him slipping into unconsciousness, but Dunn nonetheless lay down in his bed, "went quietly to sleep and died next morning at 10AM." Ormerod eagerly began Dunn's post-mortem examination, keen to inspect his patient's internal organs for any clues to his fatal illness. He found that the liver was large and the intestines were coated with a thin layer of yellow mucous, but were otherwise healthy, as were the kidneys. In the wall of Dunn's stomach, however, he found a "small hard white mass…as big as a windsor bean." He was just about to further investigate the structure of the tumour and its contents when he was rudely disrupted. "Two vociferous Paddies," he wrote indignantly, "would not permit further examination" of Dunn's body.[1067] This time, the fortuitous – and noisy – arrival of the patient's relatives had occurred just in time to prevent the complete destruction of their loved one's remains.

The body of another patient, Michael Sullivan, remained completely untouched despite Ormerod's particular interest in his case. Two weeks earlier, Sullivan, a "habitually intemperate shoemaker," "ran the handle of an awl into the ball of the right thumb…where the base of the thumb meets the palm."[1068] Sullivan self-treated the small wound, applying a plaster until it healed. Two days before his admission, he felt an acute tightness in his chest which alarmed him so much that he sought medical attention. As he was stumbling down the stairs to seek help, the attack worsened, causing him to fall into the street. By the time he was admitted to hospital, Sullivan was "under the impression that he had a most serious disease." He was right. The simple accident with the awl had allowed tetanus bacteria to take hold in his body (although the role of bacteria would not be identified for decades). It was a horrific illness culminating in a

[1067] SBHAM, *SBH: Case Notes of Timothy Dunn* (MR 16/6/376).
[1068] SBHAM, *SBH: Case Notes of Michael Sullivan* (MR 16/6/140).

horrendous death. Eberle describes tetanus patients such as Sullivan as existing on "a continued rack of torture," the "muscles of the chest and throat…violently and painfully contracted, the arms and legs forcibly extended, the shoulders thrust forwards, the abdominal muscles firmly retracted against the viscera, and the whole frame thrown into a most painful and unyielding state of tonic spasm."[1069] After enduring three days of this "most horrible pain," Sullivan died at two o'clock in the morning. Ormerod would have been keen to explore his patient's remains for signs of the disease, but his relatives appear to have staunchly refused consent.

Other patients provided limited consent – or perhaps care was taken in these cases to ensure that the bodies appeared intact. Mr Knight, for example, a soldier "of a large and remarkably fine family," was admitted with paralysis of the lower limbs, and spent six months in hospital before his death.[1070] On a warm, fresh day in November 1845, Ormerod began his examination of Knight's body. He thoroughly probed Knight's brain, commenting on the thickness of the skull in comparison to the relatively small size of the brain, and noting a cyst "about as big as a french bean & oval." He then began to examine the rest of Knight's body, a procedure which would usually involve a long incision down the subject's chest and abdomen. In Knight's case, however, Ormerod had only been permitted to examine his subject from the back, presumably to ensure the corpse appeared untouched from the front. The subject was duly heaved indecorously onto his stomach, and a long cut made down the spine, exposing the bone. After a close inspection Ormerod deemed the spinal cord "firm and healthy throughout." An investigation of the abdominal organs was not as straightforward. After searching fruitlessly through the opening in his patient's back, Ormerod eventually found the right kidney, but, he wrote irritably, the "left kidney could not be found by this clumsy way of proceeding."

[1069] J. Eberle, *A Treatise on the Practice of Medicine* (3rd ed., vol. 2, Grigg and Elliott, Philadelphia, 1835), p. 120.
[1070] SBHAM, *SBH: Case Notes of <[…]> Knight* (MR 16/6/64).

In some cases, surgeons may have been granted permission to open certain parts of a patient's body, but not to proceed with a full examination. William Collin, a "strongly made man" was admitted to St Bartholomew's hospital after suddenly collapsing in the street. Although he recovered his senses relatively rapidly and was able to recognise his visiting friends, he began to lose control over his limbs, sinking into unconsciousness and dying within nine hours of his admission.[1071] Ormerod was permitted to open Collin's skull, but was not to touch any other parts of his body. In many patients, specific areas of the body – such as the brain, in Collin's case – would have been of particularly interest, perhaps able to offer more information to connect symptoms during life to pathological abnormalities after death.

To ensure corpses remained safe from the anatomists' knife, relatives were required to collect the body of the deceased with forty-eight hours of death. If the patient's body lay unclaimed after this time, surgeons were free to begin their dissection. This time limit placed considerable pressure on the bereaved family, who was required to show that they had sufficient resources to pay for the burial of their loved one. If they could not afford a ceremony, they were unable to claim the body – or to protect it from anatomical examination.[1072] This financial bounty was a huge obstacle to many working-class families who could simply not afford the costs of a burial. John Knott asserts that while eighty-three percent of workhouse inmates dying in London in 1827 went unclaimed, the relatives of at least seventy-six percent of these did attend the parish ceremony marking the death of their loved ones.[1073] What was interpreted by the state as cold indifference was, in fact, more likely to be tragic inability to get to the hospital in time to secure a patients' body.

[1071] SBHAM, *SBH: Case Notes of William Collin* (MR 16/6/42).
[1072] MacDonald, 'The Anatomy Inspector', p. 40.14.
[1073] Knott, 'Popular Attitudes to Death', p. 6.

This inability to ensure protection from dissection cultivated fears of examination after death. Although the Anatomy Act had formalised relatives' 'right to dissent' against dissection, periodic newspaper sensations fostered the fear that little could actively be done to protect these rights, and that they were easily undermined by determined anatomists.[1074]

Dissection enabled the establishment of what eighteenth-century anatomist William Hunter describes as a "necessary inhumanity," the construction of "defensive barriers" in the mind of each medical student allowing them to forge through these cultural taboos surrounding treatment of the dead.[1075] The darker side of this necessary inhumanity, however, was the destruction of a natural respect for the dead. Medical students became at ease with cavalier treatment of cadavers, casually accepting of "gross indecencies," and thus less willing to accommodate the prudish traditions of bereaved relatives, particularly those of the working classes.[1076]

This perception of anatomists and medical students as callous and opportunistic was propagated by illustrated newspaper scandals, revealing dissection rooms as places of carnage and chaos, where corpses were treated with utter irreverence.[1077] The way these medical men touched, cut open, and deconstructed the dead was far removed from what society termed as acceptable

[1074] MacDonald, 'Procuring Corpses', p. 393.
[1075] Cited in R. Richardson and B. Hurwitz, 'Celebrating New Year in Bart's Dissecting Room', *Clinical Anatomy*, 9 (1996), p. 413.
[1076] MacDonald, *Human Remains*, p. 33.
[1077] MacDonald, *Human Remains*, pp. 30-32.

treatment of the deceased.[1078] Some later Anatomy Acts, such as that passed in South Australia, included a clause stipulating that corpses be treated with due decorum and decency.[1079] To what extent this clause was enforced, however, is questionable. Medical students were renowned for their pranks with anatomical parts, and "it was no uncommon thing to see a regular battle among the students [in the dissecting room], parts of the human body forming their weapons."[1080] There was, however, a vast difference between the flippant tomfoolery of the students, and the uncaring, casual disregard for the dignity of bodies that had little social value during life, and even less after death.[1081]

These corpses, those gleaned from hospital morgues and workhouse dead-rooms, the bodies of those who had been of a low social status during life, were treated with a corresponding lack of decorum and decency after death.[1082] As these bodies had gone unclaimed, hospital and workhouse authorities reasoned that there would be no relatives who may become distressed by the thought or sight of their mutilation.[1083] Knott's statistics (cited above) regarding the proportion of relatives who could not afford to claim their loved ones' bodies but nonetheless attended parish ceremonies, would seem to contradict such assumptions. Parts were routinely removed from these cadavers, and were often preserved as specimens for the edification of medical students.[1084] If a corpse was to be presented to relatives, the parts might be replaced to ensure the body appeared as normal as possible (skulls, for example, may have been substituted

[1078] MacDonald, *Human Remains*, p. 30.
[1079] This legislation was passed in the 1880s (MacDonald, 'The Anatomy Inspector', p. 40.2).
[1080] Knott, 'Popular Attitudes to Death', p. 16.
[1081] MacDonald, 'The Anatomy Inspector', p. 40.7.
[1082] MacDonald, 'The Anatomy Inspector', p. 40.7.
[1083] MacDonald, 'The Anatomy Inspector', p. 40.7.
[1084] MacDonald, 'The Anatomy Inspector', p. 40.6.

with plaster casts or abdominal organs), although careless handling of the cadaver may have inadvertently altered their appearance.[1085]

A dread of dissection, of mutilation after death, was widely considered to be an entirely natural sentiment.[1086] In the early nineteenth century, death was still the province of religion, rather than medicine.[1087] An intricate maze of beliefs, fears, and customs about the specific point at which a person was actually dead, about burial and the proper handling of a corpse, about resurrection and afterlife, informed understandings of what was considered acceptable – and what was emphatically rejected as unacceptable.[1088] As a challenge to the cohesiveness and stability of society, it was crucial that death could be 'managed'. Death was acceptable when it tallied with the predictable and customary role of the dying – this was 'the good death', where prescribed roles were understood, accepted, and adhered to by both the dying and those in the surrounding community.[1089] Working-class families were content to live around the dead body of a loved one for several days while funds were raised for its burial[1090] – this form of death was not alien and frightening; it was simply another part of life.

[1085] For example, if bodies were roughly handled they may become marked, or if a head was left hanging over the end of a dissecting table blood may collect here, altering the appearance of the face ('Bodies for Dissection in Dublin in 1818', p. 74; MacDonald, 'The Anatomy Inspector', p. 40.6).
[1086] Ironically, the public enthusiastically attended anatomy museums; contrary to the desecration of dissection, such spectacles of anatomy were considered to be "an interesting and acceptable activity" (Bates, "Indecent and Demoralising Representations", p. 1; Knott, 'Popular Attitudes to Death', p. 7).
[1087] T. Walter, 'Historical and Cultural Variants on the Good Death', *British Medical Journal*, 327 (2003), p. 218.
[1088] Knott, 'Popular Attitudes to Death', p. 13.
[1089] F. Toscani, C. Borreani, P. Boeri and G. Miccinesi, 'Life at the End of Life: Beliefs About Individual Life After Death and "Good Death" Models – A Qualitative Study', *Health and Quality of Life Outcomes*, 1 (2003), at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC280703/> accessed 4 August 2010.
[1090] A. Clark-Kennedy, *The London: A Study in the Voluntary Hospital System* (vol. 2, Pitman Medical, London, 1963), p. 2.

The frequent attendance of grieving relatives at religious ceremonies to mark the passing of their loved ones hints at the depth of this influence in shaping perceptions of dissection.[1091] These understandings were based upon a complex blend of Christian and semi-pagan traditions in which death was widely considered to be a gradual process, occurring over a series of stages during which the soul slowly exited the body.[1092] Dissection abruptly dislocated this natural process, disrupting the traditional pace of grieving and the ability of relatives to handle the body in a traditional manner.[1093] Accepted and understood practices of mourning and burial were disturbed, transforming death into something unknown, and therefore frightening.[1094]

The burial of body parts or of corpses missing limbs, organs, or heads was similarly feared. It was widely believed that the souls of such incomplete bodies would be unable to find rest, and would return to torment the living for their irreverent treatment of the deceased.[1095] Catholics, in particular, were disturbed by the potential of dissection to interfere with the "future repose of the soul," as they held that the body belonged to God and should not be violated even after death.[1096] The mutilation or desecration of a body could therefore jeopardise its resurrection, potentially stranding the unfortunate deceased with no means to rise again when Christ returned.[1097] Compounding this dilemma was the ease with which parts of a body could be removed (and the removal concealed) and distributed. The Anatomy Act did not encompass the regulation of the distribution of body parts, only whole corpses.[1098] Essentially, dismembered body parts lay outside the remit of the Act, meaning that illegally obtained corpses (those

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[1091] R. Houlbrooke, *Death, Religion, and the Family in England, 1480-1790* (Oxford University Press, Oxford, 2000), p. 191.
[1092] Richardson, *Death, Dissection and the Destitute*, p. 7; Knott, 'Popular Attitudes to Death', p. 13; Karskens, 'Death was in his Face', pp. 27-28.
[1093] Knott, 'Popular Attitudes to Death', p. 14.
[1094] Karskens, 'Death was in his Face', p. 23.
[1095] Karskens, 'Death was in his Face', p. 31.
[1096] Richardson, *Death, Dissection and the Destitute*, p. 17; R. Porter, 'Medical Science' in Porter (ed.), *Cambridge Illustrated History of Medicine*, p. 154.
[1097] Stanley, *For Fear of Pain*, p. 33.
[1098] MacDonald, 'Procuring Corpses', pp. 388-389.

acquired without permission, or in cases where the relatives or subject had been opposed to dissection) could simply be cut up and distributed without retribution. Here, dissection was a brusque, violent process with potentially devastating eternal consequences.[1099]

Dissection and Anatomy Laws in the Colonies

The fears which fuelled public horror and disgust about dissection in Britain were transplanted to Van Diemen's Land.[1100] However, the smaller settlements and the absence, for many decades, of medical schools did mean that the threat of dissection was somewhat mitigated.[1101] Colonial medical practitioners were nonetheless keen to be part of the scientific advances being undertaken in Britain and other centres.[1102] There remained, however, strong demand among surgeons for the small number of bodies executed each year as punishment for misdeeds committed in the colony by repeat offenders. The fate of these bodies clearly played on the minds of those facing death in the Australian colony, whether due to the effects of disease or as a result of punishment, demonstrating the extent to which the strong spiritual beliefs which structured responses to illness and death in Britain had also become an unquestioned part of culture in the colonies.

One Vandemonian convict eloquently and succinctly expressed the exigency of belief in the afterlife at his trial in Hobart Town in 1841.[1103] Patrick Minnighan was part of a gang of fifteen

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[1099] A Correspondent, 'Bodies for Dissection', p. 379.
[1100] Karskens, 'Death was in his Face', p. 22, p. 28.
[1101] Kaskens, 'Death was in his Face', p. 35.
[1102] K. White, 'Negotiating Science and Liberalism: Medicine in Nineteenth-Century South Australia', *Medical History*, 43 (1999), p. 173.
[1103] *Decisions of the Nineteenth Century Tasmanian Superior Courts: R. v. Minnighan* (Division of Law, Macquarie University and the School of History and Classics, University of Tasmania), at <http://www.law.mq.edu.au/sctas/html/1841cases/RvMinnighan,1841.htm> accessed 25 May 2010.

men "of the very worst character" confined to the Port Arthur settlement.[1104] The group was kept under constant close supervision, chained to an iron cable while performing the monotonous, gruelling task of breaking stone. Despite this surveillance, the gang concocted an escape plan. A file was secured with which their chains would be broken, but at the crucial moment their plan was exposed. Minnighan settled on James Travis, "a mere lad," as the culprit and became increasingly more threatening towards the boy as the day wore on.[1105] In the late afternoon, Minnighan was released from his chains. Grasping a stone hammer, he went towards Travis and as the boy stooped down Minnighan struck him violently on the head. Travis collapsed, unconscious and bleeding profusely from wounds to his face and scalp.

Travis was rushed to the Port Arthur hospital. Dr Brownell cleaned the two wounds on his head – one ran above his right eyebrow, "extending to the upper portion of the eyelid, and penetrating to the bone, a portion of which was detached, and lay forward on the wound," the second exposing the fractured bone over his right temple.[1106] After the bleeding ceased, Travis appeared to be recovering. He spoke sensibly, and was even able to provide a lucid account of his assault. On the fourth day, however, he was struck by fever and within the day he had died from an abscess caused by the bone penetrating the brain over his right temple.

Minnighan's poor record sealed his death sentence. As the judge intoned his verdict – "return to the place from whence you came, and from that to the place of execution, where you will be hung by the neck till you be dead; that after, your body be dissected and anatomized, and may God have mercy on your soul" – Minnighan, chewing on a piece of tobacco, spat derisively over

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[1104] Indeed, Minnighan's judge decried the sentence which had freed the prisoner just six months earlier for a "case of the same description [while] your fellow companion suffered on the scaffold" (*Decisions of the Nineteenth Century Tasmanian Superior Courts: R. v. Minnighan*, accessed 25 May 2010).
[1105] *Decisions of the Nineteenth Century Tasmanian Superior Courts: R. v. Minnighan*, accessed 25 May 2010.
[1106] *Decisions of the Nineteenth Century Tasmanian Superior Courts: R. v. Minnighan*, accessed 25 May 2010.

the rail of the box.[1107] He ground his teeth, swung himself from the dock, and shouted defiantly to the judge and his attendants, "Yes, you may dissect my body, but thank God, you can't my soul!"[1108]

As in Britain, the gallows were the only legal source of corpses available to Vandemonian anatomists until the passing of the Anatomy Act. Despite existing within a markedly smaller population, there existed a strong rivalry among colonial surgeons and their medical students, all keen to secure the remains of criminals hung for secondary offences. While not endorsed by law, colonial surgeons were able to obtain and open the bodies of unclaimed patients who died in government hospitals and asylums. As these institutions were state run, the bodies of patients who died whilst under treatment were often retained by the institution, and their surgeons permitted to make use of these corpses without fear of reprisal. This inadvertently prompted an uncomfortable comparison between the bodies of executed prisoners and those of unclaimed patients – upon death, the state retained control over the fate (in both a physical sense, in terms of burial, and also in a spiritual sense) of both groups.[1109]

The practice of dissection in Van Diemen's Land first became regulated in 1869, with an Act which essentially mirrored its British counterpart.[1110] This legislation made legal the use of unclaimed bodies as material for dissection by licensed practitioners operating on licensed premises.[1111] As in Britain, these surgeons were under no obligation to warn either the patients or their relatives that, upon death, they were likely to be dissected. However, while British

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[1107] *Decisions of the Nineteenth Century Tasmanian Superior Courts: R. v. Minnighan*, accessed 25 May 2010.
[1108] *Decisions of the Nineteenth Century Tasmanian Superior Courts: R. v. Minnighan*, accessed 25 May 2010.
[1109] M. Sturma, 'Public Executions and the Ritual of Death, 1838', *The Push from the Bush: A Bulletin of Social History*, 15 (1983), p. 7.
[1110] Van Diemen's Land and South Australia were the only two Australian colonies with Anatomy Acts. Later in the nineteenth century, however, with the growth of Australian medical schools, some states (South Australia, Victoria and New South Wales) made changes to, or created, anatomy laws which allowed anatomists to make use of unclaimed bodies just twelve hours after the patient had died (MacDonald, 'The Anatomy Inspector', p. 40.2, p. 40.13).
[1111] MacDonald, *Human Remains*, p. 180.

relatives had forty-eight hours to collect the body of their loved one, bereaved Vandemonians had just twenty-four hours to become aware that their family member had died, raise the funds for an appropriate burial, and claim the body.[1112]

Until an Anatomy Bill was passed, however, there was no legislation which protected inmates.[1113] Colonial medical men were thus free to use both the information and the body parts they gathered for their own purposes, such as augmenting a personal anatomy collection or that of a benefactor.[1114] This use of anatomical specimens as gifts or commodities – the objectification and exchange of body parts in an economy consisting of a turbulent mix of scientific advances, medical progress, and social bargaining for position and reputation – was a common means of strengthening ties (both academic and personal) between surgeons in the colonies and their colleagues in Britain.[1115]

Thus, unclaimed colonial bodies were at just as much risk of unwanted post-mortem examinations as those which lay in British dead-rooms. In both Van Diemen's Land and Bermuda, horrified convicts told scandalous tales of routine dissection of patients' bodies. Four Bermudian prisoners undertaking burial duty were shocked to discover the body of a fellow convict, Patrick McGee, who had died the previous day aboard the *Tenedos* hospital hulk.[1116] McGee's corpse lay naked in a rough wooden coffin, an old shirt thrown carelessly over the mutilated remains of his body. The dissection of McGee's body had occurred immediately after his death, with his corpse indecorously dumped into the coffin awaiting burial and his internal organs hastily buried nearby in a shallow pit dug in the sand.

[1112] MacDonald, *Human Remains*, p. 181.
[1113] MacDonald, *Human Remains*, p. 180.
[1114] MacDonald, 'The Anatomy Inspector', pp. 40.10-40.11.
[1115] Karskens, 'Death was in his Face', p. 35; MacDonald, *Human Remains*, p. 165.
[1116] C. Hollis-Hallett, *Forty Years of Convict Labour: Bermuda 1823-1863* (Juniperhill Press, Bermuda, 1999), pp. 55-56.

Vandemonian convicts received similar treatment upon death in a colonial hospital, according to American convict Linus Miller. He described how, "when a prisoner dies, his remains were dissected, [and] put into a rough coffin in a state of *perfect nudity*."[1117] Robert Marsh, another American convict, also recalled with horror a coffin containing "a part of three or four prisoners" being casually thrown into a shallow grave.[1118] A friend of Marsh's, James William, had died in a colonial hospital, and his remains were allegedly distributed amongst medical students, with some possibly sent back to England.[1119] Other convicts were forced to collect the dismembered pieces of human corpses which lay in a grisly jumble on the dissection room table in the colonial hospital, and inter them, nameless and unmarked, "in a stranger's grave, among felons."[1120] Despite convicts' low social status, society was nonetheless clearly shocked when the irreverent treatment of these patients' bodies was exposed, and their gruesome mutilations made public.

The Process of Dissection

Thirty hours passed between the time Ben Goodman ceased to breathe, and the moment Dr Edward Latham Ormerod picked up his dissecting knife. Examination of the head was considered the most difficult part of a dissection, but it was here that Ormerod began. After incising the skin and peeling it away, using a small sharp lancet in small sweeping movements to release the connective tissues, he set about opening Goodman's skull. If Ormerod was in a

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[1117] L. Miller, *Notes of an Exile to Van Diemen's Land* (W. McKinstrey & Co., New York, 1846), p. 347 (italics original); M. Weidenhofer, *Port Arthur: A Place of Misery* (B. and M. Reid in association with Port Arthur Historic Site Management Authority, Port Arthur, 1990), p. 118.

[1118] C. Pybus and H. Maxwell-Stewart, *American Citizens, British Slaves: Yankee Political Prisoners in an Australian Penal Colony, 1839-1850* (Melbourne University Press, Melbourne, 2002), p. 180.

[1119] Pybus and Maxwell-Stewart, *American Citizens, British Slaves*, p. 180.

[1120] According to this narrative, the convicts who were forced to gather up the human remains discovered that they knew the identity of the corpse; tragically, they had "no alternative" but to bury their friend, mutilated as he was (Pybus and Maxwell-Stewart, *American Citizens, British Slaves*, p. 180).

hurry, he may have used a small hammer to open the cranium just above his ear. When time permitted the surgeon to proceed at a more leisurely pace, he may have used a saw to break the outer part of the bone, swapping this for a chisel and mallet to sever the inner layer. By levering the chisel into the opening made by the saw, and pushing sharply downwards, Ben Goodman's skull was abruptly and noisily separated from his brain.[1121]

Ormerod bent over and examined the exposed organ lying before him in the light streaming in from the windows nearby. The outermost cerebral membrane, the dura mater, was left rough where it was suddenly shorn away from its bony covering. Having cut through this fibrous covering with scissors, the smooth arachnoid coat gleamed murkily at Ormerod from the remnants of Goodman's skull. This second layer of membrane held "a large quantity of serum," which ran out over the scrubbed wood of the dissecting table as he sliced through the covering to expose the brain itself. Ormerod did not spend long examining the organ. He noted that that the "convolutions of the brain were unusually distinct and prominent," but nonetheless "quite healthy."[1122] Without replacing Goodman's skull or its contents, Ormerod moved on to the abdomen of his subject (who, only hours earlier, had still been his patient).

With a small sharp knife, the surgeon made a steady cut down the centre of Goodman's torso, from the base of the neck to the pubis, exposing the complex tangle of organs within. At first enlarging the aperture with forceps, then laying down the instrument and sliding his fingers into the opening, he eased the skin back slowly, drawing it away from the incision.[1123] Keeping his knife close to Goodman's ribs, Ormerod set about dividing both sides of the costal cartilages

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[1121] R. Hodges, *Practical Dissections* (John Bartlett, Cambridge, 1858), p. 13.
[1122] SBHAM, *SBH: Case Notes of Ben Goodman* (MR 16/6/65).
[1123] Ormerod would have employed his sense of touch during such procedures. With no barrier (such as gloves) between his probing fingers and the tissues and organs of Goodman's body, the surgeon could feel, as well as see, any abnormalities.

and intercostal muscles. Once the layers of muscular fibres were separated, he sawed through the sternum and pulled apart the ribcage as stagnant air whistled from Goodman's collapsing right lung.[1124] The left, marked with disease and adherent in several spots, made no sound. After a meticulous examination of both lungs, Ormerod inspected Goodman's stomach. Finding that organ healthy, he traced the length of the small intestine. Dissecting the layers of the organ – first the peritoneal coat, followed by the muscular fibres and lastly the mucous membrane – he found that most of this organ was also healthy, "except for the last few inches of the ileum," which were marked by several "roundish ulcers" and dusky, greyish brown patches.

Next, Ormerod removed Goodman's kidneys, stripping back the covering layers of fat and cellular tissues and tracing the ureter to the organs lying on either side of the spine.[1125] Instead of a healthy, smooth deep red, Goodman's kidneys were "mottled and set with numerous cysts… one at the lower end of the organ being bigger than a duck's egg."[1126] Ormerod also found that although Goodman's spleen was healthy, his liver was a pasty yellow rather than a rich reddish brown.

Ormerod does not mention retaining any parts of Goodman's body as preparations. His subject's brain was probably returned to his skull, his lungs, kidneys and spleen to his abdomen. He may have been roughly sewn back together with catgut, leaving a thick, bumpy wound on his cold, mottled skin. In death as in life, Benjamin Goodman represented the multitude of unclaimed patients lying in numerous hospital and workhouse dead rooms throughout Britain and its colonies. To die in an institution was often a final declaration of desperation. Only those who had no friends or relatives willing or able to tend to them through illness would be prepared

[1124] Moore, *The Knife Man*, p. 117; Hodges, *Practical Dissections*, p. 95.
[1125] Hodges, *Practical Dissections*, p. 175.
[1126] SBHAM, *SBH: Case Notes of Ben Goodman* (MR 16/6/65).

to accept the total sacrifice – temporary or permanent – of independence and dignity which accompanied workhouse or hospital admission.[1127] Some even preferred to die alone on the streets rather than acknowledge the bleakness of their circumstances by seeking assistance at a public institution.

Not all patients, however, were subjected to an examination the same as Goodman's. A few were not examined, occasionally because they had successfully asserted their right to oppose dissection, others because their cause of death was obvious and uninteresting. New Norfolk surgeon Dr Brock elected not to open the body of one of his patients who died from scrofula, as his body was so completely beset with ulcers that his cause of death was plainly visible from the exterior of the corpse.[1128] Some patients underwent just a brief post-mortem examination, entailing little more than the opening of the body to confirm or ascertain the cause of death. Robert Dugley, a New Norfolk patient suffering from paralysis, died from bronchitis after just three days under treatment.[1129] Although Dugley's brain and abdomen were both opened, Brock's examination of his patient's organs were merely perfunctory – hardly surprising when the surgeon had waited three days, with Dugley's body putrefying rapidly in the mid-January heat, before commencing the post-mortem.

Some patients, such as Goodman, were subject to a detailed examination in which organs were taken out, measured, weighed, and their contents analysed. James Fleaver, for example, another Vandemonian patient who was admitted with (and eventually died from the effects of) chronic ulcers, had his lungs, liver and kidneys removed and dissected.[1130] Indeed, most hospital patients

[1127] Karskens, 'Death was in his Face', pp. 25-26.
[1128] TAHO, *RDH: [Ebony]* (HSD 246/6/111).
[1129] TAHO, *RDH: Robert Dugley* (HSD 246/6/128).
[1130] TAHO, *RDH: James Fleaver* (HSD 246/1/84).

who died whilst under treatment would have undergone some form of internal inspection.[1131] Many surgeons did not feel that these cursory examinations required patients' or relatives' permission, particularly in times of epidemic, such as during cholera outbreaks in Britain in the early 1830s.[1132] In the midst of epidemics such as these, amid the chaos of terrifying illness and the social disorder it brought, scandalous rumours spread of patients murdered in their hospital beds to allow their bodies to be used as anatomical subjects. The public's constant fear of hospital admission intensified to the point that riots occurred around institutions, with mistrust of surgeons escalating to near-hysteria.[1133]

A small group of patients, having undergone a straight-forward 'opening' of the body, were then forwarded to anatomy students to be used as material for complete dissections.[1134] This lengthy process involved the total stripping down of the corpse to explore the connection between various parts of the body.[1135] After a simple post-mortem such as Goodman's, the body remained relatively whole, if visibly altered.[1136] After dissection, however, the body was reduced to little more than gruesome mounds of muscle and organs, puddles of blood, and a pile of scraped bones. Students would begin with the abdominal viscera, the parts which would first begin to reek of decomposition, the stench of which clung pervasively to the skin and clothing of the medical men long after they left the dissecting table. Each organ would be meticulously isolated and removed, and often preserved in glass jars full of arsenic or glycerine topped with

[1131] G. Alter and A. Carmichael, 'Classifying the Dead: Toward a History of the Registration of Causes of Death', *Journal of the History of Medicine and Allied Sciences*, 54 (1999), p. 129.
[1132] Burrell and Gill, 'The Liverpool Cholera Epidemic', p. 479; Knott, 'Popular Attitudes to Death', p. 8.
[1133] See, for example, Burrell and Gill, 'The Liverpool Cholera Epidemic'.
[1134] MacDonald, 'Procuring Corpses', p. 392.
[1135] MacDonald, 'The Anatomy Inspector', p. 40. 6.
[1136] MacDonald, 'The Anatomy Inspector', p. 40.3.

lead and a seal of pig's bladder to enable continued study long after exposed flesh would have rotted away.[1137]

Next, the muscles, nerves and arteries were examined. Each artery was gently held aloft with tiny metal hooks, their lengths traced as they dwindled into infinitesimal vessels. These networks of arteries and veins were often injected with resin or wax, tinted a variety of brilliant hues, to produce dramatic models of the human vascular system.[1138] Each group of muscles was meticulously examined and separated, with medical students testing the effects of contracting and releasing the fibres. Francis Burrows, a forty -year-old painter, was admitted to St Bartholomew's Hospital with violent chorea, a severe headache across his forehead, and a disabling hand-drop. After just five days in hospital Burrows died, and his body was taken for dissection. Ormerod found that Burrows' right *extensor communis digitorum* was colourless, "contrasting strongly" with the healthy hues of the extensor *carpi radialis* and *ulnaris* which lay on either side. Ormerod took a sample of this diseased muscle and examined it under a microscope, finding it to be "in a state of fatty degeneration, [while] the properly coloured muscle by the side of it shewed no such changes."[1139] By opening his patient's body, Ormerod had been able to find physical evidence of the muscular condition which had afflicted him during life.

While on paper the differences between a cursory post-mortem and a detailed dissection seem clear, in most hospital morgues there were no clear boundaries between the two.[1140] Some surgeons, such as Brock, routinely made extensive examinations of the brains of their subjects, while others, such as Huston, did not even open the skull. Each medical man would have had

[1137] H. Marsh, 'Report of the Means Employed in Medical Schools of Great Britain for the Preservation of Subjects for Dissection', *The British Medical Journal*, 2 (1872), p. 412; Moore, *The Knife Man*, pp. 122-123.
[1138] Moore, *The Knife Man*, pp. 122-123.
[1139] SBHAM, *SBH: Case Notes of Francis Burrows* (MR 16/6/164a).
[1140] MacDonald, 'The Anatomy Inspector', p. 40.8.

his own procedure, and each would vary in its depth of detail and the extent of its examination. What was acceptable scientific curiosity to one practitioner may have been mutilation to another.

In the eyes of the public, also, the line between dissection and post-mortem examination was blurred.[1141] Both bore the taint of anatomical examination as punishment, and many patients were just as horrified by the thought of a brief post-mortem examination as a complete dissection. The Anatomy Acts in both Britain and Van Diemen's Land were intended to regulate the distribution of corpses for any form of anatomical study, whether a meticulous dissection or a cursory inspection. By controlling who could legitimately possess bodies and stipulating what could be done with them, it was hoped that this deeply-entrenched public fear of dissection would be soothed by the application of scientific facts rather than aggravated by embellished rumours and hearsay. Despite constant emphasis on the great medical advances made in anatomy and pathology, the working classes remained deeply sceptical of the use made of corpses by medical men and their students. According to an article in the *Courier*, this fear and uncertainty were further heightened by the use of patients' bodies for anatomical examinations, as it added to existing fears of hospitals and surgeons.[1142] Although the Anatomy Act succeeded in relieving the intensity of terror associated with grave-robbing, fears of post-mortem examination remained widespread.[1143]

The complexity of the beliefs and emotions surrounding death and the afterlife informed these fears. By eliminating the hope of a 'good death', by removing the psychological frameworks and social role-playing which made the uncertain inevitability of death tolerable, dissection was

[1141] Karskens, 'Death was in his Face', p. 28.
[1142] Cited in Davis, *The Tasmanian Gallows*, p. 42.
[1143] Stanley, *For Fear of Pain*, pp. 34-35.

perceived as the "ultimate invasion" of both the soul and the body.[1144] Whatever distinctiveness and individuality possessed by a patient or prisoner during their lifetime was isolated and removed by the surgeon's scalpel.

It was the use of this same scalpel, however, which allowed doctors to map the uniform progression of diseases in vast numbers of hospital and workhouse patients, to identify their pathological markers in the dead and use these to describe their accompanying symptoms in the living.[1145] It was these post-mortems, however distasteful and frightening, which allowed surgeons to peer inside the human body, to identify and label its parts, to demystify and objectify its sicknesses. Matthew Baillie stated that such a detailed understanding of "anatomy cannot be learnt without the employment of the knife upon the dead body, that great basis on which we are to build the knowledge that is to guide us in distributing life and health to fellow creatures."[1146] These discoveries transformed the discipline of medicine. No longer was each patient's disease a unique manifestation of their humoural imbalances, no longer did the patient's personal retelling of their symptoms form the foundation of the doctor's diagnosis. The emotional was replaced by the scientific, the subjective by the objective.

This process of examination enabled surgeons and their students to become familiar with the human body to a degree not possible through external examination, no matter how methodical or meticulous.[1147] The progression of diseases, the damage wrought on patients' bodies both internally and externally, and the intricate links between the two, could only be traced by

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[1144] Pybus and Maxwell-Stewart, *American Citizens, British Slaves*, p. 181.
[1145] Porter, 'Hospitals and Surgery' in Porter (ed.), *Cambridge Illustrated History of Medicine*, p. 224.
[1146] 'Report from the Select Committee on Anatomy', *House of Lords: The Sessional Papers, 1801-1833* (vol. 244, Oxford University Press, Oxford, 1829), p. 15; 'To the Editor of the Colonial Times', *Colonial Times* (15 January 1833), p. 3.
[1147] A. Digby, *Making a Medical Living: Doctors and Patients in the English Market for Medicine, 1720-1911* (Cambridge University Press, Cambridge, 1994), pp. 91-92.

abandoning social rules about the treatment of the dead and opening the corpse. As London surgeon John Abernethy declared to his discomfited students in the lecture theatre of St Bartholomew's Hospital, it was only by becoming "companions with the dead," by looking, touching, smelling, and listening, that order could be made of the chaos that was the human body, in illness and in health.[1148] Better that medical students learnt their trade upon the bodies of the dead, than risk mangling the bodies of the living.[1149]

[1148] J. South, *Notes Taken on Lectures given by John Abernethy on Natural and Morbid Anatomy and Physiology delivered by John Abernethy Esq FRS in the Anatomical Theatre at St Bartholomew's Hospital in the Year 1819 & 1820* (vol. 1, Library of the Royal College of Surgeons, London, entry for 2 October 1819); MacDonald, *Human Remains*, p. 12.
[1149] A. Cooper, cited in Stanley, *For Fear of Pain*, p. 50.

Chapter Eight

Conclusion

Among the thousands of patients admitted to British hospitals throughout the nineteenth century were three middle-aged men; Solomon Soames, James Britton, and John Pert. While separated by hundreds of kilometres and the passing of years, all three men suffered from the same aching pains of rheumatism. The experiences of each of these three men were captured in their hospital case notes. These records of the day-to-day practice of hospital medicine upon the bodies of these patients, and almost a thousand others like them, has formed the basis of this research through the comparison of the medical treatment provided in hospitals specialising in the care of the sick poor (particularly at St Bartholomew's Hospital), convict patients (at New Norfolk Hospital and the Royal Naval Hospital in Bermuda), and of naval and military inmates (also at Bermuda). Despite their limitations, the sets of data from these three hospitals have provided a rich source of information from which a number of valuable conclusions have been drawn. The similarities between records – such as those belonging to Soames, Britton, and Pert, discussed below – demonstrate a far-reaching medicalisation which occurred throughout

nineteenth-century society. The differences between the three sets of information, however, can be equally as telling. Throughout this period in medical history – particularly the 1830s and 1840s – the practice and theory of medicine underwent a series of complex shifts. These changes utterly transformed the role of the patient, as can be illustrated by examining the language used to describe these three men upon their admission to hospital.

Soames, a forty-two -year-old convict, was transferred from the *Weymouth* hulk to the Royal Naval Hospital in Bermuda at the end of July, 1833.[1150] His brief case notes record the "pain [which] seized upon all parts of the body," but specify few other symptoms. Dr Alexander P. Stiven, colonial surgeon aboard the *Weymouth*, dosed Soames with drastic purgatives and diaphoretics, and prescribed mercury and opium mixed with chalk. The medicines, however, produced only "temporary benefit;" with Soames' "Bowels…still unhealthy" and his "mouth slightly affected with the Mercury," Stiven transferred his patient to the land-based naval hospital.[1151]

Britton was admitted directly to New Norfolk Hospital in 1845 from his master's property, where he was employed as a farm labourer.[1152] A forty-eight -year-old convict from Essex, Britton was received complaining of "pain in the Lumbar region."[1153] His surgeon, Dr Brock, took a detailed history in which he noted that Britton had "Enjoyed good health in his native country, has been four years in this Colony where his health continued good until about eight days ago when he felt a slight pain in his Back which did not prevent him from working but on the following day was unable to remain out."[1154] Brock also recorded that his patient had self-

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[1150] The National Archives, *Admiralty and Predecessors, Office of the Director General of the Medical Department of the Navy and Predecessors, Service Registers and Registers of Deaths and Injuries: Case Book, Royal Naval Hospital, Bermuda: Solomon Soames* (ADM 104/98, p. 00096).
[1151] NA, *Case Book, Royal Naval Hospital, Bermuda: Solomon Soames* (ADM 104/98, p. 00096).
[1152] Tasmanian Archive and Heritage Office, *Royal Derwent Hospital: James Britton* (HSD 246/1/149).
[1153] TAHO, *RDH: James Britton* (HSD 246/1/149).
[1154] TAHO, *RDH: James Britton* (HSD 246/1/149), (grammar original).

treated before seeking hospital attention by taking "some Turpentine and [applying] a Blister to the lumbar region."[1155] After taking Britton's history, Brock conducted a thorough physical examination. Britton's pulse was noted as "72 hard," his tongue was "clean," his "skin natural" in colour and temperature, and his bowels were "confined." The surgeon also noted that his patient bore "the marks of having been vaccinated."

Pert was received at St Bartholomew's Hospital in March 1846.[1156] Aged thirty-six, he had been employed as a type founder when he found himself struck by repeated attacks of rheumatism. Upon his admission to St Bartholomew's, Pert's urine was analysed even before his body was examined. Records of this examination were curt and emotionless, with Pert's symptoms abbreviated into a succinct medical checklist: "Pale pasty face, bloodless eyes. P[ulse]. 108 small soft. Skin warm and moist. T[ongue] flabby with a thin white pasty fur. Skin warm and perspiring. B[owel] habitually confined. Urine rather scanty. Has pain with some heat redness and swelling flying to the different points during the last 5 weeks. No anasarca."[1157] Pert's surgeon, Dr Ormerod, also took a history of his patient's earlier encounters with the medical profession. Pert appears in these notes, but merely as the system within which diseases were located: "Has a blue ring on his gums. Had lead colic 8 years ago: from this time has been liable to attacks of rheumatism, during which his joints become red, painful, and swelled."[1158]

These three cases bear evidence of the steady push towards the depersonalisation of medicine. While in the 1830s Soames's own experiences lay at the very centre of what it was to be a hospital patient, when Britton and Pert were experiencing treatment during the 1840s – just ten

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[1155] TAHO, *RDH: James Britton* (HSD 246/1/149).
[1156] St Bartholomew's Hospital Archives and Museum, St Bartholomew's Hospital, *Medical and Surgical Case Notes of Edward Latham Ormerod, Diseases of the Central Nervous System, Kidneys, Abdominal and Infectious Skin Diseases: John Pert* (MR 16/6/250).
[1157] Anasarca is type of swelling of bodily tissues; for full explanation of terms see Glossary of Terminology and Glossary of Diseases and Conditions (SBHAM, SBH, *Medical and Surgical Case Notes: John Pert* [MR 16/6/250]).
[1158] SBHAM, SBH, *Medical and Surgical Case Notes: John Pert* (MR 16/6/250).

or fifteen years later – they found themselves excluded from the processes and recording of their own diagnosis and treatment.

Patient case notes offer valuable opportunities to examine and explore hospital treatment and perceptions of medical care. They provide glimpses into the patient's own experiences of institutional medical treatment, and also reveal wider patterns of changes and continuities in the practice and discourse surrounding nineteenth-century healthcare.[1159] Although it is crucial that these records are contextualised with contemporary sources, the small number of detailed hospital case notes still in existence renders it difficult to obtain comparative samples. Accordingly, the tantalising opportunities afforded by patient case notes can be rare and fraught with challenges.

Upon examination of the records from the New Norfolk Hospital, the Royal Naval Hospital in Bermuda, and St Bartholomew's Hospital, the diversity of the patient profile between the institutions became immediately apparent. While every effort was made to utilise records which were comparable to New Norfolk's depth of detail and specific time frame, the Vandemonian hospital had few if any parallels in terms of the type of institution and the nature of its records. The peculiar nature of the convict system forced authorities to care for its penal charges in a way not generally adopted elsewhere until the twentieth century creation of the welfare state. The level of innovation observed in the Vandemonian institution through its meticulous records is all but unprecedented, and is not observed in the notes of the other two institutions. This finding dispels the notion that advancement and improvement in medical care and knowledge originated at large metropolitan centres of learning and only slowly filtered out to colonial peripheries. Indeed, of the three institutions examined in this research, New Norfolk Hospital appears to be the more innovative and inventive. Less constricted than St Bartholomew's by its close

[1159] G. Risse and J. Warner, 'Reconstructing Clinical Activities: Patient Records in Medical History', *Social History of Medicine*, 5 (1992), p. 183.

proximity to the meddlesome pens of hospital governors and more free to experiment than their ship-bound Bermudan colleagues, the Vandemonian practitioners were able to implement changes at a speed which belies the large distances that separated them from the metropolitan centre.

New Norfolk also benefited from its reception of patients exhibiting a wider range of diseases than other intuitions. Where St Bartholomew's was bound by restrictive admission criteria, and accordingly refused entry to many patients (such as those suffering infectious or venereal diseases, or those whose conditions were chronic or fatal), New Norfolk did not have the luxury of selecting its inmates.[1160] While St Bartholomew's sought to admit only acute (treatable) and emergency cases, the colonial hospital admitted all patients deemed by surgeons to be in need of hospital care – the elderly, the uninteresting, the infectious, and the incurable – and frequently received cases transferred from other hospitals around Van Diemen's Land.

Patients who were not progressing favourably or quickly at the Colonial Hospital in Hobart Town, for example, were routinely sent on to New Norfolk to 'try a change of air', meaning that New Norfolk accumulated chronic and incurable cases from around the colony. Inmates were often moved in groups from one institution to another; William Ashdown, a forty-eight -year-old convict suffering chronic rheumatism was transferred with a number of other invalids from the Hobart Town institution.[1161] Other patients came individually, such as John Brown, who was received from the Broadmarsh Probation Station where he had been admitted suffering from ophthalmia three months earlier.[1162] Although his symptoms were diminishing whilst under

[1160] See Chapter two for detail on admission procedures.
[1161] TAHO, *RDH: William Ashdown* (HSD 246/1/104 - HSD 246/1/105).
[1162] TAHO, *RDH: John Brown* (HSD 246/1/225- HSD 246/1/231).

treatment at the station, surgeon John McDowell had "no doubt that he [would] benefit by change of air."[1163]

In Van Diemen's Land, as the age of transported convicts increased, the faltering colonial healthcare system was burdened with rising numbers of chronically ill and aging convicts. These men required both active and palliative care, but their medical demands and the detrimental effects upon the cure rates of Hobart Town's Hospital demanded an alternative solution. New Norfolk Hospital was enlisted to fill the growing gap between the primary Colonial Hospital and the invalid depots such as Impression Bay. By consolidating the care of these invalid patients at New Norfolk, space was freed in other colonial institutions for the treatment of the type of acute cases admitted at St Bartholomew's. In this manner, the Colonial Hospital in Hobart Town successfully distanced itself from the high mortality rates associated with caring for those patients who held little hope of recovery. As discussed in Chapter Seven, the impact of this strategy is clearly evident in the mortality rates at New Norfolk Hospital when contrasted with an institution such as St Bartholomew's, where the dying were routinely refused admission.

Patients were not, however, deposited at New Norfolk and forgotten about. Surgeons at this institution showed a remarkably high level of care and interest in their patients' physical and emotional wellbeing which is less evident at St Bartholomew's and the Royal Naval Hospital in Bermuda. This is one manifestation of a unique relationship which appears to have existed between colonial surgeons and convicts, begun on the voyage to Australia when prisoners found themselves under the care and control of a surgeon-superintendent. This somewhat paternalistic attention, in which discipline and restraint had to be awkwardly balanced with the prevention and cure of disease, regular exercise, and moral guidance, enhanced the surgeon's benevolent authority. As Andrews comments, this rendered the practitioner, "whose commands were

[1163] TAHO, *RDH: John Brown* (HSD 246/1/225- HSD 246/1/231).

supposed to seem irresistible, yet favours and indulgences appear to flow from him," as an approachable figure of authority.[1164] Practitioners were often called upon to support convicts' petitions, and feature in a favourable light in some prisoners' accounts. This association may have been fostered by long-term stays in hospital.

Over-crowding and constant bed shortages, compounded by the ever-present need to provide evidence of high rates of cures to inquisitive subscribers and hospital administrators, forced the staff at St Bartholomew's to focus on rapid patient turnover. The sheer number of cases hindered the establishment of a of relationship between doctor and patient, while the smaller numbers in colonial hospitals allowed personal connections – however transitory – to be made between staff and inmates. There was little effort (and probably little time) in lager institutions to obtain or take note of previous medical histories, and personal details such as age, occupation, or marital status were recorded only in relation to current health complaints.

Meticulous note-taking and regular visits from the attending doctor were routine features of every patient's experience at New Norfolk Hospital. Any alteration in an inmate's condition was carefully recorded, and any changes in diet or treatment noted. Convalescent patients were enlisted to check on seriously ill inmates, and duly notified nurses or doctors if a fellow patient experienced any unexpected deterioration. When Francis Hartwell "became insensible and fell down" during a sudden seizure, it was a fellow patient who ran for the doctor and relayed the details of Hartwell's attack.[1165] Surgeons even occasionally sat by the side of dying patients; when Henry Bavin lay dying of *morbus cordis*, Brock visited him five times before his death at midnight, four days after admission.[1166]

[1164] Andrews, 'Case Notes', p. 272.
[1165] TAHO, *RDH: Francis Hartwell* (HSD 246/1/81).
[1166] *Morbus cordis* is a form of heart disease; for explanation of terms, see Glossary of Terminology and Glossary of Diseases and Conditions (TAHO, *RDH: Henry Bavin* [HSD 246/1/219]).

At St Bartholomew's Hospital, the same level of attention to detail is evident in patient notes – but this was generally confined to the period surrounding the patients' admission. If the case resolved rapidly – either in the alleviation of symptoms, cure, or death – the notes were comprehensive from beginning to end, with particularly scrupulous details of post-mortem findings (in some cases, the case notes taken while the patient was under treatment were incomplete to the point of nonexistence – they appear to feature merely as a "preliminary to autopsy").[1167] If, however, the patient failed to show either speedy improvement or deterioration, surgeons tended to lose interest in the case. The swift and unceasing turnover of patients, and the vast number of sick clamouring each week for admission, meant that there were always new and interesting cases awaiting inspection. Any patients who showed little alteration in their condition tended to be abandoned as uninteresting (generally because they were either convalescent or incurably ill) and neglected until they were eventually discharged or died. Doctors often reacted with surprise when a patient suddenly died after an extended period of hospitalisation, simply because they did not observe the gradual decline in strength and vitality.

The sense of community and companionship which appears to be such a distinctive feature of the wards at New Norfolk Hospital is also present in the faded, spidery writing of this institution's case notes. Within these reports, Vandemonian patients retain something more of their individuality – their chaotic and disordered humanness – when contrasted with those of the St Bartholomew patients, who are expressed more as methodical case studies than people. The boredom, the isolation, the discomfort and pain – the unpredictable emotive sensations and sentiments which vary so greatly between individuals – were often stifled in the records of St Bartholomew's, neatened and compressed in the predetermined categories of scientific medicine. Here, illness became less about human experience and more about objectified notions of ideal clinical pathways.

[1167] Andrews, 'Case Notes', p. 274.

The notes from the New Norfolk Hospital, on the other hand, regularly document the moods and feelings of their inmates, frequently in the patients' own words.[1168] A sense of defensive bravado infiltrates the narratives of some patients, such as eighteen -year-old Thomas Smith, who brashly proclaimed his perfect health, asserting that he "never was ill in his life" until his admission to hospital.[1169] John Riley, too, had a fortuitously blank medical history; he advised Brock that he had "never had an hours' illness until about two years ago when he fell in a hold of water whilst labouring under the effects of drink and remained there for one hour when he was taken out and put to Bed with his wet shirt on."[1170] A certain joviality is present in some cases notes. James Upperton, for example, told his surgeon that he self-treated his venereal disease with powders and an ointment, but "does not know what they were, [he] got them from a mate."[1171] Francis Witham declared to his surgeon that "he felt gladsome," and much improved since he arrived at the hospital.[1172]

Records from the Royal Naval Hospital in Bermuda also reveal more personal aspects of patients' experiences, and highlight the difficulties of treating patients aboard ship in comparison to the more spacious and better equipped land based hospitals. John Brooks, for example, was transferred to hospital to escape the noisy and overcrowded sick bay aboard ship. Suffering from symptoms of insanity brought on by overwhelming grief at the loss of his parent from cholera, aboard ship Brooks was "deprived of so many requisite comforts and remedies" which could be provided on shore.[1173] Samuel Gardiner, a convict from the *Dromedary* hulk, was admitted with some urgency after suffering a haemorrhage from "an old ulcer in the left leg [of] nearly 5 years standing."[1174] As Gardiner refused to remain quiet and still enough for treatment

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[1168] Andrews, 'Case Notes', p. 259.
[1169] TAHO, *RDH: Thomas Smith* (HSD 246/4/118).
[1170] TAHO, *RDH: John Riley* (HSD 246/1/248).
[1171] TAHO, *RDH: James Upperton* (HSD 246/4/147).
[1172] TAHO, *RDH: Francis Witham* (HSD 246/4/128).
[1173] NA, *Case Book, Royal Naval Hospital, Bermuda: John Brooks* (ADM 104/98, p. 00040).
[1174] NA, *Case Book, Royal Naval Hospital, Bermuda: Samuel Gardiner* (ADM 104/98, p. 00030).

to take effect, the sore on his leg festered while his surgeon lamented that he was powerless to prevent Gardiner exercising on board the hulk and aggravating the ulcer. A number of Bermudian patients were described as "perfectly worn out," their bodies prematurely wearied by constant physical labour and the ravages of untreatable diseases.[1175]

The considerable variation in the style of case note between institutions is largely due to the dramatically different roles played by patients in each of the three hospitals. St Bartholomew's patients appear in the hospital's case notes as teaching material, nothing more and nothing less, whether under treatment or under the dissection knife. Through this exchange of knowledge and instruction, authors sought to expand and perfect their own and others' medical skills and knowledge.[1176] In such a didactic setting, emotive language and sentimental vignettes were dismissed as subjective and therefore inappropriate.[1177] Such details related to the human person in which the disease was manifest; this person had to be stripped away before the disease could be objectively exposed. Here, bodily systems and "organs assumed centre stage, and patients' views were retained as prefatory material."[1178] Details recorded in the case notes were related not to the patient, but to the progression of disease or the intervention of medical or physical treatments – the patient existed as merely a "negative element," the system in and around which symptoms were exhibited.[1179]

Great emphasis was placed on accurate and specific medical detail, relayed in factual scientific language fit for a professional medical audience. Small changes in the patient's condition were disregarded as trivial, but great care was taken to rationalise and validate diagnoses and treatment

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[1175] NA, *Case Book, Royal Naval Hospital, Bermuda: Peter Cowen* (ADM 104/98, p. 00020).
[1176] Andrews, 'Case Notes', p. 259, pp. 273-274.
[1177] H. Nowell-Smith, 'Nineteenth-Century Narrative Case Histories: An Inquiry into Stylistics and History', *Canadian Bulletin of Medical History*, 12 (1995), p. 52.
[1178] Nowell-Smith, 'Nineteenth-Century Narrative', p. 52.
[1179] M. Foucault, *The Birth of the Clinic* (Routledge, London, 2003), p. 15, pp. 70-71, p. 101; Nowell-Smith, 'Nineteenth-Century Narrative', p. 58.

regimes, both during the inmate's life and upon their death.[1180] Many surgeons published details of their cases – journal articles, lectures notes, and medical manuals were all based on patients' notes – and patient records were the ideal opportunity to highlight the successful use of a new treatment, to support the existence of a new medical 'fact', or to attribute an unsuccessful case to a discreditable remedy.[1181] Accordingly, these records were written with attention to the important facts and physical evidence supporting their understandings of each patient's disease; doctors learnt to justify their opinions using this palpable evidence as part of their note-taking well before opinions were made public.[1182]

Surgeons at New Norfolk Hospital and the Royal Naval Hospital in Bermuda were similarly aware that their actions would be scrutinised, but for very different purposes. While the colonial practitioners were also undoubtedly eager to circulate the details of any curious cases under their care, meticulous note-taking was demanded not by publishers but by colonial and British authorities. The unusually high levels of care and record-keeping experienced by convict patients can be largely attributed to the unusual status of these inmates. These unfree patients were part of the primary workforce of the colonies; unlike St Bartholomew's patients, who were drawn from the vast mass of the urban poor, many of the colonial patients were part of a relatively small pool of useful and economically valuable labourers.[1183]

Each man who could not work due to illness or disability was a burden upon the colonial and imperial purse, a drain rather than a support to his colony. As Nicholas emphasises, a prisoner was of little use as a worker if he was starved, mistreated, or weakened by being denied medical

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[1180] Andrews, 'Case Notes', p. 271.
[1181] J. Andrews and A. Scull, *Customers and Patrons of the Mad-Trade: The Management of Lunacy in Eighteenth Century London* (University of California Press, Berkeley, 2003), p. 24; Nowell-Smith, 'Nineteenth-Century Narrative', p. 48; Andrews, 'Case Notes', p. 275.
[1182] Andrews, 'Case Notes', p. 267.
[1183] S. Nicholas, 'The Care and Feeding' in S. Nicholas (ed.), *Convict Workers: Reinterpreting Australia's Past* (Cambridge University Press, Cambridge, 1988), p. 195.

care.[1184] To protect their investment in good quality healthcare, authorities extended multi-faceted surveillance over prisoners whilst they underwent treatment in hospital. Detailed note-taking supported this scrutiny through the constant monitoring of patients – both at proximity, under the gaze of fellow patients and medical staff, and at a distance, via the copious case records and letters which travelled between colonial medical authorities and government officials.[1185]

Despite the inclusion of descriptions of patients' emotional state and the detailed fragments of patient narrative, it remains clear that the notes from the colonial institutions were still primarily medical records, not anecdotes of pain and suffering, or their alleviation. While lacking the dispassion evident in records from large teaching institutions such as St Bartholomew's Hospital, conscious effort was made by colonial surgeons to expunge the subjective accounts provided by patients, rearticulating them in objective scientific terminology.[1186] Practitioners were repeatedly urged to clarify their reports, to note every visit, to observe every change in condition, diet, and medicine, and to provide continuous and exhaustive observations of the physical and psychological conditions of the prisoners under their care.

The ten to fifteen year difference between the records of the Naval hospital (written between 1832 and 1836) and those from the New Norfolk Hospital (from 1842 to 1848) is, however, significant. The Vandemonian notes are markedly more scientific and precise in their clinical descriptions than the Bermudian records, which provide less factual detail and rely more heavily upon patients' understanding of their own illnesses. For example, in mid-September, 1832,

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[1184] J. Bradley and H. Maxwell-Stewart, 'Embodied Explorations: Investigating Convict Tattoos and the Transportation System' in I. Duffield and J. Bradley (eds.), *Representing Convicts: New Perspectives on Convict Forced Labour Migration* (Leicester University Press, Leicester, 1997), p. 183; Nicholas, 'The Care and Feeding' in Nicholas (ed.), *Convict Workers*, p. 195.
[1185] Foucault, *Birth of the Clinic*, p. 83.
[1186] Nowell-Smith, 'Nineteenth-Century Narrative', p. 57.

Joseph Phillips was admitted into the sick bay aboard the *Coromandel*.[1187] The twenty-four -year-old convict was suffering from diarrhoea and general, griping pains across the abdomen. No specific details of the site of the pain were recorded – a common occurrence in the Bermudian records, where the precise anatomical location of pain or injury is rarely noted. This contrasts with the New Norfolk and St Bartholomew's records, both of which habitually describe in detail specific sites of disease on and within patients' bodies. Thomas Batley, a tallow chandler from Cambridgeshire, was admitted to the Vandemonian institution in 1845, having been afflicted with pain "attacking various parts of his Body at different times." [1188] Brock records that Batley was admitted complaining of "pain in the right and left hypochondriac and epigastric regions increased on pressure."[1189] These statements, and the manner in which they describe the same situation in such different language, reveals the pressure placed on surgeons to convert patients' descriptions of their symptoms into more scientifically objective terminology.

Without the insight gained through an examination of the case notes, it is easy to dismiss the New Norfolk Hospital as a second-class dumping ground for incurable and elderly convicts. Records from the three hospitals, however, support the assertion that the colonial institution did in fact provide medical treatment which was generally as good or better than that received by the other sample groups. The use of new medicines, instruments, and practices as described in the patient notes from New Norfolk Hospital provide clear evidence of the transferral and implementation of medical and scientific advances from Britain and around the world to the Australian colony.

By the 1840s, the stethoscope has been accepted by the British medical profession for around a decade. The instrument was frequently employed at the New Norfolk Hospital, and appears in

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[1187] NA, *Case Book, Royal Naval Hospital, Bermuda: Joseph Phillips* (ADM 104/98, p. 00004).
[1188] TAHO, *RDH: Thomas Batley* (HSD 246/1/63- HSD 246/1/64).
[1189] TAHO, *RDH: Thomas Batley* (HSD 246/1/63- HSD 246/1/64).

the case notes of twenty-six patients, including those of John Bentley, who had suffered from "a pectoral affection since he was 17 years of age."[1190] Examination with the stethoscope elicited "the sibilant sound combined with mucous rale in every part" of Bentley's chest.[1191] Interestingly, the stethoscope features in records only twice at St Bartholomew's Hospital and twice at the Bermudian institutions. Its lack of use in Bermuda is relatively unsurprising as during the 1830s the instrument was not as widely utilised as it was during the 1840s. At the London institution, it is possible that the stethoscope does not appear more frequently in case notes due to a lack of use, although it is perhaps more likely that the instrument was employed regularly, thus normalising its use and rendering it unremarkable (and accordingly not necessitating a mention in patients' notes).

The routine practice of dissection provided another arena in which the colonial surgeons in Van Diemen's Land could advance their knowledge, and demonstrate this to their British colleagues through publications or private correspondence. Although no instances of examination after death are present in the notes from the Bermudian institution, almost all the patients who died in the New Norfolk Hospital underwent some form of post-mortem examination or dissection. In contrast, surgeons at St Bartholomew's – a progressive teaching hospital – were granted authority to dissect only a small proportion of those who died on the wards, the remainder being claimed by relatives before examination was permitted to commence. Vandemonian colonial surgeons wielded much greater control over the bodies of their patients – dead or alive – than their metropolitan counterparts. The medicalisation evident in the patient case notes was fuelled by the desire of medical men to demystify and decipher the functioning and malfunctioning of the human body. By increasing their understanding, by labelling and describing what was once hidden and obscure, practitioners considered their knowledge to be superior to that of their patients.

[1190] TAHO, *RDH: James Britton* (HSD 246/4-6/69).
[1191] TAHO, *RDH: James Britton* (HSD 246/4-6/69).

The aspiration of colonial surgeons to expand their knowledge and increase their skills was not limited to anatomy and pathology. Many medical men keenly sought native botanic remedies to replace or use in conjunction with tradition British treatments.[1192] Colonial surgeons also clearly participated in the advances being made in the field of chemistry. The experimental use of ether at the New Norfolk Hospital is perhaps the most remarkable implementation of a very new concept in mid-nineteenth-century medicine. Its usage in Van Diemen's Land demonstrates that news of American and British medical innovations travelled swiftly to the Australian colonies, and that practitioners stationed in the outpost were not isolated from their colleagues by geographical distance.

While the wealthy resorted to self-treatment in the absence of private physicians, and the destitute went untended for sheer lack of any other option, convicts remained secure in the knowledge that the British government – from necessity and obligation – had to make provision for their health.[1193] Accordingly, convicts were able to access medical care that in Britain would have been far beyond their financial means. They were also provided with superior clothing, more nutritious food, and better accommodation than many of their free counterparts who remained in their homelands.[1194]

Colonial surgeons were keen to experiment with the same innovations available to their international counterparts, and to participate in the advancement of the diverse facets of medical science – anatomy and pathology, for example, through the ample availability of material for dissection, or chemistry through experimentation with new medicines derived from local botanic

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[1192] See, for example, J. Pearn, 'The Enchanted Herb: The Work of Early Medical Botanists in Australia', *The Medical Journal of Australia*, 147 (1987) or J. Pearn, 'Courage and Curiosity: Surgeon-Explorers in Australia and New Zealand', *Australian and New Zealand Journal of Surgery*, 62 (1992).
[1193] C. Bowden, *'The Blind, the Paralytic, the Aged and the Destitute': The New Norfolk Colonial Hospital in Van Diemen's Land* (unpublished Bachelor of Arts (Honours) Thesis, Department of History, University of Tasmania, Hobart, 2007), see particularly Chapter three.
[1194] Nicholas, 'The Care and Feeding' in Nicholas (ed.), *Convict Workers*, pp. 195-196.

resources, or new uses of existing drugs (such as ether). The speed and eagerness with which these doctors participated in the wider international medical discipline demonstrates that to be a colonial surgeon in Van Diemen's Land was not to be removed from the advancement of science. It was merely one way to be part of it.

Appendix One - Glossary of Terminology[1195]

Term	Abbreviation	Definition
Ad deliquium animi[1196]	*Ad. deliq.*	'To the point of fainting' – a patient has been bled until fainting or syncope resulted.
Adjuvant[1197]	-	Usually a medicine which is used to assist the operation of the principal ingredient; can also refer to any means to assist the prevention of disease.
Aetatis[1198]	*Aet.*	Latin 'of age' (eg. the patient may be referred to as being *Aet* 37, or 37 years old).
Amplus[1199]	*Amp*.	Large.
Anchylosis[1200] Anchylosed	-	A condition which causes difficulty in movement of a joint, usually causing it to remain flexed.
Anodyne[1201]	-	Pain relieving medicine (eg. opium).
Antacids[1202]	-	Medicines which neutralize acidity in the stomach.
Anthelmintics[1203]	-	Medicines which expel worms.
Antiblennorrhagic	-	Medicine which reduces mucous discharge.
Antiphlogistic[1204]	-	A medicine or plan of treatment which decreases inflammation.
Antispasmodics[1205]	-	Drugs which relieve pain and muscular spasm.

[1195] These definitions refer to the usage and meaning held by these terms in the nineteenth century, and are taken from nineteenth century texts.
[1196] D. Robinson, *The Latin Grammar of Pharmacy (4th ed.)*, (P. Blakiston's Son & Co., Philadelphia, 1903), p. 203.
[1197] R. Dunglison, *Medical Lexicon: A Dictionary of Medical Science* (6th ed.), (Philadelphia, Lea and Blanchard, 1846), p. 24.
[1198] A. Cooley, *The Pharmaceutical Latin Grammar: Being an Easy Introduction to Medical Latin* (R. Groombridge and Sons, London, 1845), p. 125.
[1199] Cooley, *The Pharmaceutical Latin Grammar*, p. 115.
[1200] Dunglison, *Medical Lexicon*, p. 50.
[1201] Dunglison, *Medical Lexicon*, p. 51.
[1202] J. Murray, *A System of Materia Medica and Pharmacy (vol. 1, 5th ed.)*, (Adam Black, Edinburgh, 1828), p. 489.
[1203] Murray, *A System of Materia Medica and Pharmacy*, p. 540.
[1204] R. Evanson and H. Maunsell, *A Practical Treatise on the Management and Diseases of Children (vol. 18)*, (T.V. Marvin, Boston, 1848), p. 132.
[1205] Murray, *A System of Materia Medica*, p. 197.

Aortic semilunar valves[1206]	-	Also known as *sigmoid valves*, these are three folds at the base of the pulmonary artery and the aorta which prevent the blood from returning to the heart after it has flowed through the ventricles.
Arachnoid coat[1207] Arachnoid mater	-	A thin membrane covering the brain, situated between the *dura mater* and the *pia mater*.
Ascarides[1208]	-	A type of intestional worm.
Astragalus[1209]	-	The bone of the ankle.
Astringents[1210]	-	Medicines which contract relaxed parts of the body, restoring tone and density.
Atheroma[1211]	-	A tumous containing pus or pap.
Auris[1212]	*Aur*.	Ear.
Axilla	-	The underarm.
Bolus[1213]	*Bol*.	Usually refers to a large pill-shaped medicinal preparation to be swallowed.
Bougie[1214]	-	A flexible cylindrical object (made of wax, catgut, plaster, etc) which is introduced into a contracted bladder to permit dilation (bougies could also be used in the oesophegous, rectum, and other passages).
Bowels	Bw.	The bowels.
Bronchi[1215]	-	The two tubes from the trachea which carry air to the lungs.
Bruit[1216]	-	A sound heard in the chest upon percussion. There are a large number of specific bruits (including the *Bruit de Frottement*, which refers to the sounds made as the lungs rub against the chest wall).
Buffed[1217] Buffy	-	Refers to a colour or texture of a patient's blood upon venesection. Different diseases (fevers, for example) result

[1206] Dunglison, *Medical Lexicon*, p. 683.
[1207] Dunglison, *Medical Lexicon*, p. 66.
[1208] R. Dunglison, *General Therapeutics, or Principles of Medical Practice* (Carey, Lea and Blanchard, Philadelphia, 1836), p. 148.
[1209] Dunglison, *Medical Lexicon*, p. 81.
[1210] Murray, *A System of Materia Medica and Pharmacy*, p. 300.
[1211] Dunglison, *Medical Lexicon*, p. 84.
[1212] Cooley, *The Pharmaceutical Latin Grammar*, p. 116.
[1213] Dunglison, *Medical Lexicon*, p. 108.
[1214] Dunglison, *Medical Lexicon*, p. 110.
[1215] Dunglison, *Medical Lexicon*, p. 114.
[1216] Dunglison, *Medical Lexicon*, pp. 115-116.

Buffy coat		in a different appearance of the blood. A 'buffy coat' on the cupped blood refers to a pale coating which forms upon coagulation.
Burking	-	Murdering with the intention of selling the victim's body or pieces of the body to an anatomist or anatomy school.
Cachexy[1218] Cachectic	-	Cachectic patients lack energy and strength, and have poor digestion. Women of phlegmatic temperament are particularly prone to cachexy. Treatment aims to correct the imbalanced fluids in the body and invigorate the patient.
Caecum[1219]	-	Part of the large intestine, connecting the ilium with the ascending colon.
Calcareous[1220]	-	From, or containing, lime.
Calvarium	-	Skull.
Camification[1221]	-	A diseased appearance of the lung, a result of compression of the organ.
Capital operation	-	A 'capital' operation was one which placed the patient's life in danger due to the magnitude of the procedure. It usually referred to a major amputation, as operations with the body's abdominal and thoracic cavities were exceptionally risky and, thus, exceptionally rare.
Caput[1222]	*Cap*.	The head.
Cardiac orifice[1223]	-	The junction between the oesophagus and the stomach.
Carminatives[1224]	-	Medicines (usually aromatics) which relieve pain and cause the expulsion of excess gas from (or prevent its formation within) the gastrointestinal system.
Carnea columnae[1225]	-	Muscular projections in the cavities of the heart.
Carnify[1226]	-	To turn into flesh (carnification).

[1217] The term appears to be common in Britain as well as Australia during the mid-nineteenth century. See, for example, R. Semple, 'On Disease of the Nerves of the Face', *The Lancet*, 2 (1842), p. 850; M. Paine, *Medical and Physiological Commentaries (vol. 1)* (John Churchill, London, 1840), pp. 454-455; G. Wood, *Treatise on the Practice of Medicine (vol. 1, 2nd ed.)*, (Grigg, Elliot and Co., Philadelphia, 1849), p. 36.
[1218] A. Macaulay, *A Dictionary of Medicine Designed for Popular Use (2nd ed.)*, (Adam Black, Edinburgh, 1831), p. 90.
[1219] Dunglison, *Medical Lexicon*, p. 122.
[1220] Dunglison, *Medical Lexicon*, p. 124.
[1221] 'Clinical Review: Empyema', *The Medical Chirurgical Review*, 25 (1830), p. 449.
[1222] Cooley, *The Pharmaceutical Latin Grammar*, p. 116.
[1223] A. Thomson, *Elements of Materia Medica and Therapeutics* (Longman, Rees, Orme, Brown, Green and Longman, London, 1833), p. 193.
[1224] Dunglison, *Medical Lexicon*, p. 138.
[1225] Dunglison, *Medical Lexicon*, p. 138.

Cathartics[1227]	-	Medicines which produce purging from the bowels.
Cavernous sinus[1228]	-	A cavity in the *dura mater* of the brain, created by the grouping of a large number of veins.
Cell	-	Small patient rooms were called 'cells'.
Chemosis[1229]	-	Swelling of the conjunctiva of the eye.
Chicken-breasted[1230]	-	Used to refer to a patient with a narrow chest which projects forward, compressing the lungs.
Cholesterin[1231]		White scales which form as part of biliary calculi.
Chordae tendinae[1232]	-	The tendons which connect the heart's ventricles to the valves (colloquially known as 'heart strings'), and prevent the valves being swept back and everted.
Cicatrix[1233]	-	The healed surface over a wound, varying in thickness and colour.
Circle of Willis[1234]	-	A ring of arteries which supplies blood to the brain.
Cochleare[1235]	-	Spoonful.
Collyrium[1236]	-	A medicinal application to the eye (sometimes known as an *eyewater*), which can be in a liquid or dry form.
Compositus[1237] Compound	*Comp*.	A medicine comprised of several different ingredients in a single pill or solution.
Condyle[1238]	-	Rounded joint at the end of a bone.
Continuentur[1239]	*Cont*.	Continue.
Corpora arantii[1240]	-	Fibrous nodules on the edges of the valves of the aorta and pulmonary arteries.

[1226] S. Johnson and J. Walker, *A Dictionary of the English Language (2nd ed.)*, (William Pickering, London, 1828), p. 98.
[1227] Murray, *A System of Materia Medica and Pharmacy*, p. 358.
[1228] Dunglison, *Medical Lexicon*, pp. 147-148.
[1229] G. Frick, *A Treatise on the Diseases of the Eye* (John Anderson, London, 1826), p. 15.
[1230] W. Sweetser, *A Treatise on Consumption, Embracing an Inquiry into the Influence Exerted upon it by Journeys Voyages and Changes of Climate* (T.H. Carter, Boston, 1836), p. 38.
[1231] Dunglison, *Medical Lexicon*, p. 162.
[1232] Dunglison, *Medical Lexicon*, p. 163.
[1233] Dunglison, *Medical Lexicon*, p. 166.
[1234] J. Quain, *The Elements of Anatomy (4th ed.)*, (Taylor and Walton, London, 1837), p. 521.
[1235] Cooley, *The Pharmaceutical Latin Grammar*, p. 116.
[1236] Dunglison, *Medical Lexicon*, p. 183.
[1237] Cooley, *The Pharmaceutical Latin Grammar*, p. 117.
[1238] B. Miller and C. Keane, *Encyclopaedia and Dictionary of Medicine and Nursing* (Saunders, Philadelphia, 1972), p. 224.
[1239] Cooley, *The Pharmaceutical Latin Grammar*, p. 117.
[1240] Dunglison, *Medical Lexicon*, p. 518.

Noduli arantii

Corpus striatum[1241]	-	Masses of grey and white nerve fibres, located in front of the thalamus in each hemisphere of the brain.
Corpuscle[1242]	-	Small bodies found in the blood, connected with the nerves in the palms of the hands, soles of the feet, and occasionally in other areas. Purpose unknown.
Coryza[1243]	-	The symptoms of nasal congestion.
Costal cartilages[1244]	-	Unossified parts of the ribs.
Crepitus[1245]	-	Grating sound or sensation of a broken or fractured bone.
Cruorine[1246] Haematine	-	A substance or state of the blood; the coagulum or coloured part of the blood.
Deglutition[1247]	-	The act of swallowing.
Demulcents[1248]	-	Medicines which protect the body from the action of acidic or stimulatory matter.
Desquamation[1249]	-	Exfoliation of the skin as a consequence of disease.
Dextra[1250]	*Dext*.	Latin, referring to the right side.
Diaphoretics[1251]	-	Medicines which promote gentle perspiration.
Diluents[1252]	-	Medicines which dilute the blood by increasing its fluidity.
Diuretics[1253]	-	Medicines which increase discharge of urine.
Diverticulum[1254]	-	The development of a small pocket bulging from an organ, usually the intestines.

[1241] E. Wilson, *A System of Human Anatomy, General and Special (American ed.)*, (Lea and Blanchard, Philadelphia, 1843), p. 369.
[1242] Dunglison, *Medical Lexicon*, p. 203.
[1243] Dunglison, *Medical Lexicon*, p. 205.
[1244] A. Robinson, *Cunningham's Text-Book of Anatomy (5th ed.)*, (William Wood and Company, New York, 1818), p. 315.
[1245] J. Tooth, *Human and Heroic: The Life and Love of a 19th Century Country Doctor* (Artemis Publications, Hobart, 2007), p. 180.
[1246] See, for example, P. Mazumdar, 'Johannes Müller on the Blood, the Lymph, and the Chyle', *Isis*, 66 (1975), p. 247; Dunglison, *Medical Lexion*, p. 364; D. Oliver, *First Lines of Physiology: Designed for the Use of Students of Medicine* (Marsh, Capen & Lyon, Boston, 1835), p. 65.
[1247] Dunglison, *Medical Lexicon*, p. 234.
[1248] Murray, *A System of Materia Medica and Pharmacy*, p. 524.
[1249] Dunglison, *Medical Lexicon*, p. 240.
[1250] Cooley, *The Pharmaceutical Latin Grammar*, p. 118.
[1251] Murray, *A System of Materia Medica and Pharmacy*, p. 430; Dunglison, *Medical Lexicon*, p. 243.
[1252] Murray, *A System of Materia Medica and Pharmacy*, p. 522.
[1253] Murray, *A System of Materia Medica and Pharmacy*, p. 403.
[1254] Dunglison, *Medical Lexicon*, p. 256.

Dolens[1255]	-	Pain, or painful.
Donec alvus bis dijiciatur[1256]	*Don. alv. bis dej.*	'Until the bowels have been twice emptied.'
Drachm[1257] *Drachma*	*Dr.*	A unit of measurement used by apothecaries and doctors, equivalent to 60 grains or 4 grams.
Dura mater[1258]	-	A thick, fibrous, white-coloured membrane which lines the skull to protect and support the brain.
Dyspnea[1259]	-	Difficulty breathing and shortness of breath; commonly associated with lung or heart diseases.
Dysuria[1260]	-	Difficulty of voiding the urine, with pain and heat.
Ecchymosis[1261]	-	The effusion of blood into tissue, sometimes caused by an injury. Also known as *sugillation*.
Electuary[1262]	-	Soft medicines, made from syrups, powders, extracts of pulps, thicker in consistency than honey.
Emancipist	-	Pardoned convict.
Emetic[1263]	-	Medicines which produce vomiting.
Emollients[1264]	-	Medicines which relax muscular fibres of the body.
Entropion[1265]	-	A condition in which they eyelash grow inwards, causing irritation to the eye, treated by reducing the swelling and inflammation, removing the lashes and cauterizing their roots, or removing small portions of skin from the lids.
Enuresis[1266]	-	The voiding of urine in bed, caused by a range of factors including injury, paralysis, irritability of the bladder, etc. Often self-resolves over time.
Epiphora[1267]	-	Watering eyes.

[1255] Cooley, *The Pharmaceutical Latin Grammar*, p. 118.
[1256] Cooley, *The Pharmaceutical Latin Grammar*, p. 118.
[1257] B. Bryant, K. Knights and E. Salerno, *Pharmacology for Health Professionals (2nd ed.)*, (Mosby Elsevier, Sydney, 2006), p. 19.
[1258] Dunglison, *Medical Lexicon*, p. 262.
[1259] Dunglison, *Medical Lexicon*, p. 264.
[1260] Dunglison, *Medical Lexicon*, p. 265.
[1261] Dunglison, *Medical Lexicon*, p. 281.
[1262] Dunglison, *Medical Lexicon*, p. 271.
[1263] Murray, *A System of Materia Medica and Pharmacy*, p. 332.
[1264] Murray, *A System of Materia Medica and Pharmacy*, p. 538.
[1265] Dunglison, *Medical Lexicon*, p. 285.
[1266] Dunglison, *Medical Lexicon*, p. 286.
[1267] Frick, *A Treatise on the Disease of the Eye*, p. 265.

Epispastics	-	See *Rubefacients*.
Epistaxis[1268]	-	Nosebleed; a common occurrence caused by strenuous nose-blowing, coughing or exercise, particularly around the time of puberty.
Errhines[1269]	-	Medicines which increase secretions from the nose.
Escharotics[1270]	-	Medicines which destroy the tissues (used to create ulcers or change their form) to varying depths.
Eversion	-	To turn inside out. Can apply to the eyelid, or a movement of the foot which turns the sole outward.
Excrescence[1271]	-	A fleshy growth or tumour which occurs on internal organs or the skin (such as a wart or haemorrhoid).
Expectorants[1272]	-	Medicines which assist in the rejection of matter from the lungs and trachea.
Extensor carpi radialis[1273]	-	A muscle of the forearm, which controls movement at the wrist.
Extensor carpi ulnaris[1274]	-	A muscle of the forearm, which acts to extend and adduct the wrist.
Extensor communis digitorum[1275]	-	A muscle of the forearm, extending from the muscles of the fingers and hand.
External auditorius meatus[1276]	-	The external auditory canal, extending from the middle ear to the outer ear.
Extract[1277] *Extractum*	*Ext*.	A medicine is powdered, then evaporated in alcohol to produce an extract of the drug.
Extravasation[1278]	-	The leakage of fluids from an organ or vessel, and the effusion of the fluid into the surrounding tissue.

[1268] Dunglison, *Medical Lexicon,* p. 291.
[1269] Murray, *A System of Materia Medica and Pharmacy*, p. 468.
[1270] Murray, *A System of Materia Medica and Pharmacy*, p. 482.
[1271] Dunglison, *Medical Lexicon*, p. 300.
[1272] Murray, *A System of Materia Medica and Pharmacy*, p. 447.
[1273] R. Hooper, *The Physician's Vade-mecum (9th ed.)*, (Renshaw and Rush, London, 1820), pp. 133-134.
[1274] Hooper, *The Physician's Vade-mecum*, p. 134.
[1275] J. Lizars, *A System of Anatomical Plates of the Human Body*, (Lizars & James, Edinburgh, 1822), p. 83.
[1276] Dunglison, *Medical Lexicon* (1846), p. 85.
[1277] S. Potter, *A Compend of Materia Medica, Therapeutics, and Prescription Writing: Official Preparations* (P. Blakiston, Philadelphia, 1902), at <http://www.henriettesherbal.com/eclectic/potter-comp/prep-offi.html>, accessed 2 November 2006.
[1278] Dunglison, *Medical Lexicon*, p. 307.

Falx[1279]	-	Part of the *dura mater*.
Falx cerebri[1280]	-	A thick, curved fold of the *dura mater* which descends between the hemispheres of the brain.
Farinaceous diet[1281]	-	A diet based on grain and its derivatives, highly valued both medicinally and nutritionally.
Fauces[1282]	-	Throat.
Feculent[1283]	-	Generally refers foul bowel movements, but can more widely refer to an impure substance with sediment.
Fibrin[1284]	-	An elastic, white substance formed in the muscles and found in bodily membranes, cavities and blood.
Fissue Sylvii[1285] Lateral sulcus	-	Part of the brain which divides the parietal and frontal lobes from the temporal lobe.
Fleam[1286]	-	Blood-letting instrument with a small, sharp, right-angled blade.
Foramen of Winslow[1287]	-	An aperture in the omentum.
Foramina of Monro[1288]	-	Channels connecting the lateral ventricles of the brain.
Formication[1289]	-	A sensation of pain, something like the feeling of ants crawling on the skin.
Fornix[1290]	-	An arch-shaped part of the brain.
Friable[1291]	-	Easily crumbled or damaged. Often used in postmortem reports to refer to diseased organs.
Galvanism[1292]	-	The electrical stimulation of nerves. Usually, this is done by placing two plates comprised of different metals on parts of the body, connected with a wire.

[1279] Dunglison, *Medical Lexicon*, p. 312.
[1280] Dunglison, *Medical Lexicon*, p. 312.
[1281] Dunglison, *Medical Lexicon*, p. 313.
[1282] Dunglison, *Medical Lexicon*, p. 314.
[1283] Dunglison, *Medical Lexicon*, pp. 315-316.
[1284] Dunglison, *Medical Lexicon*, p. 326.
[1285] Quain, *The Elements of Anatomy*, p. 727.
[1286] L. Parapia, 'History of Bloodletting by Phlebotomy', *British Journal of Haematology*, 143 (2008), pp. 492-493.
[1287] R. Hooper, *Lexicon Medicum (4th ed.)*, (J. and J. Harper, New York, 1829), p. 367.
[1288] Dunglison, *Medical Lexicon*, p. 493.
[1289] Dunglison, *Medical Lexicon*, p. 334.
[1290] Dunglison, *Medical Lexicon*, p. 334.
[1291] *Merriam-Webster's Dictionary of Synonyms* (Merriam Webster, Massachusetts, 1986), p. 362.
[1292] Dunglison, *Medical Lexicon*, p. 342.

Grain[1293]	Gr.	A unit of measurement used by apothecaries and doctors, equivalent to 65 milligrams.
Gutta[1294]	*Gutt.*	Medicine given in drops (liquid form).
Habeat[1295]	*Habt.*	'Let him have' a particular medicine or treatment.
Haematosis[1296]	-	Formation of the blood (or, more particularly, the process of changing venous blood into arterial blood).
Hand-drop	-	Muscular paralysis of wrist and fingers which causes the hand to 'drop'.
Hepatic[1297]	-	Referring to the liver.
Hepatization[1298]	-	Transformation of tissue into a liver-like matter as a result of inflammation (often used referring to the lungs when they become impervious to air).
Hirudo[1299]	Hirud.	Leech (to apply leeches to a patient's skin to remove blood).
Hobnail liver[1300] Drunkard's liver	-	A lumpy appearance of the liver, with nodules distorting the natural texture. Usually connected to overconsumption of alcohol.
Hora[1301]	-	An hour.
Hora ad affectum	-	Patient is to be given a medication every hour while affected.
Hora somni[1302]	H.S.	Patient is to be given a medication 'on retiring to rest'.
Hove down	-	A ship laid on its side to be repaired on land in ports which have no docks or insufficient facilities.
Hypertrophy[1303]	-	Excessive nutrition of an organ or part (such as the heart or liver) which then becomes enlarged.

[1293] Bryant, et. al., *Pharmacology for Health Professionals*, p. 19.
[1294] M. Duke, *Development of Medical Techniques: From Leeches to Heart Surgery* (International Universities Press, Connecticut, 1991), p. 80; Cooley, *The Pharmaceutical Latin Grammar*, p. 120.
[1295] D. Culbreth, *A Manual of Materia Medica and Pharmacology* (Lea Brothers and Co., Philadelphia, 1917), at <http://chestofbooks.com/health/ materia-medica-drugs/Manual-Pharmacology/index.html>, accessed 11 June 2009.
[1296] Dunglison, *Medical Lexicon*, p. 365.
[1297] Dunglison, *Medical Lexicon*, p. 375.
[1298] 'Clinical Review: Empyema', p. 449; Dunglison, *Medical Lexicon*, p. 376.
[1299] Robinson, *The Latin Grammar of Pharmacy*, p. 262.
[1300] 'Reports of Cases Appearing at Public Institutions: The London Hospital', *Medical Gazette*, 7 (1831), p. 828.
[1301] Dunglison, *Medical Lexicon*, p. 121.
[1302] Cooley, *The Pharmaceutical Latin Grammar*, p. 121.
[1303] Dunglison, *Medical Lexicon*, p. 395.

Ichorous[1304]	-	A thin discharge, often from a wound.
Iliacus muscles[1305]	-	A triangular shaped muscle in the hip, which terminates in a thick tendon which is also the endpoint of the psoas muscle.
Ilium[1306]	-	The longest part of the small intestine, extending from the jejunum to the caecum.
In articulo mortis	-	At the point of death.
Induration[1307] Indurated	-	Abnormal hardness arising from inflammation.
Infricandum[1308]	-	Medicine 'to be rubbed in' to the affected part of the body.
Infundibulum[1309]	-	A depression in the middle ventricle of the brain, located above the pituitary gland.
Injiciatur[1310]	*Inj. enem.*	*Injiciatur enema* prescribes a patient to be given an enema.
Inspissated bile	-	Bile which has thickened sufficiently to cause blockages in organs.
Integuments[1311]	-	Covering membranes of the body (eg. skin).
Interlamellar	-	Probably the space between thin, flat bones.
Intussusception[1312]	-	A dangerous condition, in which one part of the intestinal canal moves inside another part.
Jactitation[1313]	-	Extreme anxiety and restlessness in the seriously ill.
Kindly	-	Wounds are often referred to as "healing kindly," or naturally and effectively.
Lachryma[1314]	-	Tears (watery discharge from the eyes).
Levator palprebrae[1315]	-	Muscle responsible for opening the eyelid.

[1304] Johnson and Walker, *A Dictionary of the English Language*, p. 361.
[1305] Dunglison, *Medical Lexicon*, p. 401.
[1306] Dunglison, *Medical Lexicon*, p. 401.
[1307] Dunglison, *Medical Lexicon*, p. 405.
[1308] J. Ince, *The Latin Grammar of Pharmacy (10th ed.)*, (Bailliere, Tindall and Cox, London, 1920), p. 210.
[1309] Dunglison, *Medical Lexicon*, p. 407.
[1310] Cooley, *The Pharmaceutical Latin Grammar*, p. 121.
[1311] Tooth, *Humane and Heroic*, p. 182.
[1312] Dunglison, *Medical Lexicon*, p. 416.
[1313] Dunglison, *Medical Lexicon*, p. 421.
[1314] Dunglison, *Medical Lexicon*, p. 428.
[1315] J. Bell and C. Bell, *The Anatomy and Physiology of the Human Body (7th ed.)*, (Longman, Rees, Orme, Brown and Green, London, 1829), p. 265.

Lithic acid calculus[1316]	-	Uric acid calculi.
Lithontriptics[1317]	-	Medicines which dissolve urinary calculi.
Lotion[1318]	*Lotio*	A liquid medicine, externally applied to the body by using it to dampen a cloth and then binding it over the affected area.
Lymph[1319]	-	Clear, watery blood plasma (used in early vaccination procedures to protect against smallpox).
Malleolus[1320]	-	The protruding bones at the ankle; the inner being the tibia, the outer the fibula.
Malleus[1321]	-	The largest and most outermost bone of the ear.
Maranta[1322]	-	Arrowroot.
Meatus auditorius internus[1323]	-	The internal auditory canal in the temporal bone, which carries nerves from the brain to the ear.
Mediastinum[1324]	-	A membrane which extends from the spine to the sternum, dividing the chest into two sides (left and right).
Medulla oblongatus[1325]	-	The continuation of the substance of the brain, which narrows as it descends to the spinal cavity.
Membrana tympani[1326]	-	A thin septum which covers the inner end of the *Meatus auditorius internus*.
Meningeal artery[1327]	-	The largest branch of the internal maxillary artery, which supplied blood to the *dura mater*.
Mesenteric glands[1328]	-	Lymphatic glands in the mesentery, the purpose of which is unknown.
Metastasis[1329]	-	The development of secondary disease in another organ (or another part of the original organ) separate to the

[1316] Dunglison, *Medical Lexicon*, p. 450.
[1317] Murray, *A System of Materia Medica and Pharmacy*, p. 495.
[1318] Dunglison, *Medical Lexicon*, p. 455.
[1319] Dunglison, *Medical Lexicon*, p. 458.
[1320] Dunglison, *Medical Lexicon*, p. 463.
[1321] Dunglison, *Medical Lexicon*, p. 463.
[1322] Robinson, *The Latin Grammar of Pharmacy*, p. 328.
[1323] Dunglison, *Medical Lexicon*, p. 85.
[1324] Dunglison, *Medical Lexicon*, p. 472.
[1325] Bell and Bell, *The Anatomy and Physiology of the Human Body*, p. 441.
[1326] Dunglison, *Medical Lexicon*, p. 765.
[1327] Dunglison, *Medical Lexicon*, p. 478.
[1328] Dunglison, *Medical Lexicon*, p. 482.
[1329] Dunglison, *Medical Lexicon*, p. 483.

		original seat of disease.
Mitral valves[1330]	-	The two triangular-shaped valves between the left auricle and the left ventricle of the heart which permit blood to flow from the auricle to the ventricle but not return.
More dicto[1331]	*Mor. dict.*	Latin, meaning a treatment should be given 'in the manner directed.'
Muscular coat	-	Smooth muscular membrane.
Nares[1332] *Naris*	-	Nostril.
Nutmeg[1333]	-	A term used to describe the appearance of internal organs (most commonly the liver) upon *post-mortem*. The organ is much paler than usual (often a yellowish brown colour), and speckled like a nutmeg kernel.
Occiput[1334]	-	The back of the head (formed from the occipital bone).
Omittatur pilulea ut supra	-	'Omit pill immediately' – doctor directs that the patient is no longer to be given a particular medicine.
Omni mane[1335]	*Omn. man.*	Every morning.
Opisthotonous[1336]	-	The muscles of the body spasm violently and cause the patient to bend backwards in an arched position. Seen in conditions such as tetanus.
Orbicular palpebrarum[1337]	Orb. palpehrarum	Sphincter muscle surrounding the eye, controlling the movement of the eyelid.
Orbicularis oculi[1338]	-	Muscle responsible for closing the eyelid.
Orthopnoea[1339]	-	A patient suffering orthopnoea cannot breath when lying down, and must be upright to allow respiration to continue.
Os sacrum	Sacrum	The large, wedge-shaped bone at the base of the spine and the back of the pelvis.

[1330] Dunglison, *Medical Lexicon*, p. 489.
[1331] Cooley, *The Pharmaceutical Latin Grammar*, p. 123.
[1332] Dunglison, *Medical Lexicon*, p. 506.
[1333] Dunglison, *Medical Lexicon*, p. 453.
[1334] Dunglison, *Medical Lexicon*, p. 524.
[1335] Cooley, *The Pharmaceutical Latin Grammar*, p. 123.
[1336] Hooper, *The Physician's Vade-mecum*, p. 291.
[1337] H. Grey, *Anatomy, Descriptive and Surgical* (Longman, Green, Longman, Roberts and Green, London, 1864), p. 211.
[1338] Bell and Bell, *The Anatomy and Physiology of the Human Body*, p. 265.
[1339] Dunglison, *Medical Lexicon*, p. 538.

Ossicula auditus[1340]	-	The four small bones of the middle ear, which are arranged in a chain to pass sounds through the ear.
Ossification[1341]	-	The formation of bone.
Ounce[1342]	Oz. ℥	Apothecary's ounce, equivalent to 31 grams. A unit of measurement used by apothecaries and doctors.
Ovariotomy[1343]	-	The removal of ovarian cysts, which, if untreated often burst with fatal results.
Pacchionian glands[1344] Pacchionian bodies	-	Small, fatty glands situated in the dura mater.
Palpebral[1345]	-	Relating to the eyelid.
Papilla	-	Usually refers to a nipple-like structure; however, the lacrimal papilla exists in the conjunctiva of the eye (near the medial angle), with the opening of the lacrimal (tear) duct in the centre.
Pauperised	-	Those made into paupers.
Pectoriloquy[1346]	-	The appearance of a patient's voice coming from their chest. Found particularly in patients with consumption, as their voices resound in the cavities produced by tubercles and suppuration.
Pergo *Pergat*	-	'To continue' or proceed with a patient's treatment.
Pericardium[1347]	-	Thin membrane surrounding the heart.
Pericranium[1348]	-	The periosteum covering the skull (see *periosteum*).
Peritoneal coat	-	Smooth peritoneal membrane.
Periosteum[1349]	-	A fibrous, white membrane which covers the exterior surface of bones (see *pericardium*), except the teeth and the cartilage of joints.

[1340] Dunglison, *Medical Lexicon*, p. 540.
[1341] Dunglison, *Medical Lexicon*, p. 540.
[1342] Bryant, et. al., *Pharmacology for Health Professionals*, p. 19.
[1343] F. Skey, *Operative Surgery* (John Churchill, London, 1850), pp. 613-618.
[1344] Hooper, *The Anatomist'sVade-mecum*, p. 206.
[1345] Dunglison, *Medical Lexicon*, p. 548.
[1346] Dunglison, *Medical Lexicon*, p. 561.
[1347] Tooth, *Humane and Heroic*, p. 183.
[1348] Dunglison, *Medical Lexicon*, p. 565.
[1349] Dunglison, *Medical Lexicon*, p. 566.

Petechiae[1350]	-	Small spots which occur over the skin in cases of severe fever.
Peyer's glands[1351] Peyer's patches	-	Small glands which lie in clusters in the intestines, particularly in the ileum. Their structure and purpose is not understood.
Pharynx[1352]	-	Part of the throat extending from the mouth and nose to the larynx.
Pia mater[1353]	-	The delicate membrane which covers the brain and spinal medulla.
Pilulae[1354]	*Pil*.	Medicine/s, usually combined with excipients (substances which allow the pills to maintain their shape), to be taken internally.
Pleura costalis[1355]	-	The membrane lining the inner side of the ribs (from *costa*, meaning rib).
Pleura pulmonalis[1356]	-	Visceral pleura, the serous membrane of the lungs.
Plexus choroideus	-	Two folds of the *pia mater* in the brain.
Pone[1357]	-	Behind.
Pound[1358]	Lb.	A unit of measurement used by apothecaries and doctors, equivalent to 454 grams.
Protinus[1359]	-	Immediately.
Psoas muscles[1360]	-	A muscle extending from the lower back to the thigh, ending in a tendon which is also the endpoint of the iliacus muscle.
Ptosis[1361]	-	A wound in the cornea, causing a prolapse of the iris, visible as a dark-coloured tubercule on the eye.

[1350] When petechiae occur extensively, it is known as *Purpura* (Dunglison, *Medical Lexicon*, p. 569; A. Taylor, *Medical Jurisprudence (6th ed.)*, (John Churchill, London, 1858), pp. 246-247).
[1351] Dunglison, *Medical Lexicon*, p. 570.
[1352] Dunglison, *Medical Lexicon*, pp. 572-573.
[1353] Robinson, *Cunningham's Text-Book of Anatomy*, p. 673.
[1354] F. Petersen, *Materia Medica and Clinical Therapeutics: Part I* (self-published, Washington, 1905), p. 5; Potter, *A Compend of Materia Medica: Official Preparations*, at <http://www.henriettesherbal.com/eclectic/potter-comp/prep-offi.html> accessed 31 October 2006.
[1355] Dunglison, *Medical Lexicon*, p. 590; p. 205.
[1356] Dunglison, *Medical Lexicon*, p. 590.
[1357] Cooley, *The Pharmaceutical Latin Grammar*, p. 88.
[1358] Bryant, et. al., *Pharmacology for Health Professionals*, p. 19.
[1359] Robinson, *The Latin Grammar of Pharmacy*, p. 299.
[1360] Dunglison, *Medical Lexicon*, p. 624.
[1361] Dunglison, *Medical Lexicon*, p. 626.

Ptyalysm[1362] Ptyalism	-	Excessive salivation, often a side-effect of mercury treatment.
Public works' convict	-	Convict serving sentence while performing labour on public buildings, roads, etc.
Pulse[1363]	P.	Pulse (referring to not only the number of beats per minute, but also the rhythm and intensity of the beats).
Pultaceous[1364]	-	Pulpy or slough-like.
Pulveris[1365]	*Pulv*.	Various types of medicines reduced to powders, which can then be formed into pills or made into solutions.
Puriform[1366]	-	That which has the appearance or form of pus.
Purpura[1367]	-	A group of conditions in which the patient develops purple spots on the skin, lethargy and pains in the limbs.
Pylorus[1368]	-	The lower orifice of the stomach, which uses a muscular ring to close the organ during digestion.
Quag hora[1369]	-	Every hour.
Quater[1370]	Quat	Four.
Quotidie[1371]	*Quot.*	Daily.
Rale[1372]	-	Bubbling sound which can be heard in the bronchi of patients with particular lung diseases.
Recrudescence[1373]	-	A resurgence of disease after a period of temporary abatement of symptoms.
Refrigerants[1374]	-	Medicines which decrease heat and circulation in the body.
Repetatur[1375]	*Rept*.	'Let it be repeated', or continued.

[1362] Tooth, *Humane and Heroic*, p. 181.
[1363] Dunglison, *Medical Lexicon*, p. 629.
[1364] Dunglison, *Medical Lexicon*, p. 635.
[1365] Petersen, *Materia Medica: Part I*, p. 6; Cooley, *The Pharmaceutical Latin Grammar*, p. 125.
[1366] Dunglison, *Medical Lexicon*, p. 634.
[1367] Dunglison, *Medical Lexicon*, p. 634.
[1368] Dunglison, *Medical Lexicon*, p. 635.
[1369] Tooth, *Humane and Heroic*, p. 183.
[1370] Cooley, *The Pharmaceutical Latin Grammar*, p. 125.
[1371] Cooley, *The Pharmaceutical Latin Grammar*, p. 125.
[1372] Tooth, *Humane and Heroic*, p. 183.
[1373] Dunglison, *Medical Lexicon*, p. 644.
[1374] Murray, *A System of Materia Medica and Pharmacy*, p. 508.
[1375] Potter, *Compend of Materia Medica: Latinizing*, at <http://www.henriettesherbal.com/eclectic/potter-comp/latin.html>, accessed 2 November 2006.

Reticulated[1376]	-	A net-like structure.
Retractor[1377]	-	A rectangular strip of linen (broader than the width of the wound) between eighteen to twenty-four inches long, with a slit halfway along one side. During an amputation, the exposed bone is positions in the slit of the retractor and the ends are drawn upwards on each side of the stump. This protects the flesh while the saw is used on the bone.
Rubifacient[1378]	-	A medicine which causes reddening and heat when applied to the skin. Known as an *epispastic* when it causes a puriform discharge.
Rx. [1379]	*Rx.*	Take.
Sanies[1380] Sanious	-	A thin discharge consisting of serum, pus and blood, commonly exuded by ulcers.
Schneiderian membrane[1381]	-	Also known as the pituitary membrane, this is the covering of the nasal cavities.
Scleratic coat[1382]	-	A white, fibrous membrane over the eyeball.
Scrobiculus cordis[1383] Epigastric fossa	-	The pit of the stomach.
Scruple[1384] *Scrupulum*	Scrup.	A unit of measurement used by apothecaries and doctors, equivalent to 20 grains or 1.3 grams.
Scybala[1385]	-	Hard, round lumps of faecal matter.
Secundus[1386]	-	Two.
Septimana[1387]	-	Week.
Septum lucidum[1388]	-	The soft substance separating the two lateral ventricles of

[1376] Dunglison, *Medical Lexicon*, p. 650.
[1377] W. Cocks, *A Concise Treatise of Operative Surgery, Describing the Methods Adopted by English, Continental and American Surgeons* (Longman, Rees, Orme, Brown, Green and Longman, London, 1837), p. 319.
[1378] Murray, *A System of Materia Medica and Pharmacy*, p. 473; Miller and Keane, *Encyclopaedia and Dictionary*, p. 849.
[1379] Tooth, *Humane and Heroic*, p. 183.
[1380] Dunglison, *Medical Lexicon*, p. 666; Miller and Keane, *Encyclopaedia and Dictionary*, p. 854.
[1381] C. Wistar and W. Horner, *A System of Anatomy for the Use of Students of Medicine (vol. II; 6th ed.)*, (Carey, Lea & Blanchard, Philadelphia, 1835), p. 9.
[1382] Dunglison, *Medical Lexicon*, pp. 673-674.
[1383] Dunglison, *Medical Lexicon*, p. 674.
[1384] Bryant, et. al., *Pharmacology for Health Professionals*, p. 19.
[1385] Dunglison, *Medical Lexicon*, p. 675.
[1386] Cooley, *The Pharmaceutical Latin Grammar*, p. 26.
[1387] P. Lloyd, *From Latin to Spanish: Historical Phonology and Morphology of the Spanish Language (vol. 1)*, (The American Philosophical Society, Pennsylvania, 1987), p. 113.
[1388] Dunglison, *Medical Lexicon*, p. 679.

		the brain.
Sextus[1389]	-	Six.
Sialagogues[1390]	-	Medicines which encourage salivation.
Sibilant[1391] Sibilant rattle	-	A whistling or hissing sound heard in the chest using a stethoscope, caused by the sound of air passing through thin mucous in the small passages of the bronchi.
Sinister[1392]	Sinist.	Latin, referring to the left side.
Sinus[1393]	-	Any cavity in which the interior is larger than the opening (eg. in anatomy, commonly refers to cavities in bones; in surgery, often refers to a long hollow space leading from an abscess).
Sordes[1394]	-	Deposits on the teeth from the secretions of the mouth, particularly seen in cases of fever.
Spicula[1395]	-	A small spike.
Squamous suture[1396]	-	The suture which joins the temporal and parietal bones (of the skull).
Staphyloma[1397]	-	A tumour on the eyeball.
Statim sumendum[1398]	*Stat. sum.*	'At once to be taken'. For medicines to be administered immediately upon prescription.
Strabismus[1399]	-	Eye condition in which one eye involuntarily turns when the other moves. The patient cannot look at an object with both eyes, unless the sound eye is covered.
Sudorific[1400]	-	A medicine which promotes copious perspiration.
Sugillation	-	See *Ecchymosis*.

[1389] Cooley, *The Pharmaceutical Latin Grammar*, p. 26.
[1390] Murray, *A System of Materia Medica and Pharmacy*, p. 462.
[1391] Dunglison, *Medical Lexicon*, p. 643.
[1392] Cooley, *The Pharmaceutical Latin Grammar*, p. 127.
[1393] Dunglison, *Medical Lexicon*, p. 684.
[1394] Dunglison, *Medical Lexicon*, p. 692.
[1395] G. Lloyd, *Botanical Terminology, or Dictionary Explaining the Terms Most Generally Employed in Systematic Botany* (Bell & Bradfute, Edinburgh, 1826), p. 188.
[1396] Dunglison, *Medical Lexicon*, p. 704.
[1397] Dunglison, *Medical Lexicon*, p. 705.
[1398] Potter, *Compend of Materia Medica: Latinizing*, at <http://www.henriettesherbal.com/eclectic/potter-comp/latin.html>, accessed 2 November 2006.
[1399] W. Mackenzie, *Practical Treatise on the Diseases of the Eye* (Longman, Rees, Orme, Brown, Green and Longman, London, 1830), p. 249.
[1400] Murray, *A System of Materia Medica and Pharmacy*, p. 430; Dunglison, *Medical Lexicon*, p. 718.

Sugillation[1401]	-	Effusion of blood in the body's tissue. Similar to ecchymosis; however, sugillation occurs from internal causes and is generally used when describing the dead.
Syncope[1402] Fainting	-	Complete loss of sensation and motion (consciousness), and decrease in pulse and respiration. Commonly induced by venesection due to the sudden drop in blood pressure. Usually resolves rapidly without treatment or long-term ill effect.
Tale-bearer	-	Liar.
Tempore dextro[1403]	*Temp. dext.*	To the right temple.
Tenesmus[1404]	-	Frequent forceful urge to evacuate the bowels without passing stools.
Tentorium[1405]	-	Part of the *dura mater* which separates the cerebrum from the cerebellum, and supports the occipital lobes of the brain.
Tertius[1406]	-	Three.
Testa	-	In botany, refers to the seed coat.
Tinctura[1407] *Tincture*	*Tinc.*	An alcoholic or hydro-alcoholic solution prepared from vegetable or chemical substances.
Tongue	T.	Tongue.
Tormina[1408] Colic or Mulligrubs	-	Acute griping pains of the abdomen, often seen in cases of dysentery.
Torpor[1409] Torpid	-	Numb, sluggish or lethargic; can refer to a part of the body or a patient's demeanor.
Trachea[1410]	-	Tube connecting with the *bronchi*.
Trepanning[1411]	-	An instrument called a trepan is used to remove, or to drill

[1401] Taylor, *Medical Jurisprudence*, p. 247.
[1402] If syncope is a result of extreme blood-letting, brandy or ether may be required to restore consciousness (G. Gregory, *Elements of the Theory and Practice of Physic (4th ed.)*, (Baldwin and Craddock, London, 1835), pp. 457-459; Dunglison, *Medical Lexicon*, p. 726).
[1403] Cooley, *The Pharmaceutical Latin Grammar*, p. 128.
[1404] Dunglison, *Medical Lexicon*, p. 735.
[1405] Dunglison, *Medical Lexicon*, p. 736.
[1406] Cooley, *The Pharmaceutical Latin Grammar*, p. 26.
[1407] Petersen, *Materia Medica: Part I*, p. 4, p. 6
[1408] Dunglison, *Medical Lexicon*, p. 753.
[1409] Dunglison, *Medical Lexicon*, p. 753.
[1410] Dunglison, *Medical Lexicon*, p. 754.

Trephining			holes in, pieces of bone. It is most common used in cases of depressed compound fracture of the skull, to relieve pressure in cases of swelling of the brain.
Trochanter[1412]		-	Part of the upper end of the femur bone to which attaches the thigh's rotator muscles.
Tubercle[1413]		-	A tumour which grows in an organ (usually the lungs or abdominal organs). A small number can be borne with no ill effects, but if numerous, they cause serious disease.
Tumefactio[1414]			Tumefaction, or swelling.
Tumid			Swollen.
Tympanitic[1415] Tympanites		-	A condition where the abdomen (intestines or peritoneum) is swollen with air. From the Latin for 'drum', as the abdomen has a hollow sound when tapped.
Unguent[1416]		*Ung*.	Ointment
Unus[1417]		-	One.
Vertex[1418]		-	Top of the head.
Vesicant[1419]		-	An agent which causes blisters when applied to the skin.
Vesper		-	Evening (usually recorded before a patient case note written late in the day).
Viscera	Viscus	-	Internal organs.

[1411] J. Dorsey, *Elements of Surgery for the Use of Students (vol. I, 2nd ed.)*, (W. Brown and Richard Parker, Philadelphia, 1848), pp. 304-308; Dunglison, *Medical Lexicon*, p. 756.
[1412] Dunglison, *Medical Lexicon*, p. 759.
[1413] Dunglison, *Medical Lexicon*, p. 762.
[1414] Dunglison, *Medical Lexicon*, p. 762.
[1415] Dunglison, *Medical Lexicon*, p. 764.
[1416] W. Smith and J. Lockwood, *A Smaller Latin-English Dictionary* (John Murray, London, 1933), p. 781; Petersen, *Materia Medica: Part I*, p. 5.
[1417] Cooley, *The Pharmaceutical Latin Grammar*, p. 26.
[1418] Dunglison, *Medical Lexicon*, p. 787.
[1419] Miller and Keane, *Encyclopaedia and Dictionary*, p. 1046.

Appendix Two - Glossary of Diseases and Conditions[1420]

Complaint (Latin/Scientific)	Complaint (Common)	Description
Abscess[1421]	Abscess	A cavity in which pus collects as the result of "morbid process."
Amaurosis[1422]	Amaurosis	Partial or complete loss of sight without any apparent organic cause, which is often considered incurable.
Ambustio	Burn	Injury produced by intense heat.
Anasarca[1423]	Dropsy Oedema	Characterised initially by swelling of the ankles, progressing up the legs until the abdomen and thorax, and even the face, are oedematous.
Angina[1424]	Sore throat	Inflammation and pain in the supra-diaphragmatic part of the alimentary canal and associated airways.
Angina Pectoris[1425]	Chest pain	Acute pain in the region of the heart, attended with palpitations, a feeling of suffocation and a sense of anxiety.
Anthrax[1426]	Malignant boil	A gangrenous inflammation of skin and cellular tissue, controversially believed to arise from contact with animals that died with similar skin complaints.
Apoplexia[1427]	Apoplexy Haemorrhage	Refers to haemorrhage of or pressure on an organ, usually the brain, heart or lungs. Formerly used to describe a fatal condition preceded by unconsciousness (such as aneurysm, stroke, etc).
Arachnitis[1428]	Brain fever	A type of phrenitis or meningitis. Inflammation of the arachnoid of the brain, chracterised by high fever, delirium,

[1420] The information given in this table is consistent with nineteenth-century understanding of the origins, progression and treatment of diseases.
[1421] R. Dunglison, *Medical Lexicon: A Dictionary of Medical Science (6th ed.)*, (Lea and Blanchard, Philadelphia, 1846), p. 13.
[1422] Dunglison, *Medical Lexicon*, p. 37.
[1423] Dunglison, *Medical Lexicon*, p. 43.
[1424] Dunglison, *Medical Lexicon*, p. 47.
[1425] R. Hooper and J. Quincy, *A New Medical Dictionary* (E. & R. Parker, M. Carey, and B. Warner, California, 1817), pp. 51-52.
[1426] Dunglison, *Medical Lexicon*, p. 53.
[1427] Dunglison, *Medical Lexicon*, p.62.
[1428] Dunglison, *Medical Lexicon*, p. 576.

		pain in the head and intolerance of light and sound.
Ascites[1429]	Peritoneal dropsy	The accumulation of serous fluid in the abdomen, causing swelling.
Asthma[1430]	Asthma Hay fever	Characterised by a sense of suffocation and difficulty breathing. Wheezing is common and the cough expectorates a viscid mucous.
Bronchitis	Acute[1431]	Severe inflammation of the bronchial tubes (large air passages to the lungs), often attributed to changes in the weather or becoming suddenly cold.
	Chronic[1432]	The inflammation of the trachea and the bronchi becomes chronic after a long period of neglecting to treat acute bronchitis, or finishing treatment too rapidly. The cough becomes "troublesome" and hacking, and causes exhaustion.
Catalepsia[1433]	-	A condition in which the patient retains their position and is unable to move due to "a sudden suspension of the senses and of volition."
Catarrh[1434]	Influenza Common cold	Inflammation of mucous membranes accompanied by mucus discharge. Understood to be due to being exposed to damp or cold, or bad weather.
Catarrh Vesica	Inflammation of the bladder	*Vesica* is defined as a hollow sac filled with serous fluid; this is usually the bladder or urinary tract. *Catarrh vesica* refers to the inflammation of the bladder and urinary tract.
Cephalgia[1435]	Headache	Could be linked to weather (especially intense sun or cold). Generally symptomatic of an underlying disease, but usually treated as an illness in itself. Dubbed "a malingers [sic] complaint."

[1429] Dunglison, *Medical Lexicon*, p. 78.
[1430] R. Thomas, *The Eclectic Practice of Medicine: Asthma* (Scudder Brothers and Co., Cincinnati, 1907), at <http://www.henriettesherbal.com/eclectic/thomas/asthma.html>, accessed 3 November 2006.
[1431] J. Walton, J. Barondess and S. Lock, *The Oxford Medical Companion* (Oxford Univeristy Press, Oxford, 1994), p. 98; Thomas, *The Eclectic Practice of Medicine: Acute Bronchitis*, at <http://www.henriettesherbal.com/eclectic/thomas/bronchitis-ac.html>, accessed 3 November 2006.
[1432] Thomas, *The Eclectic Practice of Medicine: Chronic Bronchitis*, at <http://www.henriettesherbal.com/eclectic/thomas/bronchitis-chr.html>, accessed 3 November 2006.
[1433] Dunglison, *Medical Lexicon*, p.142.
[1434] P. MacFie and M. Bonet, *Convict Health at Port Arthur and Tasman Peninsula, 1830-1877: The Relationship Between Diet, Work, Medical Care and Health* (unpublished work by National Parks and Wildlife Service, Hobart, 1985), p. 35; Walton, Barondess and Lock, *The Oxford Medical Companion*, p. 117.
[1435] MacFie and Bonet, *Convict Health*, p. 35.

Cholera[1436]	Asiatic cholera	A frightening disease characterised by violent and uncontrollable diarrhoa and vomiting, which can prove fatal through dehydration in as little as a few hours.
Colic[1437]	-	There exist a large number of different types of colic, but all are characterised by pain in the region of the colon.
Colitis[1438]	Colitis	Inflammation of the colon. See *Enteritis*.
Condyloma[1439]	Genital warts	Soft, indolent growths which appear on the genitals and, occasionally, on the fingers. Caused by the syphilitic virus.
Contusion[1440]	Bruise	Bleeding below the skin due to trauma, usually without laceration of the skin (contused wound).
Convulsive fits[1441]	-	Violent, uncontrolled spasms of the muscles.
Cynanthe maligna[1442]	Sore and/or ulcerated throat	Characterised by sloughing, mucous-coated ulceration of the fauces. Highly contagious, and often associated with scarlet fever or typhus.
Delirium tremens[1443]	-	A state of agitation and delirium occurring in people addicted to alcohol (or, less often, opium or tobacco).
Diarrhoea[1444]	Diarrhoea	Characterised by frequent, loose stools. Almost universally attributable to one of many underlying illnesses (infections, foods such as unripe fruits, gastroenteritis, etc). Enemas are often given to encourage the purging of "morbid matter."
Dyscoae[1445]	Dyscophosis	A condition of the ears and hearing (the term *dyscophosis* means "difficulty with hearing").
Dysentery[1446]	Dysentery Flux	Inflammation of the large intestine characterised by abdominal pain and diarrhoa, often stained with blood.

[1436] M. Dodson, *Disease* (Quercus, London, 2007), pp. 44-53; Dunglison, *Medical Lexicon*, p. 162.
[1437] Dunglison, *Medical Lexicon*, p. 182.
[1438] Dunglison, *Medical Lexicon*, p. 182.
[1439] Dunglison, *Medical Lexicon*, p. 189.
[1440] Dunglison, *Medical Lexicon*, pp. 195-196.
[1441] Dunglison, *Medical Lexicon*, p. 197.
[1442] Dunglison, *Medical Lexicon*, p. 224.
[1443] Dunglison, *Medical Lexicon*, p. 235.
[1444] Thomas, *The Eclectic Practice of Medicine: Acute Catarrhal Enteritis*, at <http://www.henriettesherbal.com/eclectic/thomas/enteritis-ac-cat.html>, accessed 3 November 2006.
[1445] Dunglison, *Medical Lexicon*, p. 262.
[1446] Walton, Barondess and Lock, *The Oxford Medical Companion*, p. 224; Thomas, *The Eclectic Practice of Medicine: Dysentery*, at <http://www.henriettesherbal.com/eclectic/thomas/dysentery.html>, accessed 3 November 2006.

Dyspepsia[1447]	Dyspepsia Gastritis	Indigestion, characterised by nausea, vomiting, flatulence, abdominal pain and bloating. Due to inflammation of the intestines and an increase in secretions, preventing normal digestion.
Dysphemia	Stuttering	
Endocarditis[1448]	Inflammation of the lining of the heart	The lining membranes of the hearts are inflamed, causing the action of the heart to be excited and forceful.
Enteritis[1449]	Colitis	Characterised by intense abdominal pain, vomiting and fever (can also be attended with either diarrhoea or constipation, depending on the type of enteritis).
Epilepsia[1450]	Epilepsy Falling sickness	A disease of the brain which caused unpredictable convulsive fits at irregular intervals, sometime preceded by symptoms such as stupor or vertigo, or a sensation of cold vapour rising through the body which, when it reaches the brain, causes a fit.
Erysipelas[1451]	Erysipelas	A disease causing pain, heat, swelling and redness of the skin, and general fever.
Fever	General[1452]	Described as one of "the most frequent and dangerous affections to which the body is liable." The patient is attacked by rigors, following by hot skin, rapid pulse and lassitude.
	Intermittent[1453]	The fever has distinct paroxysms, with periods of respite from symptoms between attacks. Usually progresses through the cold stage, the hot stage and the sweating stage.
	Continuing[1454]	The fever proceeds with no interruptions or stages in its course.
	Remittent[1455]	The fever becomes moderately worse then better, but does not return to normal as in intermittent fever.

[1447] Walton, Barondess and Lock, *The Oxford Medical Companion*, p. 225; Thomas, *The Eclectic Practice of Medicine: Chronic Gastritis*, at <http://www.henriettesherbal.com/eclectic/thomas/gastritis-chr>, accessed 3 November 2006.
[1448] Dunglison, *Medical Lexicon*, p. 283.
[1449] Dunglison, *Medical Lexicon*, p. 284.
[1450] Dunglison, *Medical Lexicon*, pp. 279-280.
[1451] Dunglison, *Medical Lexicon*, p. 294
[1452] Dunglison, *Medical Lexicon*, pp. 322-325.
[1453] Dunglison, *Medical Lexicon*, pp. 413-414.
[1454] Dunglison, *Medical Lexicon*, p. 194.
[1455] Dunglison, *Medical Lexicon*, p. 647.

Fracture[1456]	Fracture	Break in a bone. The main categories of fracture include simple, compound (bone protrudes through the skin), comminuted (bone broken into several fragments) and complicated (involving other serious injury in addition to the fracture).
Gastroenteritis[1457]	Gastro	Inflammation of the stomach and small intestine.
Gonorrhoea[1458]	Clap Gleet	An infectious venereal disease generally caused by "impure connexion" but also believed to occur spontaneously. Sometime known as 'gleet', which also refers to the discharge caused by the condition.
Gout[1459]	Gout	Inflammation of the ligaments in the joints, somewhat difficult to distinguish from arthritis and rheumatism. The affected joint is swollen, red and acutely painful.
Haematemesis[1460]	Vomiting blood	A condition which causes the patient to vomit blood. No considered dangerous or worrying, unless parts of the abdominal viscera are expelled along with the blood.
Haemoptysis[1461]	Spitting blood	Haemorrhage of the lungs, causing the patient to spit frothy red blood. Attributed to over-use of the lungs through activities such as playing wind instruments or speaking loudly. Haemoptysis can also attend constitutional diseases arising from an organic affection of the lungs; this is a separate condition.
Hemiplegia[1462]	Paralysis	Paralysis of one half of the body, usually affecting the extremities and the face.
Hepatitis[1463]	Hepatitis	Inflammation of the liver.
Hernia[1464]	Rupture	Protrusion of a part of the viscera from its cavity. Usually referring to abdominal hernias, in which the intestines protrudes through the abdominal wall (the most common types being umbilical or inguinal), but can also refer to hernias of the brain or thorax.

[1456] Dunglison, *Medical Lexicon*, p. 335.
[1457] Dunglison, *Medical Lexicon*, p. 345.
[1458] Dunglison, *Medical Lexicon*, pp. 356-357.
[1459] Dunglison, *Medical Lexicon*, pp. 357-358
[1460] Dunglison, *Medical Lexicon*, p. 363.
[1461] Dunglison, *Medical Lexicon*, pp. 365-366.
[1462] J. Forbes (ed.), *The Cyclopaedia of Practical Medicine* (Sherwood, Gilbert and Piper, London, 1834), p. 253; Dunglison, *Medical Lexicon*, p. 375.
[1463] Walton, Barondess and Lock, *The Oxford Medical Companion*, p. 367.
[1464] Walton, Barondess and Lock, *The Oxford Medical Companion*, p. 368; Dunglison, *Medical Lexicon*, p. 378.

Herpes zoster	Shingles	A cutaneous disease in which painful, reddened vesicles erupt in definite clusters.[1465]
Hydrothorax[1466]	Dropsy of the chest Pleural effusion	Collection of serous fluid in the chest. Very rare condition, and consequently difficult to diagnose and treat.
Influenza	Influenza[1467]	Severe and highly infectious form of catarrh.
	Common cold	Mild catarrhal symptoms.
Leprosy[1468]	Lepra	An infectious skin disease causing the eruption of circular scaly patches. Considered very difficult to cure.
Lumbago[1469]	Rheumatism	Rheumatism confined to the lower back.
Mania[1470]	Melancholy Insanity	"Disorder of the intellect," involving impaired judgement, raving and often violence.
Morbus cordis[1471]	Heart attack	Heart disease culminating in a heart attack (*morbus* being Latin for 'disease', *cordis* for 'heart').
Myelitis[1472]		Inflammation of the spine or its membranes. A rare disorder characterised by a deep pain along the spine accompanied by nervous irregularities.
Nephritis[1473]	Kidney disease	Inflammation of the kidney.
Obturatio[1474]	Obstruction *Emphraxis*	Most commonly referring to disorder of the stomach caused by ingestion of damaging substances, but can refer to harm caused to any cavity by poisonous or corrosive materials.
Oedema	Anasarca	A generalised collection of serous fluid in the cellular tissues of the body. See *Anasarca*.

[1465] Dunglison, *Medical Lexicon*, p. 379.
[1466] Dunglison, *Medical Lexicon*, p. 392.
[1467] Dunglison, *Medical Lexicon*, p. 407.
[1468] Forbes (ed.), *The Cyclopaedia of Practical Medicine*, pp. 25-35; Dunglison, *Medical Lexicon*, p. 437.
[1469] Dunglison, *Medical Lexicon*, p. 456.
[1470] Dunglison, *Medical Lexicon*, p. 466.
[1471] J. Purtscher (ed), *Deaths at General Hobart Hospital: January 1864-1884* (self-published, Mt Stuart, 1999), p. 3; Walton, Barondess and Lock, *The Oxford Medical Companion*, p. 609.
[1472] Dunglison, *Medical Lexicon*, p. 502.
[1473] Walton, Barondess and Lock, *The Oxford Medical Companion*, p. 620.
[1474] Dunglison, *Medical Lexicon*, p. 276 and p. 274.

Ophthalmia[1475]	Eye inflammation Conjunctivitis	Eyes become inflamed and painful. Ophthalmia can rapidly lead to blindness if left untreated. Often labelled as a malingerer's complaint as eyes were easily self-harmed.
Phthisis[1476]	Tuberculosis	Usually refers to a pulmonary condition more commonly seen in temperate regions, causing the eruption of tubercules in the lungs. These "usually cause serious mischief" when they are numerous enough to impede natural action of the organs. Treatment usually only beneficial in the early stages.
Paralysis[1477]	Palsy	Loss of muscular control and functionality sometime accompanied by loss of sensation. Often symptomatic of brain disease or apoplexy.
Paralysis agitans[1478]	Shaking palsy	A tremor in which the muscles constantly contract and relax, causing a shaking. In the mid-1860s the condition became known as Parkinson's disease.
Paraphimosis[1479]	Paraphimosis	Strangulation of the penis by the prepuce (foreskin).
Paronychia[1480]	Paronychia	Any tumour or inflammation located near the fingernail, or sometimes anywhere on the hand. Often acutely painful.
Phagedenic ulcer[1481]	Phagedenic ulcer	Ulcer characterised by the corrosion of the skin surrounding the sore.
Phlegmasia[1482]	Phlegmasia	Acute inflammation accompanied by fever.
Phlegmon[1483]	Inflammation	Inflammation of tissues, leading to ulcers or abscess.
Pleuritis[1484]	Pleurisy	A respiratory condition causing pain, dyspnea and cough.
Pleurodinia[1485]	False pleurisy Stitch	A spasmodic complaint of the muscles of the chest, aggravated by coughing, movement and pressure.

[1475] MacFie and Bonet, *Convict Health*, p. 36.
[1476] Purtscher, *Deaths at General Hobart Hospital*, p. 3; Dunglison, *Medical Lexicon*, p. 577; p. 762.
[1477] Walton, Barondess and Lock, *The Oxford Medical Companion*, p. 724; Dunglison, *Medical Lexicon*, p. 551.
[1478] Dunglison, *Medical Lexicon*, p. 552.
[1479] Dunglison, *Medical Lexicon*, p. 552.
[1480] Dunglison, *Medical Lexicon*, p. 554.
[1481] Dunglison, *Medical Lexicon*, p. 570.
[1482] B. Miller and C. Keane, *Encyclopaedia and Dictionary of Medicine and Nursing* (WB Saunders and Co., Philadelphia, 1972), p. 733.
[1483] Miller and Keane, *Encyclopaedia and Dictionary of Medicine*, p. 733.
[1484] Dunglison, *Medical Lexicon*, p. 590.
[1485] Dunglison, *Medical Lexicon*, p. 591.

Pneumonia[1486]	Pneumonia	A respiratory condition causing cough with expectoration, difficulty breathing and a sense of pain and pressure on the chest. Often fatal if expectoration is difficult.
Priapitis[1487]	Phallitis	Inflammation of the penis.
Prolapsus ani[1488]	Prolapsed anus	The rectum protrudes from the anus, caused by haemorrhoids, straining at stool, worms, or excessive relaxation of the muscles.
Pyrosis[1489]	Heartburn	A burning sensation in the stomach, characterised by the rising of acrid liquid up the oesophagus.
Rheumatismus[1490]	Rheumatism	Painful inflammation of the joints. Variably attributed to caused such as cold weather, old age, hard labour and accidents, and inclusive of other joint complaints such as arthritis.
Scirrhus[1491]	Scirrhus	A disease causing induration (hardness) and acute pains, mostly in glandular structures of the body. It is often considered to be the first stage of cancer. Surgical removal of the affected tissue is recommended.
Scorbutus[1492]	Scurvy	Nutritional deficiency disease caused by an overreliance on salt provisions and a lack fresh fruit and vegetables. The mouth and gums become tender and soft, and begin to bleed; old wounds eventually reopen and new ones develop; general debility.
Scrofula[1493]	Tuberculosis	Tuberculosis of the glands or skin, causing tumours to erupt, usually on the neck, which gradually suppurate into indolent ulcers. Often symptomatic of organic, internal disease and generally seen in those of sanguine temperament.
Stremma	Strain	The stretching or rupturing of the soft fibres around the joints, causing pain and inflammation.[1494]

[1486] Dunglison, *Medical Lexicon*, pp. 593-594.
[1487] Dunglison, *Medical Lexicon*, p. 571.
[1488] T. Castles (ed.), *A Manual of Surgery (3rd ed.)*, (E. Cox, London, 1831), p. 287.
[1489] Dunglison, *Medical Lexicon*, p. 637.
[1490] MacFie and Bonet, *Convict Health*, p. 36; Walton, Barondess and Lock, *The Oxford Medical Companion*, p. 863.
[1491] Dunglison, *Medical Lexicon*, p. 673.
[1492] G. Gregory, *Elements of the Theory and Practice of Physic (4th ed.)*, (Baldwin and Cradock, London, 1835), pp. 617-619; MacFie and Bonet, *Convict Health*, p. 37.
[1493] Purtscher, *Deaths at General Hobart Hospital*, p. 3; Walton, Barondess and Lock, *The Oxford Medical Companion*, p. 886; Dunglison, *Medical Lexicon*, p. 675.
[1494] Dunglison, *Medical Lexicon*, pp. 703-704.

Stricture[1495]	Stricture	The contraction of a tube or duct. Usually referring to the urethra, which causes the retention of urine, requiring a catheter to be passed.
Syphilis[1496]	Syphilis	Venereal disease first characterised by the appearance of a chancre, which then gives way to a bubo, sore throat and generalised aching pain. Often treated with mercury.
Tertites[1497]	Orchitis Hernia humeralis	Inflammation of the testes, sometimes caused by injury but usually as a result of disease. The testicles at first are soft and swollen, but soon become hard and painful.
Tuberculosis[1498]	Tubercule Phthisis	See *Phthisis*.
Ulcers[1499]	Ulcers	Characterised by open sores, often weeping pus. May be symptomatic of underlying illness (such as scurvy) or be caused by a previous injury.
Variola[1500]	Smallpox	An infectious disease which causes a raised, pustular skin rash and fever. Once the rash has healed, scarring (pockmarks) is left on the skin.
Vulnus[1501]	Wound	Often caused by accidents or fights.

[1495] Dunglison, *Medical Lexicon*, p. 710.
[1496] Dunglison, *Medical Lexicon*, p. 725.
[1497] J. Laurie, *Elements of Homeopathic Practice or Physic* (Matthew and Houard, Philadelphia, 1852), p. 422; Walton, Barondess and Lock, *The Oxford Medical Companion*, p. 699.
[1498] Dunglison, *Medical Lexicon*, p. 762.
[1499] MacFie and Bonet, *Convict Health*, p. 37.
[1500] Dunglison, *Medical Lexicon*, p. 780.
[1501] MacFie and Bonet, *Convict Health*, p. 37.

Appendix Three - Glossary of Medicines and Treatments[1502]

Scientific / Latin Name of Drug or Treatment	Common Name of Drug or Treatment	Administration Method / Form	Purpose / Action
Acetatis plumbe[1503] *Plumbi subacet* *Plumbi acetas*	Lead acetate Goulard's extract (lead acetate and acetic acid)	Pill	Astringent. Used to treat skin complaints, bleeding, bronchitis, pneumonia, diarrhoea and heart complaints.
Acetum cevadillae[1504]	Vinegar of sabadilla	Solution	Stimulating emetic and errhine. Usually used externally on wounds. Excites a violently emetic and purgative action, even when not used internally. Prompts and violent sneezing when used as an errhine.
Acidum muriatic[1505]	Hydrochloric acid	Solution	Antiseptic. Highly corrosive acid, used internally (after diluting with water) to treat fevers, tuberculosis and cancer of the stomach.
Acidum nitricum[1506]	Nitric acid	Solution	Tonic, often used to revive the system after treatment with

[1502] This is not a glossary of all medicines and treatments used in the mid-nineteenth-century; it covers only those used in the three hospitals examined in this research. The information given in this table is consistent with nineteenth-century understanding of medicines and treatments.

[1503] Pearn, Petrie and Petrie state that by 1826 this substance was used only externally; however, at New Norfolk Hospital it is clearly prescribed as a pill. Thus, it was either still being used internally, or the two substances are different (J. Pearn, A. Petrie and G. Petrie, 'An Early Australian Pharmacopoeia: A Drug List and its *Materia Medica* for an Australian Convict Settlement', *The Medical Journal of Australia*, 149 (1988), p. 632; R. Haines, *Life and Death in the Age of Sail: The Passage to Australia* (University of New South Wales Press, Sydney, 2003), pp. 238-9; S. Potter, *A Compendium of Materia Medica, Therapeutics and Prescription Writing: Plumbum* (P. Blakiston, Philadelphia, 1902), at <http://www.henriettesherbal.com/eclectic/potter-comp/plumbum.html> accessed 25 April 2006.

[1504] Dunglison, *Medical Lexicon: A Dictionary of Medical Science (6th ed.)*, (Lea and Blanchard, Philadelphia, 1846), pp. 784-785.

[1505] Petersen, *Materia Medica and Clinical Therapeutics: Part I* (self-published, Washington, 1905), at <http://www.henriettesherbal.com/eclectic/petersen/acidum.html>, accessed 12 February 2010.

Spritis of nitre	Aqua fortis		mercurials. Strong nitric acid is applied to indolent ulcers. Diluted with water, it is given in cases of typhoid fever, syphilis and liver conditions.
Acidum sulphuricum[1507] *Acid sulph aqua destillus*	Sulphuric acid Oil of vitriol Vitriolic acid	Solution, ointment or liniment.	Astringent. Used (diluted with water) internally for dyspepsia, venereal disease, fever, pneumonia and gallbladder stones. Used externally for sores, rheumatism, paralysis, as a stimulating liniment or to counteract the effects of mercury.
Aloes[1508] *Extractum aloes*	Aloes	Pill or tincture	A purgative given in cases of disease which render the body debilitated (such as scrofula or chronic constipation).
Ammonia acetatis[1509]	Acetate of ammonia Spirit of Mindererus	Solution	A stimulating diuretic and diaphoretic used in fevers and inflammatory diseases, particularly when opium is inadvisable.
Ammonia carbonate[1510] *Ammonia sesquicarbonate*	Carbonate of ammonia	Solution.	Used as a stimulant, expectorant and diaphoretic. Ammonia (diluted in water) to treat coughs with 'scanty expectorant', such as bronchitis or pneumonia. (Ammonia carbonate distilled in alcohol is also known as *sal. volatile*, or more commonly as smelling salts)[1511]

[1506] J. Murray, *A System of Materia Medica and Pharmacy (vol. 1, 5th ed.)*, (Adam Black, Edinburgh, 1828), p. 263: Dunglison, *Medical Lexicon*, pp. 517-518.
[1507] J. Finch, *Pills, Potions and Politics: The Formation of the Pharmaceutical Society of Tasmania* (Pharmaceutical Society of Australia, Hobart, 1991), p. 24; G. Risse, *Hospital Life in Enlightenment Scotland: Care and Teaching at the Royal Infirmary of Edinburgh* (Cambridge University Press, Cambridge, 1986), p. 383; Petersen, *Materia Medica (Part I)*, p. 38.
[1508] H. Felter and J. Lloyd, *King's American Dispensatory: Aloe* (The Ohio Valley Co., Cincinnati, 1898), at <http://www.henriettesherbal.com/eclectic/kings/aloe.html>, accessed 12 April 2009; J. Scudder, *The American Eclectic Materia Medica and Therapeutics: Aloes* (The Scudder Brothers, Cincinnati, 1898), at <http://www.henriettesherbal.com/eclectic/scudder1898/aloe.html > accessed 12 April 2009.
[1509] Scudder, *The American Eclectic Materia Medica: Liquor Ammonia Acetatis*, at <http://www.henriettesherbal.com/eclectic/scudder1898/ammonium-acet_liqu.html>, accessed 2 February 2010; Potter, *A Compend of Materia Medica: Agents Acting on Excretion*, at <http://www.henriettesherbal.com/eclectic/potter-comp/excretion.html>, accessed 30 August 2007.
[1510] Petersen, *Materia Medica (Part I)*, p. 45.
[1511] J. Tooth, *Human and Heroic: The Life and Love of a 19th Century Country Doctor* (Artemis Publications, Hobart, 2007), p. 183.

Antimony potassium tartrate [1512] *Antimonii tartarized*	Tartar emetic	Draught Pill Ointment	A strong emetic. Used to relieve chest 'dullness' (accumulation of mucous when patient is unable to expectorate, such as pneumonia and cholera); when used externally can cause an 'eruption' on the skin. Also used to treat fever.
Aqua calcis[1513] *Liquor calcis*	Limewater	Solution	Antacid; used to treat vomiting.
Aqua fontana[1514]	Spring water	Solution	Used to dilute other medicines.
Aqua menth pip[1515] *Menthae piperita*	Peppermint water	Infusion	Classified as a tonic, but served a multitude of purposes. Used to relieve nausea, stomach pains and colic, to cover the bad taste of or dilute other medicines, as an anaesthetic and to moderate the effects of purgatives.
Argentum nitrate[1516] *Argent. nit*	Nitrate argent Silver nitrate Lunar caustic	Pill or solution	An escharotic and tonic. Used to treat undefined pains (such as in rheumatism), restlessness (such as epilepsy and convulsions), paralysis and debility, and ophthalmia.
Armoracia[1517]	Horseradish	Syrup or infusion	Stimulating sialogogue and diuretic when used in the form of a syrup; emetic when used as an infusion. Promotes secretions, particularly urinary.

[1512] Risse, *Hospital Life*, p. 369; Petersen, *Materia Medica: Part IIa*, p. 11; Tooth, *Human and Heroic*, p. 36.
[1513] Potter, *A Compend of Materia Medica: Calcium*, at <http://www.henriettesherbal.com/eclectic/potter-comp/calcium.html>, accessed 12 April 2009.
[1514] Risse, *Hospital Life*, p. 375.
[1515] Pearn, Petrie and Petrie, 'An Early Australian Pharmacopoeia', p. 632; Risse, *Hospital Life*, p. 380; W. Rimmer, *Portrait of a Hospital: The Royal Hobart* (Royal Hobart Hospital, Hobart, 1981), p. 34; Petersen, *Materia Medica: Part I*, p. 104.
[1516] Petersen, *Materia Medica: Part IIa*, pp. 12-13.
[1517] Felter and Lloyd, *King's American Dispensatory: Armoracia*, at <http://www.henriettesherbal.com/eclectic/kings/armoracia.html > accessed 6 February 2010.

Arsenicum[1518]	Arsenic	Solution	A tonic, used as a draught in fevers and headaches. Administration must cease if the medicine causes vomiting or abdominal pain. Highly toxic, particularly when applied to wounds.
Assafoetida[1519] *Ferula Assafoetida*	Asafoetida	Pill	Antispasmodic. To relieve flatulence and gastrointestinal irritation, particularly if accompanied by hysterical symptoms, depression or nervous irritation.
Aurantii[1520]	Tincture of orange peel	Tincture	A pleasant flavouring agent. Posesses no medicinal properties.
Balsamum copaiba[1521] *Copaifere officinalis*	Balsam of Copaiba	Oleoresin	Cathartic and diuretic. Used as a mild stimulant in chronic mucous and genitor-urinary affections such as gonorrhea, bronchitis, dysentery and diarrhoea. Occasionally it is painted on the cheeks and temples to relieve ophthalmia.
Belladonna[1522] *Atropa belladonna*	Deadly nightshade Atropine	Extract or plaster	Used internally as an antispasmodic, diaphoretic and emetic for cancer, paralysis, mania, amaurosis, schirrus, gastric and cardiac complaints, and for asthma. Also used externally as a plaster for pain associated with abscesses, boils, neuralgia and rheumatism.
Bluestone			See *Cupri sulphas*.

[1518] Murray, *A System of Materia Medica and Pharmacy*, pp. 245-254.
[1519] Felter and Lloyd, *King's American Dispensatory: Asafoetida*, at <http://www.henriettesherbal.com/eclectic/kings/ferula-asaf.html> accessed 12 April 2009.
[1520] J. Remington and H. Wood, *The Dispensatory of the United States of America: Tincture Aurantii Dulci* (JB Lippincott, Philadelphia, 1918), at <http://www.henriettesherbal.com/eclectic/usdisp/_citrus-sine_tinc.html> accessed 25 November 2009.
[1521] Scudder, *The American Eclectic Materia Medica: Copaiba*, at <http://www.henriettesherbal.com/eclectic/scudder1898/copaifera.html> accessed 14 April 2009; Felter and Lloyd, *King's American Dispensatory: Copaiba*, at <http://www.henriettesherbal.com/eclectic/kings/copaiba.html>, accessed 27 March 2009; *The British Pharmaceutical Codex: Copaiba* (Pharmaceutical Society of Great Britain: The Pharmaceutical Press, London, 1911), at <http://www.henriettesherbal.com/eclectic/bpc1911/copaifera-lang.html> accessed 27 March 2009.
[1522] *The British Pharmaceutical Codex: Belladonnae Folia*, at <http://www.henriettesherbal.com/eclectic/bpc1911/atropa.html> accessed 27 September 2007; Felter and Lloyd, *King's American Dispensary: Belladonna*, at <http://www.henriettesherbal.com/eclectic/kings/atropa.html> accessed 20 September 2007.

Calumbae[1523] ***Cocculus palmatus***	Tincture of calumba	Tincture	Used as an astringent to reduce gastrointestinal secretions and stimulate the stomach.
Cambogia[1524]	Gamboge	Pill	Cathartic. Generally employed in combination with other medicines as a purgative (used singly, its effect can be overly violent). Most often used in cases of dropsy or tapeworm.
Camphorae[1525] *Extractum cinnamomum camphora*	Camphor	Oil	Given internally as a stimulant and antispasmodic to treat cough, gastrointestinal complaints, and to relieve fever. Externally, used to relieve spasm, pain and inflammation.
Cantharides[1526]	Spanish flies	Tincture	Used to treat some venereal diseases, and urinary disorders. See also *Emplastrum lytta vesicatoria.*
Capsicum annuum[1527]	Capsicum	Pill	Powerful stimulanting tonic, given in cases of fever. Occasionally used as a rubifacient, also in cases of fever.
Cataplasma lini[1528]	Linseed cataplasm	Thick paste	Moist preparations applied externally in a thick paste to relieve pain and inflammation of rheumatism and oedema.
Cataplasma ulmi[1529]	Elm cataplasm	Thick paste	Moist preparations applied externally in a thick paste applied to

[1523] Rimmer, *Portrait of a Hospital*, p. 32; Risse, *Hospital Life*, p. 373; W. Maugham, *The London Manual of Medical Chemistry* (Whitaker, Treacher and Co., London, 1831), p. 18.
[1524] Felter and Lloyd, *King's American Dispensatory: Cambogia*, at <http://www.henriettesherbal.com/eclectic/kings/garcinia-hanb.html> accessed 9 February 2010.
[1525] Risse, *Hospital Life*, p. 370.
[1526] Felter and Lloyd, *King's American Dispensatory: Tinctura Cantharides*, at <http://www.henriettesherbal.com/eclectic/kings/cantharis_tinc.html> accessed 18 November 2009.
[1527] Murray, *A System of Materia Medica and Pharmacy*, pp.291-292.
[1528] Felter and Lloyd, *King's American Dispensatory: Cataplasma Lini*, at <http://www.henriettesherbal.com/eclectic/kings/linum_cata.html> accessed 23 November 2009.
[1529] Felter and Lloyd, *King's American Dispensatory: Cataplasma Ulmi*, at <http://www.henriettesherbal.com/eclectic/kings/ulmus_cata.html> accessed 4 February 2010

			painful swellings and ulcers.
Catechu[1530] *Extractum acacia catechu*	Catechu	Tincture	Powerful astringent. Reduces excess mucous discharge; relieves dysentery, catarrh and diarrhoea.
Celosia[1531]	Cockscomb	Decoction	Antiblennorrhagic. Used to reduce mucous discharge.
Cimicifugae resina[1532]	Resin of black cohosh	Resin	Often used as a uterine tonic in female patients, but also used in cases of rheumatism, scrofula and fever.
Cinchona[1533]	Jesuit's bark Peruvian bark	Powder	The dried, powdered bark of this tree contains quinine, a tonic. See ***Quininae sulphas***, below.
Citrullus colocynthis[1534]	Bitter apple	Extract	Used (in conjunction with other cathartics to mitigate its violence) in cases of griping or colicky pains in the gastro-intestinal tract.
Colchici[1535] *Colchicum autumnale*	Meadow saffron	Tincture or powder	A severe purgative. Used to relieve gout and rheumatism by removing 'morbid matter' from the body via secretions.[1536]
Cold water treatment[1537]	Cold affusions	-	Used to treat fevers and rheumatism by cooling the body through

[1530] Haines, *Life and Death*, pp. 238-9; Felter and Lloyd, *King's American Dispensatory: Catechu*, at <http://www.henriettesherbal.com/eclectic/kings/acacia-cate.html> accessed 31 October 2006; Risse, *Hospital Life*, p. 371.
[1531] J. Maisch (ed.), 'Materia Medica of the New Mexican Pharmacopoeia', *American Journal of Pharmacy*, 57 (1885), p. 232.
[1532] Felter and Lloyd, *King's American Dispensatory: Resina Cimicifugae*, at <http://www.henriettesherbal.com/eclectic/kings/cimicifuga_resi.html> accessed 24 July 2009.
[1533] Dunglison, *Medical Lexicon*, p. 206.
[1534] Felter and Lloyd, *King's American Dispensatory: Colocynthis*, at <http://www.henriettesherbal.com/eclectic/kings/citrullus-colo.html> accessed 14 April 2009.
[1535] M. Duke, *Development of Medical Techniques: From Leeches to Heart Surgery* (International Universities Press, Connecticut, 1991), p. 79; Rimmer, *Portrait of a Hospital*, p. 34; Petersen, *Materia Medica: Part I*, pp. 69-70, *Part IIa*, p. 24; Felter and Lloyd, *King's American Dispensary*: *Colchicum*, at <http://www.henriettesherbal.com/eclectic/kings/ colchicum-autu.html> accessed 26 October 2006.
[1536] Tooth, *Human and Heroic*, p. 180.
[1537] J. Forrester, 'The Origins and Fate of James Currie's Cold Water Treatment', *Medical History*, 44 (2000), especially pp. 66-67.

	Cold bathing		immersion or bathing in cold or cool water.
Confection aromat[1538]	Aromatic	Sweet lozenge, pill, or tincture	Aromatic. Mixture of spices used to relieve gastrointestinal complaints in conjunction with other medicines – rarely used singly.
Confection sulphuris[1539] *Electuarium sulphur*	Confection of sulphur	Confection	Mild purgative, used to treat haemorrhoids. Comprised of sulphur, potassium bitartrate, syrup of orange-peel and tragacanth.
Conii[1540]	Conium Hemlock	Extract or cataplasm	Used as an antispasmodic and to sedate in cases of hysteria or convulsive movement, and in cases of overexcitement of the heart. Easily toxic if dose is slightly too great. As a cataplasma, it was used to relives pain, especially in cases of cancer
Copper sulphate			See *Cupri sulphas*.
Creosoti carbonas[1541]	Creosote	Solution or ointment	Antiseptic and expectorant. Applied to skin eruptions, and also used to treat continual vomiting and respiratory conditions. Used in carefully regulated doses to prevent poisoning.

[1538] Risse, *Hospital Life*, p. 369; Remington and Wood, *The Dispensatory of the United States of America: Fluidextractus Aromaticum*, at <http://www.henriettesherbal.com/eclectic/usdisp/fluidextr-arom.html> accessed 27 October 2006; Tooth, *Humane and Heroic*, p. 182.
[1539] Felter and Lloyd, *King's American Dispensatory: Confectio Sulphuris*, at <http://www.henriettesherbal.com/eclectic/kings/sulphur_conf.html> accessed 10 May 2009.
[1540] H. Felter, *The Eclectic Materia Medica, Pharmacology and Therapeutics: Conium* (JK Scudder, Cincinnati, 1922) at <http://www.henriettesherbal.com/eclectic/felter/conium-macu.html> accessed 28 October 2009; Felter and Lloyd, *King's American Dispensatory: Cataplasma Conii*, at <http://www.henriettesherbal.com/eclectic/kings/conium_cata.html> accessed 4 February 2010.
[1541] D. Sandford, T. Thomson and A. Cunningham (eds.), *The Popular Encyclopaedia, Being a General Dictionary of Arts, Sciences, Literature, Biography, History and Political Economy (vol. VII, part 1)*, (Blackie and Son, Glasgow, 1841), pp. 426-427.

Cucurbita citrullus [1542]	Watermelon (seeds)	Powder or fluid extract	Diuretic. Used to relieve irritation and inflammation of the bladder, to relieve kidney pain and pain or burning on urination.
Cucurbitula cruente [1543]	Cupping	-	A glass vessel is used to form a vacuum on the skin, which has been scarified to allow blood to be drawn out using the action of the vacuum.
Cupri sulphas [1544] Copper sulphate	Blue vitriol Bluestone	Solution	An emetic, commonly used in ophthalmia, dysentery, diarrhoea, pneumonia and venereal diseases until its toxicity was recognised and usage gradually ceased. Occasionally used in suicide attempts.
Curcus purgans [1545]	Purging nut	Pill or oil	Often used as a drastic cathartic, although the leaves are occasionally used as a rubifacent.
Decocta hordei [1546]	Decoction of barley	Liquid	Barley is boiled in water, and the liquid used as an easily digestible drink for cases with irritable gastrointestional systems.
Decocta sarsae [1547]	Decoction of sarsaparilla	Solution	Diaphoretic and demulcent. Used in cases of syphilis, rheumatism, herpes and dropsy.
Desault splint [1548]	Desault splint	-	A splint described as consisting of "two straight splints…one long enough to extend from the crest of the ilium to four inches beyond the foot, and the other from the perineum to the sole of the foot along the inner side of the limb; near the upper end of the long splint a hole

[1542] Petersen, *The Materia Medica: Cucurbita Citrullis*, at <http://www.henriettesherbal.com/eclectic/petersen/citrullus-vulg.html> accessed 18 February 2009.
[1543] A. Cooley, *The Pharmaceutical Latin Grammar* (Oxford University, Oxford, 1845), p. 116.
[1544] Potter, *A Compend of Materia Medica: Cuprum*, at <http://www.henriettesherbal.com/eclectic/potter-comp/cuprum.html> accessed 27 October 2006.
[1545] Felter and Lloyd, *King's American Dispensatory: Cucas Purgans*, at <http://www.henriettesherbal.com/eclectic/kings/curcas-purg.html> accessed 11 April 2009.
[1546] Felter and Lloyd, *King's American Dispensatory: Decoctum Hordei*, at <http://www.henriettesherbal.com/eclectic/kings/hordeum_deco.html> accessed 23 November 2009.
[1547] Felter and Lloyd, *King's American Dispensatory: Decoctum Sarsae*, at <http://www.henriettesherbal.com/eclectic/kings/smilax_deco.html> accessed 10 May 2009.
[1548] F. Sargent, *On Bandaging, and Other Operations of Minor Surgery* (Blanchard and Lea, Philadelphia, 1856).

			was perforated for the attachment of the counter-extending band, and a notch was cut at the lower extremity, with a perforation just above it, for the securing of the extending strap. The rest of the apparatus consisted of…long pads filled with chaff, to equalize the pressure of the splints along the outer and inner faces of the limb; a counter-extending band, to pass between the pubis and the upper part of the thigh, and to be attached to the upper extremity of the long splint, and an extending band, for the purpose of firmly connecting the foot with the lower end of the same splint; lateral pressure was made by means of several strips of muslin, which drew the splints and the pads firmly against the limb on each side, while the thigh was enveloped in a bandage."
Deseander in balneum calidum[1549]	Hot bath (37°-43°C)	-	Often given immediately upon admission, probably for hygiene reasons, although baths were considered to hold medicinal properties of their own.
Digitalis[1550] *Digitalis purpurea*	Foxglove	Tincture	A diuretic to remove fluid from the chest (dropsy), and stimulate the heart by increasing the efficiency of the cardiac and circulatory systems, particularly by causing the kidneys to secrete increased levels of fluid.[1551]
Disulphate of quina	Quinine	Powder	Tonic. The active component of Quinine (Peruvian bark).
Elaterii[1552]	Squirting cucumber	Powder, pills or solution	A powerful cathartic used to treat dropsy and cystitis.

[1549] *The British Pharmaceutical Codex: Balnea*, at <http://www.henriettesherbal.com/eclectic/bpc1911/balneum.html> accessed 27 October 2006; Petersen, *Materia Medica: Part Ib*, pp. 45-47.
[1550] Risse, *Hospital Life*, p. 374; Petersen, *Materia Medica: Part I*, pp. 74-75, *Part IIa*, p. 25; Pearn, Petrie and Petrie, 'An Early Australian Pharmacopoeia', p. 633.
[1551] Tooth, *Human and Heroic*, p. 20.
[1552] F. Ellingwood, *The American Materia Medica: Elaterium* (self-published, Chicago, 1919), at <http://www.henriettesherbal.com/eclectic/ellingwood/ecballium.html> accessed 12 April 2009; Dunglison, *Medical Lexicon*, p. 492.

Ecballium Elaterinum

Extractum elaterii

Emplastrum adhaesivum elasticum[1553]	Rubber adhesive plaster	Plaster	India rubber and wool fat are combined with medicines and applied to wounds after being strained through muslin.
Emplastrum lytta vesicatoria[1554] *Cantharides*	Plaster of Spanish fly	Solution, oil or plaster	Rubefacient. Fly is dried and pulverised, and suspended in liquid/oil, or made into a plaster used to relieve rheumatism, phthisis, asthma and hepatitis.
Emplastrum plumbi[1555]	Lead plaster	Plaster	Olive oil and oxide of lead are boiled together, and applied to protest wounds and irritated skin. Not in itself medicinal, but was often used as a base for other medicinal agents.
Enema catharticum[1556]	Cathartic enema	Enema	Cathartic, commonly given to relieve constipation or when speedy evacuation of the bowels is required. Comprising salt, olive oil, molasses and warm water.
Enema foetidum[1557] *Enema asafetidae*	Asafetida enema	Enema	Enema given by injection as an antispasmodic and anodyne to relieve flatulence.

[1553] *The British Pharmaceutical Codex: Emplastrum Adhaesivum Elasticum*, at <http://www.henriettesherbal.com/eclectic/bpc1911/emplastrum-adha-elas.html> accessed 27 October 2007; Remington and Wood, *The Dispensatory of the United States of America: Emplastra*, at <http://www.henriettesherbal.com/ eclectic/usdisp/emplastra.html> accessed on 27 October 2006.

[1554] Felter and Lloyd, *King's American Dispensary: Emplastrum Picis Cantharidatum*, at <http://www.henriettesherbal.com/eclectic/kings/cantharis_empl.html> accessed 27 October 2006; Risse, *Hospital Life*, p. 371.

[1555] T. Brunton, *A Text-Book of Pharmacology, Therapeutics and Materia-Medica* (Spottiswoode & Co, London, 1885), at <http://chestofbooks.com/health/ materia-medica-drugs/Pharmacology-Therapeutics-Drugs/Emplastrum-Plumbi-B-and-U-S-P-Lead-Plaster.html> accessed 21 May 2009; Dunglison, *Medical Lexicon*, p. 278.

[1556] Felter and Lloyd, *King's American Dispensary: Enemata*, at <http://www.henriettesherbal.com/eclectic/kings/enemata.html> accessed 27 October 2006.

[1557] Dunglison, *Medical Lexicon*, p. 238; *The British Pharmaceutical Codex: Asafetida*, at <http://www.henriettesherbal.com/eclectic/bpc1911/ferula-asaf.html> accessed 24 May 2008.

Enema opiates[1558]	Enema of opium	Enema	Sedative anodyne. Used to treat diarrhoea and vomiting. Comprising salt, olive oil, warm water and opium
Enema tabaci[1559]	Tobacco enema	Enema	Emetic and antispasmodic. Used to produce nausea and muscular relaxation in sufferers of hernia and severe constipation.
Extract colocynth comp [1560] *Extractum citrullus colosynthus*	Compound extract of colocynth	Extract	Powerful purgative/cathartic, and used to relieve gastrointestinal cramps such as dyspepsia and colic, and neuralgic pains.
Ferri carbonatis[1561]	Carbonate of iron		Emmenagogue.
Fomentation[1562]	Poultice	Poultice	Cloths are dipped in hot water or liquid medicines, and used to keep a body part hot and moist. A dry fomentation can also be used (generally a hot brick or similar wrapped in flannel to retain warmth). Used to heal fractures.
Fomentation fonticulus[1563]	Warm application of ointment.	Poultice and ointment	*Fonticulus* refers to an ointment used to keep blisters open.
Fomentation oenothera	Evening primrose fomentation	Poultice	Applied to ulcers and other skin conditions.
Gargarism alumen[1564]	Potassium aluminium	Solution	Astringent gargle used to treat ptyalism.

[1558] Risse, *Hospital Life*, p. 374, p. 379.
[1559] Felter and Lloyd, *King's American Dispensary: Enemata*, at <http://www.henriettesherbal.com/eclectic/kings/enemata.html> accessed 29 October 2006.
[1560] Pearn, Petrie and Petrie., 'An Early Australian Pharmacopoeia', p. 632; Risse, *Hospital Life*, p. 373; Petersen, *Materia Medica: Part Ia*, p. 71, *Part IIa*, p. 24.
[1561] Murray, *A System of Materia Medica and Pharmacy*, pp. 389-399.
[1562] Dunglison, *Medical Lexicon*, p. 385.
[1563] Risse, *Hospital Life*, p. 375.

Super sulphas alumina et potassae	sulfate	(mouthwash)	
Gargarism chlorid calcis[1565]	Solution of chlorinated lime	Solution (mouthwash)	Sedative, used to control bleeding.
Gentian[1566] *Gentiana lutea*	Gentian	Infusion	Tonic. Used to stimulate appetite and digestion.
Guaiacum lignum[1567]	Guaiacum wood	Tincture	Stimulant. Will produce a diaphoretic effect if the patient is kept warm whilst under its effect; if the patient is kept cool, the effect with be diuretic. Used to treat rheumatism, syphilis, and scrofula.
Haustus anodyne	Pain relief draught	Solution	Anodyne. A draught containing opium and other ingredients to relieve pain, such as that suffered in rheumatic cases.
Haustus effervescentia[1568]	Effervescing powders Seidlitz powders	Powder or solution	Purgative. Bicarbonate of soda and tartaric acid combined to make an effervescing laxative drink.
Hydrargyri[1569]	Mercury pill	Pill	Mercurial, also a tonic. Used as an anti-syphilitic, and to treat gastrointestinal complaints, tonsillitis and skin diseases. Consisting

[1564] Risse, *Hospital Life*, p. 368; Cook, *The Physiomedical Dispensatory: Alumen*, at <http://www.henriettesherbal.com/eclectic/cook/ALUMEN.htm> accessed 29 October 2006.
[1565] Risse, *Hospital Life*, p. 368; Cook, *The Physiomedical Dispensatory: Alumen*, at <http://www.henriettesherbal.com/eclectic/cook/ALUMEN.htm> accessed 29 October 2006.
[1566] Risse, *Hospital Life*, p. 375; J. Scudder, *Specific Medications and Specific Medicines: Gentian* (Wilstatch, Baldwin & Co., Cincinnati, 1870), at <http://www.henriettesherbal.com/eclectic/spec-med/gentiana.html> accessed 29 October 2006.
[1567] Felter and Lloyd, *King's American Dispensatory: Guaiacum Lignum*, at <http://www.henriettesherbal.com/eclectic/kings/guaiacum.html> accessed 21 January 2010.
[1568] Felter and Lloyd, *King's American Dispensatory: Pulvaris Effervescens*, at <http://www.henriettesherbal.com/eclectic/kings/effervesc_pulv.html> accessed 14 April 2009.
[1569] Pearn, Petrie and Petrie, 'An Early Australian Pharmacopoeia', p. 632; Petersen, *Materia Medica: Part I*, pp. 95-96; Potter, *A Compend of Materia Medica: Hydrargyrum*, at <http://www.henriettesherbal.com/eclectic/potter-comp/hydrargyrum.html> accessed 30 October 2006.

Massae hydrargyri *Pilulae hydrargyri*	'Blue pill' Quicksilver		of mercury mixed with confection of roses and liquorice root.
Hydrargyri bichloride [1570]	Bichloride of mercury	Powder	A mercurial, used externally to treat skin ulcers or eruptions.
Hydrargyri chlorid[1571] *Hydrargyrus muriatus corrosivus*	Mercuric chloride	Ointment or pill	A purgative. Also applied externally to cleanse ulcers or remove insects, and used internally to treat venereal diseases and fever.
Hydrargyri oxymel[1572]	Honey and mercury	Solution	Mercurial. Used as a treatment for syphilis.
Hydrargyri submur[1573] *Hydrargyri submuricitis*	Calomel Mercury	Pill or mixture	Commonly used as a purgative and an anti-syphilitic medicine. [1574]
Hydrargyrum cum creta[1575]	Mercury with chalk Grey powder	Pill or mixture	Can be used as a substitute for calomel in cases of glandular inflammation. Made from chalk, mercury, honey and water.
Hyoscyamus[1576] *Extractum hyoscyamus niger*	Black henbane	Extract	Relieves pain (such as that caused by severe purgatives); sedates; relieves spasmodic conditions such as coughs; used especially when opium cannot be given. Also used to treat typhoid, pneumonia

[1570] G. Wood, *A Treatise on Therapeutics, and Pharmacology or Materia Medica* (J.B.Lippincott & Co, Philadelphia, 1867), at <http://chestofbooks.com/health/ materia-medica-drugs/Treatise-Therapeutics-Pharmacology-Materia-Medica-Vol2/VII-Corrosive-Chloride-Of-Mercury-Corrosive-Sublimate-Bic.html> accessed 20 April 2009.

[1571] Risse, *Hospital Life*, p. 376.

[1572] Felter and Lloyd, *King's American Dispensary: Oxymel*, at <http://www.henriettesherbal.com/eclectic/kings/oxymel.html> accessed 26 September 2007; Ellingwood, *The American Materia Medica: Mercury*, at <http://www.henriettesherbal.com/eclectic/ellingwood/hydrargyrum.html> accessed 30 August 2007.

[1573] Pearn, Petrie and Petrie, 'An Early Australian Pharmacopoeia', p. 632.

[1574] Tooth, *Humane and Heroic*, p. 180.

[1575] Potter, *A Compend of Materia Medica: Hydrargyrum*, at <http://www.henriettesherbal.com/eclectic/potter-comp/hydrargyrum.html> accessed 1 February 2010.

[1576] Haines, *Life and Death*, pp. 238-9; Felter and Lloyd, *King's American Dispensary: Hyoscyamus*, at <http://www.henriettesherbal.com/eclectic/kings/hyoscyamus.html> accessed 25 April 2006; Risse, *Hospital Life*, p. 376; Petersen, *Materia Medica: Part I*, pp. 97-98, *Part IIa*, pp. 28-29.

			and scarlet fever.
Iodini[1577]	Iodine	Tincture	Tonic stimulant of the lymphatic system.
Ipecacuanha *Pulveris ipecaueanhae compositus*[1578]	Ipecacuanha Compound powder of ipecacuanha	Powder or pill	Generally used as an emetic, but depending on its dosage can also function as a diuretic or a diaphoretic in fever and inflammatory diseases.
Issue[1579]	*Fonticulus* Pea issue	-	An incision is made in the skin, large enough to hold a pea or bean inserted to keep the wound open and allow free discharge.
Jalapa *Pulveris jalapae compositus*[1580] *Pulveris purgans*	Jalap Compound powder of jalap	Powder	Common, fast-acting cathartic used to rid the entire body of 'morbid matter'. Also used in combination with other medicines to increase the speed of their action (suych as mercury). Comprised of Jalap, Potassium Bitartrate and sometimes ginger.
Liniment ammonia[1581] *Oleum ammoniatum* *Unguentum tussivam*	Olive oil and water solution of sodium hydroxide (caustic ammonia)	Ointment or gargle	Diaphoretic and rubifacient. Applied to chest as a vesicant; also used as a gargle for throat and mouth complaints.
Liniment anodyne[1582]	Liniment of opium	Ointment	Anodyne. Used to relieve pain of contusions, muscular injuries and

[1577] Murray, *A System of Materia Medica and Pharmacy*, pp. 261-262.
[1578] Felter and Lloyd, *King's American Dispensary: Pulvis Ipecacuanhae Compositus*, at <http://www.henriettesherbal.com/eclectic/kings/cephaelis_pulv.html> accessed 10 May 2009.
[1579] Dunglison, *Medical Lexicon*, p. 333; W. Cocks, *A Concise Treatment of Operative Surgery: Describing the Methods Adopted by the English, Continental and American Surgeons* (Longman, Orme, Brown, Green & Longman, London, 1837), p. 23 (see illustration of the insertion of an issue on plate 3).
[1580] Remington and Wood, *The Dispensatory of the United States of America: Pulvis Jalapae Compositus*, at <http://www.henriettesherbal.com/eclectic/usdisp/exogonium_pulv.html> accessed on 30 October 2006; Risse, *Hospital Life* (1986), p. 376.
[1581] Risse, *Hospital Life*, p. 368.

Liniment opii			rheumatism. Consisting of opium, camphor, wine, oil of rosemary and soap.
Liniment saponis[1583]	Soap liniment	Ointment	Used as a stimulant and anodyne to treat rheumatism and bruises.
Liniment stimulant[1584]	Stimulating liniment	Ointment	A liniment which stimulates the action of various systems.
Liquor ammonii anisatus[1585] ***Anisated solution of ammonia***	Solution of oil of anise	Solution	Tonic. A flavouring agent, comprising of oil of anise, solution of ammonia and alcohol, also used to relieve flatulence.
Liquor potassae[1586] *Solution of potassa*	Solution of potassium	Solution	Antacid and diuretic. Used to relieve dyspepsia and other gastrointestinal complaints.
Lotio aceti[1587]	Vinegar lotion	Lotion	Used to treat bruises.
Lotio evapora[1588]	Evaporating lotion	Lotion	A lotion which cools the skin through evaporation, used in cases of inflammatory skin conditions, excitability, restlessness and irritable headache. Comprised of one part rectified spirit to six parts water.

[1582] Risse, *Hospital Life*, p. 379; Felter and Lloyd, *King's American Dispensary: Linimentum Opii*, at <http://www.henriettesherbal.com/eclectic/kings/papaver-somn_lini.html> accessed 30 October 2006.
[1583] Felter and Lloyd, *King's American Dispensary: Linimentum Saponis*, at <http://www.henriettesherbal.com/eclectic/kings/sapo_lini.html> accessed 1 February 2010.
[1584] Dunglison, *Medical Lexicon*, p. 708.
[1585] Remington and Wood, *The Dispensatory of the United States of America: Oleum Anisi*, at <http://www.henriettesherbal.com/eclectic/usdisp/_pimpinella_oleu.html> accessed 30 October 2006; *The British Pharmaceutical Codex: Liquor Ammoniae Anisatus*, at <http://www.henriettesherbal. com/eclectic/bpc1911/_pimpinella-anis_liqu.html> accessed 30 October 2006.
[1586] Potter, *A Compend of Materia Medica: Cuprum*, at <http://www.henriettesherbal.com/eclectic/potter-comp/potassium.html> accessed 30 October 2006.
[1587] *Pharmacopoeia of St Bartholomew's Hospital* (J.E. Adlard, London, 1869), p. 33; H. Beasley, *The Pocket Formulary, and Synopsis of British and Foreign Pharmacopoeias (5th ed.)*, (John Churchill, London, 1851), p. 238.
[1588] W. Dick, *Encyclopaedia of Practical Receipts and Processes* (Dick and Fitzgerald, New York, 1872), at <http://chestofbooks.com/reference/Encyclopedia-Of-Practical-Receipts-And-Processes/Lotions-Part-4.html> accessed 27 July 2009; *The British Pharmaceutical Codex: Alcohol*, at <http://www.henriettesherbal.com/eclectic/bpc1911/alcohol.html> accessed 1 February 2010.

			An alcohol based lotion which cools the skin as it evaporates.
Lotio frigid[1589] Cooling lotion	Saline wash	Lotion	To cool the body in cases of fever or injury.
Lotio hydrargyri oxidum flavum[1590]	Yellow oxide of mercury	Lotion	Mercurial. Used to treat syphilis and cases of ringworm.
Lotio nigra[1591]	Black lotion Black wash	Lotion	Composed of chloride of mercury, water and solution of lime, the black lotion was used to treat venereal disease.
Magnese sulphat[1592] *Sulphas magnesia*	Sulphate of magnesia Magnesia Sulphate	Solution or syrup	A bitter tasting but mild cathartic, either alone or in combination with more violent purgatives to moderate their action. Increases natural secretions. Used to treat ophthalmia, dysentery and nephritis.
Magnesium carbonate[1593] *Magnesia alba*	Magnesium carbonate	Powder	Used as a cathartic and antacid, and also combined in tinctures of other medicines.
Magnolia[1594]	Magnolia	Pill	Tonic. Used to treat dyspepsia, fever and rheumatism.

[1589] Felter and Lloyd, *King's American Dispensary: Lotio Refrigerans*, at <http://www.henriettesherbal.com/eclectic/kings/saline_loti.html> accessed 30 October 2006.
[1590] Brunton, *A Text-Book of Pharmacology*, at <http://chestofbooks.com/health/ materia-medica-drugs/Pharmacology-Therapeutics-Drugs/Hydrargyri-Oxidum-Flavum-B-and-U-S-P-Yellow-Oxide-of-Mercury-HgO-215-7.html> accessed 20 April 2009.
[1591] *The British Pharmaceutical Codex: Lotiones*, at <http://www.henriettesherbal.com/eclectic/bpc1911/lotiones.html> accessed 2 July 2009.
[1592] Ellingwood, *The American Materia Medica: Magnesium Sulphate*, at <http://www.henriettesherbal.com/eclectic/ellingwood/magnesium-sulp.html> accessed 30 October 2006; Scudder, *Specific Medications: Magnesia Sulphas*, at <http://www.henriettesherbal.com/eclectic/scudder1898/magnesium-sulp.html> accessed 11 April 2009.
[1593] Risse, *Hospital Life*, p. 378; Felter and Lloyd, *King's American Dispensary: Extractum Vanillae Fluidum*, at <http://www.henriettesherbal.com/eclectic/kings/vanilla_extr.html> accessed 30 October 2006.
[1594] Felter and Lloyd, *King's American Dispensary: Magnolia*, at <http://www.henriettesherbal.com/eclectic/kings/magnolia.html> accessed 28 October 2009.

Maranta[1595]	Arrowroot	Powder made into a jelly	A gentle, non-irritating farinaceous food used for those convalescing from fever or gastrointestinal complaints.
Mica panis[1596]	Crumb of bread Bread poultice	Pill or poultice	Mixed with milk or hot water to make a poultice to treat phlegmon or to promote suppuration, or used to form pills.
Mistura cathartica[1597] *Catharticus amarus*	Epsom salts Magnesia vitriolata	Salt	Used as a diuretic, cathartic, anti-emetic and diaphoretic.
Mistura cetacei[1598]	Spermaceti	Powder	Demulcent. Combined with olive oil and powdered gum Arabic to form a cough medicine for children.
Mistura creta comp[1599]	Chalk compound Calcium carbonate[1600]	Powder	Antacid. Used to relieve diarrhoea.
Morphine muriate[1601] *Morphinae hydrochloridum*	Hydrochlorate of morphine	Solution	See *Solution morphine acetate.*
Morrison's Pills	-	Pill	Purgative. Containing aloes, cream of tartar and colocynth.
Mucilago gummi acacia *Acaciae gummi*[1602]	Mucilage of gum arabic	Solution	Demulcent. Diluted mucilage given as a nutritious drink. Also used to provide adhesion in pills and to cause mixtures to become soluble.

[1595] Felter and Lloyd, *King's American Dispensatory: Maranta*, at <http://www.henriettesherbal.com/eclectic/kings/maranta.html > accessed 8 February 2010.
[1596] J. Pereira, *The Elements of Materia Medica and Therapeutics: Triticum vulgare (vol. II, 3th American ed.)*, (1854) at <http://www.henriettesherbal.com/eclectic/pereira/triticum.html> accessed 12 April 2009.
[1597] Risse, *Hospital Life*, p. 378.
[1598] Felter and Lloyd, *King's American Dispensatory: Cetaceum*, at <http://www.henriettesherbal.com/eclectic/kings/cetaceum.html > accessed 8 November 2009.
[1599] Potter, *A Compend of Materia Medica: Calcium*, at <http://www.henriettesherbal.com/eclectic/potter-comp/calcium.html> accessed 18 September 2007.
[1600] Tooth, *Humane and Heroic*, p. 182.
[1601] *The British Pharmaceutical Codex: Morphinae Hydrochloridum*, at <http://www.henriettesherbal.com/eclectic/bpc1911/papaver_morp2.html> accessed 10 May 2009.

Olei menthe pip[1603] *Olei menthae piperita*	Oil of peppermint	Oil or lozenge	Gastric stimulant, and an antiseptic.
Olei morrhuae[1604]	Cod liver oil	Oil	A stimulant, used in chronic conditions (eg. rheumatism or scrofula).
Olei ricini[1605] *Ricinus communis*	Oil of castor bean	Oil	Used as a purgative, and also to relieve abdominal pain.
Olei terebinthinae[1606]	Oil of turpentine	Oil	Stimulant and diuretic. Used in an enema to relieve tympanitic swelling of the abdomen (when confined to the colon).
Olei tiglii[1607]	Croton oil	Oil	A powerful and fast-acting cathartic.
Oxymel[1608]	Honey syrup	Syrup	Generally used to combine with other medicinal ingredients (such as *Ipecacuanha* or mercury), but occasionally used as a demulcent, combined with acetic acid, distilled water and heated until syrupy.
Papaw[1609]	Pawpaw / Papaya		Emetic, but also used to treat skin complaints, such as erysipelas,

[1602] State Library of Tasmania, *Tasmanian Convict Department: Instructions for the Management of the Convict Hospitals* (Government Printers, Hobart, 1845), Appendix V.
[1603] Remington and Wood, *The Dispensatory of the United States of America: Oleum Menthae Piperita*, at <http://www.henriettesherbal.com/eclectic/usdisp/_mentha-pipe_oleu.html> accessed 30 October 2006.
[1604] L. Sayre, *A Manual of Materia Medica and Pharmacognosy: Oleum Morrhuae* (P. Blakiston's Son, Philadelphia, 1917), at <http://www.henriettesherbal.com/eclectic/sayre/gadus.html> accessed 6 February 2010.
[1605] Pearn, Petrie and Petrie, 'An Early Australian Pharmacopoeia', p. 632; Risse, *Hospital Life*, p. 380.
[1606] Felter and Lloyd, *King's American Dispensatory: Enemata*, at <http://www.henriettesherbal.com/eclectic/kings/enemata.html> accessed 27 March 2009.
[1607] Scudder, *Specific Medications: Oleum Tiglii*, at <http://www.henriettesherbal.com/eclectic/scudder1898/croton.html> accessed 14 April 2009.
[1608] Felter and Lloyd, *King's American Dispensary: Oxymel*, at <http://www.henriettesherbal.com/eclectic/kings/oxymel.htmll> accessed 26 September 2007; Dunglison, *Medical Lexicon*, p. 543.

			tubercles and eczema.
Potasse bichromate[1610]	Potassium Bichromate	Powder	Used to treat bronchitis and coughs, particularly harsh rasping coughs or those with congestion in the larynx.
Potasse bitartras[1611]	Bitartrate of potash	Powder	A relatively gentle, commonly used purgative, particularly in cases of fever or inflammatory diseases.
Potasse hydrargyri[1612]	Mercury and iodide of potassium	Pill	Mercurial. Experimental treatment for syphilis which by the early twentieth century had been discounted by most practitioners as ineffective.
Potasse iodides[1613] *Hydriodate of potassae*	Potassium iodide	Powder Solution	Irritant diuretic. Used to treat a range of condition, from catarrh and tonsillitis to venereal disease to aneurisms.
Potasse nitrate[1614]	Potassium nitrate	Solution	Used as a diaphoretic and diuretic, to rid the kidneys of excess fluid (eg. for nephritis) or as a sedative to relieve fevers. Also used to relieve neuralgic pains, such as in rheumatism.
Potasse supertartrate[1615]	Cream of tartar	Pill	A cathartic which cools the body; used to treat dropsies and febrile

[1609] Felter and Lloyd, *King's American Dispensatory: Carica Papaya*, at <http://www.henriettesherbal.com/eclectic/kings/carica.html> accessed 29 November 2009.
[1610] Ellingwood, *The American Materia Medica: Potassium Bichromate*, at <http://www.henriettesherbal.com/eclectic/ellingwood/potassium-bich.html> accessed 20 September 2007.
[1611] Scudder, *The American Eclectic Materia Medica and Therapeutics: Potassae Bitartras*, at <http://www.henriettesherbal.com/eclectic/scudder1898/potassium-bita_cath.html> accessed 12 November 2009.
[1612] F. Ellingwood, 'The Successful Treatment of Syphilis without Mercury', *Ellingwood's Therapeutist: A Monthly Journal of Direct Therapeutics*, 2 (1908), at <http://www.henriettesherbal.com/eclectic/journals/ elth1908/12-syphilis.html> accessed 18 September 2007.
[1613] Dunglison, *Medical Lexicon*, p. 417; Potter, *A Compend of Materia Medica: Iodine*, at <http://www.henriettesherbal.com/eclectic/potter-comp/iodine.html> accessed 24 July 2009.
[1614] Ellingwood, *The American Materia Medica: Potasse Nitrate*, at <http://www.henriettesherbal.com/eclectic/ellingwood/potassium-nitr.html> accessed 30 August 2007; Potter, *A Compend of Materia Medica: Potassium*, at <http://www.henriettesherbal.com/eclectic/potter-comp/potassium.html> accessed 30 October 2006; Ellingwood, *The American Materia Medica: Potassium Nitrate*, at <http://www.henriettesherbal.com/eclectic/ellingwood/ potassium-nitr.html> accessed 30 October 2006.

			diseases.
Pulveris carbonate[1616] ***Pulvis carbonas ligni***	Powdered charcoal	Powder	Used as an absorbent and antiseptic in phthisis and rheumatism to relieve expectorant cough and reduce sputa.
Pulveris Doveri[1617] ***Pulveris ipecacuanhae et opii***	Dover's powder Powder of ipecacuanha and opium	Powder or pill	Used to treat rheumatism and other inflammations, cough, gastrointestinal complaints and to relieve pain, particularly in cases where opium cannot be used alone.
Pulveris opii et cretae[1618]	Opium and chalk (calcium carbonate)	Powder or pill	Anodyne. To relieve pain, generally gastrointestinal.
Quassia[1619]	Quassia	Infusion	Tonic. Used in dyspepsia, debility and fevers, and to stimulate appetite.
Quininae sulphas[1620]	Sulphate of quinine	Pill or solution	Tonic. Given in fevers, especially intermittent and continuing
Rhei[1621] *Extractum rheum officinalis*	Rhubarb	Powder or pill	Used as a mild cathartic and astringent acting on the gastrointestinal system. Used in diarrhoea, dysentery and constipation.
Sacchari album[1622]	White sugar	Powder	Made into a dentifrice (toothpaste) or an ointment for skin eruptions,

[1615] Scudder, *Specific Medications: Potassae Bitartras*, at <http://www.henriettesherbal.com/eclectic/scudder1898/potassium-bita.html> accessed 12 April 2009; Dunglison, *Medical Lexicon*, p. 612.
[1616] Risse, *Hospital Life*, p. 371.
[1617] Felter and Lloyd, *King's American Dispensary: Pulvis Ipecacuanhae et Opii*, at <http://www.henriettesherbal.com/eclectic/kings/cephaelis_pulv1.html> accessed 10 May 2009.
[1618] Risse, *Hospital Life*, p. 373; *The British Pharmaceutical Codex: Opium*, at <http://www.henriettesherbal.com/eclectic/bpc1911/papaver.html> accessed 30 October 2006.
[1619] Felter and Lloyd, *King's American Dispensary: Quassia*, at <http://www.henriettesherbal.com/eclectic/kings/hyoscyamus.html> accessed 29 October 2006.
[1620] *The British Pharmaceutical Codex: Quininae Sulphas*, at <http://www.henriettesherbal.com/eclectic/bpc1911/cinchona_quin20.html> accessed 11 April 2009
[1621] Risse, *Hospital Life*, p. 380; Petersen, *Materia Medica: Part I*, p. 122; Pearn, Petrie and Petrie, 'An Early Australian Pharmacopoeia', p. 633.

	Loaf sugar		or mixed into medicines to make them more palatable.
Sassafras[1623]	Infusion of sassafras	Solution	Diaphoretic. Primarily used to flavour other medicines, but is also used to treat skin conditions, rheumatism and syphilis, and in disorders of the kidneys, bowels and chest. Externally, it can be used in cases of ophthalmia.
Scammonium[1624]	Scammony	Emulsion	A powerful cathartic.
Scarificatio[1625] *Catachasmos*	Scarification	-	Small incisions made with a lancet or scarificator (a small brass box which pushes a number of lancets into the skin when a button on the side is pressed) in the skin to discharge blood or other matter.
Scilla[1626] *Extractum urginea maritime*	Bulb of sea onion Squill	Tincture or powder	Used as a diuretic to stimulate secretary organs. Unpredictable effect if used as an emetic or cathartic
Semicupium[1627] *Coxeluvium*	Hip bath	-	Used to ease spasmodic pelvic conditions with the intention of producing diaphoresis.
Sennae[1628]	Tincture of senna	Tincture	A gentle cathartic used to treat fever.

[1622] F. Gorgas, *Dental Medicine: A Manual of Dental Materia Medica and Therapeutics* (P. Blakiston's Son & Co, Philadelphia, 1901), at <http://chestofbooks.com/health/materia-medica-drugs/Manual-Of-Dental-Materia-Medica-And-Therapeutics/Creta-Praeparata-Prepared-Chalk-Precipitated-Chalk-Carbo.html> accessed 20 April 2009; Dunglison, *Medical Lexicon*, p. 659.
[1623] Felter and Lloyd, *King's American Dispensatory: Sassafras*, at <http://www.henriettesherbal.com/eclectic/kings/sassafras.html> accessed 14 April 2009.
[1624] Felter and Lloyd, *King's American Dispensatory: Scammonium*, at <http://www.henriettesherbal.com/eclectic/kings/convolvulus-scam.html> accessed 11 April 2009.
[1625] Dunglison, *Medical Lexicon*, p. 671.
[1626] Risse, *Hospital Life*, p. 381; Felter and Lloyd, *King's American Dispensary*: *Scilla*, at <http://www.henriettesherbal.com/eclectic/kings/urginea-mari.html> accessed 18 September 2007.
[1627] Scudder, *The American Eclectic Materia Medica and Therapeutics: Topical Diaphoretics*, at < http://www.henriettesherbal.com/eclectic/scudder1898/topical-diaphoretics.html> accessed 21 January 2010.
[1628] Felter and Lloyd, *King's American Dispensatory: Senna*, at <http://www.henriettesherbal.com/eclectic/kings/cassia_tinc.html> accessed 21 May 2009.

Setaceum[1629]	Seton Fonticulus	-	A long strip of cotton or silk is threaded through a needle, which is passed through a fold in the skin. Each day the material is moved through the skin with the aim of keeping the wound open
Sinapis album[1630] *Sinapis nigra*[1631]	White mustard Black mustard	Powder, poultice, plaster or bath	Used as a rubifacient poultice or plaster to relieve inflammation or pain, or the seeds are swallowed (either whole or as a mixture) to promote purging of the bowels.
Sodae carbonus[1632] *Sodii Carbonus*	Carbonate of soda	Crystals or powder	Generally used to treat skin conditions, and to make bicarbonate of soda, but occasionally used internally as an irritating cathartic.
Sodae et potassae tartras[1633]	Tartrate of soda and potash	Powder or solution	A mild cathartic, generally used as a draught to treat delicate or weakened patients (most commonly administered in the form of Seidlitz powders).
Sodium sulphate	Natrum sulph.	Pill	Homeopathic treatment for asthma and headache.
Solution alumen saturate[1634]	Saturated solution of alum	Solution	Astringent. Used to control haemorrhage.
Solution morphine acetate[1635]	Morphine salts	Solution	Anodyne. To relieve pain and sedate, particularly for restless patients.

[1629] Dunglison, *Medical Lexicon*, p. 681; Cocks, *A Concise Treatment of Operative Surgery*, p. 23 (see illustration of the insertion of a seton on plate 3).
[1630] Ellingwood, *The American Materia Medica: Sinapis*, at <http://www.henriettesherbal.com/eclectic/ellingwood/ sinapis.html> accessed 30 October 2006.
[1631] Remington and Wood, *The Dispensatory of the United States of America: Sinapis Nigra*, via <http://www.henriettesherbal.com/eclectic/usdisp/brassica-nigr.html> accessed on 30 October 2006.
[1632] *British Pharmaceutical Codex: Sodii Carbonas*, at <http://www.henriettesherbal.com/eclectic/bpc1911/sodium-carb.html > accessed 18 February 2009.
[1633] Scudder, *The American Eclectic Materia Medica and Therapeutics: Sodae et Potassae Tartrus*, at <http://www.henriettesherbal.com/eclectic/scudder1898/soda-potas.html> accessed 2 November 2009.
[1634] Wood, *A Treatise on Therapeutics: Alum*, at <http://chestofbooks.com/ health/materia-medica-drugs/Treatise-Therapeutics-Pharmacology-Materia-Medica-Vol1/Alum-Alumen-Part-3.html> accessed 14 May 2009.

Solutionis potassae arsenum[1636]	Fowler's solution Arsenical solution	Solution	Acts by irritating the mucous membranes of the gastrointestinal and bronchial systems. Small doses used to treat a wide range of complaints, including heart, respiratory, and gastrointestinal complaints, diabetes and fevers. Toxic in larger doses.
Spirit of wine[1637] *Ethylic alcohol*	Alcohol	Solution	Stimulant of the nervous system, used internally only in very small doses. Used to preserve anatomical preparations and as a solvent.
Spiritus aetheris nitrosi[1638]	Spirit of nitrous ether	Solution	Diuretic. Lowers the pulse and temperature, and stimulates secretions from the skin and kidneys.
Spiritus aetheris sulphuricus[1639]	Spirit of sulphuric ether	Solution (often inhaled)	Powerful stimulant, narcotic and antispasmodic. Used to treat cramps in the stomach and spasms of the respiratory system. Applied externally to relieve muscular pains and burns.
Spiritus ammoniae aromaticus[1640]	Aromatic spirits of ammonia	Solution	Stimulant. Used in cases of great weakness, particularly when attended with symptoms of the heart or hysteria.
Spiritus juniperi compositus[1641]	Compound spirit of Juniper	Solution	Used in cases of dropsy as a diuretic.

[1635] G. Hamilton and T. Baskett, 'In the Arms of Morpheus: The Development of Morphine for Postoperative Pain Relief', *Canadian Journal of Anaesthsia,* 47 (2000), p. 369; Petersen, *Materia Medica: Part I*, pp. 107-108.
[1636] Potter, *A Compend of Materia Medica: Arsenum*, at <http://www.henriettesherbal.com/eclectic/potter-comp/arsenum.html> accessed 14 April 2009
[1637] Ellingwood, *The American Materia Medica: The Alcohols*, at <http://www.henriettesherbal.com/eclectic/ellingwood/alcohol.html> accessed 30 October 2006.
[1638] Scudder, *The American Eclectic Materia Medica: Spiritus Aetheris Nitrosi*, at <http://www.henriettesherbal.com/eclectic/scudder1898/aetheris_spir_seda.html> accessed 14 April 2009; Ellingwood, *The American Materia Medica: Spiritus Aetheris Nitrosi*, at <http://www.henriettesherbal.com/eclectic/ellingwood/nitrous-ether.html> accessed 30 October 2006.
[1639] Murray, *A System of Materia Medica and Pharmacy*, p. 147.
[1640] Petersen, *Materia Medica: Ammonia*, at <http://www.henriettesherbal.com/eclectic/petersen/ammonium.html> accessed 11 May 2009; Potter, *A Compend of Materia Medica: Ammonium*, at <http://www.henriettesherbal.com/eclectic/potter-comp/ammonium.html> accessed 11 May 2009.
[1641] Remington and Wood, *The Dispensatory of the United States of America: Spiritus Juniperi*, at <http://www.henriettesherbal.com/eclectic/ usdisp/juniperus_spir.html > accessed 15 November 2009.

Strychnina[1642]	Strychnine	Powder or pill	Tonic. Used in very small doses in cases of paralysis, where increased blood flow to the spinal cord will assist recovery. Larger doses are fatal.
Sulphur baths[1643]	Sulfur bath	Bath	A warm water bath, to which has been added potassium sulphate. Used to treat skin conditions such as leprosy.
Suma *Pfaffia paniculata*	Brazilian ginseng	Tonic	Used as a tonic to energise and relieve debility.
Tinctura cardamomi composita[1644]	Compound tincture of cardamom	Tincture	Carminative or aromatic. Used to treat gastric conditions such as colic and flatulence, or added as an aromatic to other medicines.
Tinctura ferri muriatis ***Tinctura ferri chloridi***[1645]	Tincture of muriate of iron	Solution	Tonic, astringent and diuretic. Used to treat conditions of the urinary organs.
Tinctura opii[1646]	Opium Laudanum	Tincture	Anodyne. Used to relieve pain and sedate.
Tinctura opii ammoniata[1647]	Ammoniated tincture of opium	Tincture	Anodyne. Used to treat coughs, diarrhoea, gastrointestinal pains and to encourage sleep.

[1642] Felter and Lloyd, *King's American Dispensatory: Strychnina*, at <http://www.henriettesherbal.com/eclectic/kings/strychnos-nux_strych.html> accessed 18 April 2009.
[1643] B. Harmer and V. Henderson, *Textbook of the Principles and Practice of Nursing (5th ed.)*, (New York, Macmillan, 1955), p. 623.
[1644] Felter and Lloyd, *King's American Dispensatory: Tinctura Cardamomi Composita*, at <http://www.henriettesherbal.com/eclectic/kings/elettaria-card_tinc.html> accessed 27 March 2009.
[1645] Scudder, *Specific Medications: Tinctura Ferri Chloridi*, at <http://www.henriettesherbal.com/eclectic/scudder1898/ferrum-chlo_tinc.html> accessed 20 April 2009.
[1646] Pearn, Petrie and Petrie, 'An Early Australian Pharmacopoeia', p. 633; Risse, *Hospital Life*, p. 379; Tooth, *Human and Heroic*, p. 20.
[1647] Felter and Lloyd, *King's American Dispensatory: Tinctura Opii Camphorae*, at <http://www.henriettesherbal.com/eclectic/kings/papaver-somn_tinc2.html> accessed 15 June 2009.

Tolutani[1648]	Balsam Tolu	Tincture or syrup	Stimulant - expectorant and antiseptic. Used in respiratory and bronchial conditions, and externally to treat wounds and skin conditions.
Unguenta adipis suilla et gum leaves	Lard and gum leaves	Ointment	Used to heal chronic ulcers.
Unguenta astringent[1649]	Astringent ointment	Ointment	Astringent ointment which decreases secretions of the skin.
Unguenta hydrargyri[1650]	Blue ointment	Ointment	Used to treat skin diseases. Comprised of mercury, lard and suet.
Unguenta hydrargyri nitrate[1651]	Citrine ointment Red precipitate	Ointment	Used to treat skin diseases. Comprised of mercury, nitric acid and lard.
Unguenta lapis calaminaris[1652]	Calamine Carbonate of zinc (impure)	Ointment	Tonic. Used to treat skin conditions.
Unguenta oxidi zinci[1653]	Ointment of oxide of zinc	Ointment	Used to relieve skin irritations. Comprised of oxide of zinc and petrolatum.
Unguenta scilla et gum leaves[1654]	Bulb of sea onion and gum leaves	Ointment	Applied to the chest to relieve 'chest dullness'.

[1648] Ellingwood, *The American Materia Medica: Tolu*, at <http://www.henriettesherbal.com/eclectic/ellingwood/toluifera-bals.html> accessed 21 January 2010.
[1649] Petersen, *Materia Medica: Part I*, p. 8.
[1650] Potter, *A Compend of Materia Medica: Hydrargum*, at <http://www.henriettesherbal.com/eclectic/potter-comp/hydrargyrum.html> accessed 30 October 2006.
[1651] Potter, *A Compend of Materia Medica: Hydrargum*, at <http://www.henriettesherbal.com/eclectic/potter-comp/hydrargyrum.html> accessed 30 October 2006.
[1652] Dunglison, *Medical Lexicon*, p. 123.
[1653] J. Remington, 'Petrolatum in the Officinal Ointments', *American Journal of Pharmacy*, 55 (1883), at <http://www.henriettesherbal.com/eclectic/journals/ajp1883/10-petrolatum.html> accessed 30 October 2006.
[1654] Potter, *A Compend of Materia Medica: Eucalyptus*, at <http://www.henriettesherbal.com/eclectic/potter-comp/eucalyptus.html> accessed 30 October 2006.

Scillae and eucalyptus globulus			
Unguenta simplex[1655]	Simple ointment	Ointment	Lard and yellow wax melted together, cooled and applied to ulcers, blisters and other skin conditions.
Unguenta tartarized antimonii et adipis scilla	Ointment of tartar emetic and squill	Ointment	See *Antimonii tartarized*.
Venesectio[1656]	Blood-letting (phlebotomy)	-	Used to restore the balance of humors in the body by reducing inflammation through slowing the pulse and circulation.
Vinum colchici seminis[1657]	Wine of Colchicum Seed	Solution	Stimulating diuretic. Used as part of the treatment for acute attacks of rheumatism, gout or other neuralgic pain. See also *Colchici*.
Vinum ferri[1658]	Wine of iron	Solution	Tartarated iron dissolved in sherry. Used to treat diarrhoea and cases of worms, particularly in children.
Vinum ipecacuanhae[1659]	Wine of Ipecac	Solution	Emetic. Sometimes preferred to *Ipecacuanha* for infants or the debilitated. See also *Pulveris ipecacuanhe comp.*
Vinum opii[1660]	Wine of opium Sydenham's laudanum	Solution	Anodyne. Opium, cinnamon, cloves and white wine is combined and used to relieve pain. Also used to contract inflamed vessels in the

[1655] Felter and Lloyd, *King's American Dispensatory: Unguentum*, at <http://www.henriettesherbal.com/eclectic/kings/unguentum.html> accessed 18 April 2009.
[1656] R. Porter, *The Greatest Benefit to Mankind: A Medical History of Humanity from Antiquity to the Present* (Fonatana Press, London, 1999), pp. 75-77.
[1657] Felter and Lloyd, *King's American Dispensary: Vinum Colchici Seminis*, at <http://www.henriettesherbal.com/eclectic/kings/colchicum_vinu.html> accessed 26 September 2007.
[1658] H. Draper, *Manual of the Medicinal Preparations of Iron* (Fannin and Co., Dublin, 1864), p. 118; C. Phillips, H. Piffard and L. Johnson, *Materia Medica and Therapeutics* (W. Wood & Co., New York, 1882), p. 179.
[1659] Felter and Lloyd, *King's American Dispensatory: Vinum Ipecacianhae*, at <http://www.henriettesherbal.com/eclectic/kings/cephaelis_vinu.html> accessed 30 August 2007.
[1660] Felter and Lloyd, *King's American Dispensatory: Vinum Opii*, at <http://www.henriettesherbal.com/eclectic/kings/papaver-somn_vinu.html> accessed 27 July 2009.

			eye.
Vinum rhei[1661]	Wine of rhubarb	Solution	A mild stimulative laxative.
Yellow soap and water	Resin soap and water	Solution	Yellow soap contains resin, and is syringed into the ear to clean the canal.
Zinci sulphas[1662]	Sulphate of zinc	Solution	Astringent. Used externally in cases of ophthalmia and ulceration, and internally as a purgative in instances of poisoning, and for other conditions such as epilepsy, hysteria and dysentery.
Zinziber[1663] *Zinziber officinale*	Ginger	Powder, pill or tincture	Tonic. Used as a weak gastrointestinal remedy to relieve pain and stimulate.

[1661] Dunglison, *Medical Lexicon*, p. 791.
[1662] Gorgas, *Dental Medicine: Zinci Sulphas*, at <http://chestofbooks.com/health/materia-medica-drugs/Manual-Of-Dental-Materia-Medica-And-Therapeutics/Zinci-Sulphas-Sulphate-Of-Zinc.html> accessed 9 July 2009.
[1663] Risse, *Hospital Life*, p. 384, p. 144.

Bibliography

Manuscripts

Decisions of the Nineteenth Century Tasmanian Superior Courts: R. v. Minnighan (Division of Law, Macquarie University and the School of History and Classics, University of Tasmania), at <http://www.law.mq.edu.au/sctas/html/1841cases/RvMinnighan,1841.htm> accessed 25 May 2010.

St Bartholomew's Hospital Archives and Museum, St Bartholomew's Hospital, *Medical and Surgical Case Notes of Edward Latham Ormerod: Disease of the Central Nervous System, Kidneys, Abdominal and Infectious Skin Diseases* (SBHB/MR/16/6), (1842-1848).

National Archives, *Admiralty and Predecessors, Office of the Director General of the Medical Department of the Navy and Predecessors, Service Registers and Registers of Deaths and Injuries: Case Book, Royal Naval Hospital, Bermuda* (ADM 104/98), (12 September 1832 – 4 May 1836).

Tasmanian Archive and Heritage Office, *Colonial Secretary's Office: General Correspondence* (CSO 24/47/1615).

Tasmanian Archive and Heritage Office, *Colonial Secretary's Office: General Correspondence* (CSO 1/83/1838).

Tasmanian Archive and Heritage Office, *Conduct Registers of Male Prisoners Arriving in the Period of the Probation System* (CON 33/1).

Tasmanian Archive and Heritage Office, *Description Lists of Male Convicts* (CON 18/1).

Tasmanian Archive and Heritage Office, *Governor's Office: Governor's Duplicate Despatches Received by the Colonial Office* (GO 33/64).

Tasmanian Archive and Heritage Office, *Public Works Department: Plans, Architectural Drawings, Elevations and Sections of Public Buildings (Plan of New Norfolk Invalid Hospital and Lunatic Asylum - proposed additions by R. Kelsall*; *Ground Plan and Elevations)*, (PWD 266/1/1432).

Tasmanian Archive and Heritage Office, *Royal Derwent Hospital: Patient Case Notes* (HSD 246/1/1 [Male Physical, vol. 2]; HSD 246/1/4 [Male Physical, vol. 8]; HSD 246/1/6 [Male Physical, vol. 10]).

Official Publications

Bigge, J., *Report of the Commissioner of Inquiry, on the State of Agriculture and Trade in the Colony of New South Wales* (1966 facsimile of original, published by The House of Commons, London, 1823).

Burns, J., 'Report of the Medical Officer of the Hulks in Woolwich' in *Reports from Commissioners: Convict Prisoners, Military Prisons* (George E. Eyre and William Spottiswoode, London, 1854).

Historical Records of Australia: Series IV, Legal Papers, (Library Committee of the Commonwealth Parliament, Sydney, 1922).

House of Lords Sessional Papers: Tables of the Revenue, Population, Commerce, &c. of the United Kingdom and its Dependencies (William Clowes and Sons, London, 1835).

International Statistical Classification of Diseases and Related Health Problems (2nd ed., World Health Organisation, Geneva, 2004).

Jebb, J. and I. Whitty, 'Report of the Directors of Convict Prisons on the Discipline and Management of the Hulk Establishment' in *Reports from Commissioners: Convict Prisoners, Military Prisons* (George E. Eyre and William Spottiswoode, London, 1854).

Registrar General of England and Wales, *First Annual Report* (London, 1839) in *International Statistical Classification of Diseases and Related Health Problems* (2nd ed., World Health Organisation, Geneva, 2004).

House of Lords, 'Report from the Select Committee on Anatomy', *House of Lords: The Sessional Papers, 1801-1833* (Oxford University Press, Oxford, 1829).

Reports from Commissioners: Convict Prisoners, Military Prisons (George E. Eyre and William Spottiswoode, London, 1854).

State Library of Tasmania, *Royal Commission on the State of the Lunatic Asylum in Tasmania: Report of the Commissioners, with Evidence Taken, and Other Documents* (Government Printers, Hobart, 1883).

State Library of Tasmania, *Statistical Returns of Van Diemen's Land* (Government Printers, Hobart, 1847).

State Library of Tasmania, *Tasmanian Convict Department: Instructions for the Management of the Convict Hospitals* (Government Printers, Hobart, 1845).Walpole, J., 'Report of the Chaplain of the *Stirling Castle* Hulk at Portsmouth' in *Reports from Commissioners: Convict Prisoners, Military Prisons* (George E. Eyre and William Spottiswoode, London, 1854).

Newspapers

Colonial Times.

Courier.

Launceston Advertiser.

The Times.

Primary Sources

Aikin, J., *Thoughts on Hospitals* (Joseph Johnson, London, 1771).

Allan, R., *A System of Pathological & Operative Surgery, Founded on Anatomy* (vol. 1-3, Edinburgh University Press, Edinburgh, 1821).

Andrew, T., *A Cyclopaedia of Domestic Medicine and Surgery* (Blackie and Sons, Glasgow, 1842).

Bischoff, J., *Sketch of the History of Van Diemen's Land* (John Richardson, London, 1832).

Bell, J. and C. Bell, *The Anatomy and Physiology of the Human Body* (7th ed., Longman, Rees, Orme, Brown and Green, London, 1829).

Beasley, H., *The Pocket Formulary, and Synopsis of British and Foreign Pharmacopoeias* (5th ed., John Churchill, London, 1851).

Campbell, R., *London Tradesmen, being a Compendious View of all the Trades, Professions, Arts, both Liberal and Mechanic, now Practised in the Cities London and Westminster* (T. Gardner, London, 1747).

Castles T. (ed.), *A Manual of Surgery* (3rd ed., E. Cox, London, 1831).

Chapman, N., *Elements of Therapeutics and Materia Medica* (6th ed., vols. 1-2, Carey & Lea, Philadelphia, 1831).

Cheyne, J., 'Medical Report on the Feigned Diseases of Soldiers' in *The Dublin Hospital Reports and Communications in Medicine and Surgery* (Hodges and M'Arthur, Dublin, 1827).

Clark, J., *A Treatise on Pulmonary Phthisis* (Carey, Lea and Blanchard, Philadelphia, 1835).

Cocks, W., *A Concise Treatise of Operative Surgery, Describing the Methods Adopted by English, Continental and American Surgeons* (Longman, Rees, Orme, Brown, Green and Longman, London, 1837).

Colles, A., *Practical Observations on Venereal Disease and the Use of Mercury* (A. Waldie, Philadelphia, 1837).

Cook, W., *The Physiomedical Dispensatory* (Self-published, Cincinnati, 1869), also at <http://www.henriettesherbal. com/ eclectic/cook/>, accessed 15 January 2010.

Cooley, A., *The Pharmaceutical Latin Grammar: Being an Easy Introduction to Medical Latin* (R. Groombridge and Sons, London, 1845).

Cooper, S., *A Dictionary of Practical Surgery* (vols. 1-2, Harper and Brothers, New York, 1836).

Cooper, S., *The First Lines of the Practice of Surgery: Designed as an Introduction for Students and a Concise Book of Reference for Practitioners* (*3rd ed* ., Longman and Co., London, 1813).

Cullen, W., *First Lines of the Practice of Physic* (2nd ed., vols. 1-2, Bell & Bradfute, Edinburgh, 1808).

Cullen, W., *First Lines on the Practice of Physic, including Definitions of the Nosology* (vols. 1-2, Bell and Bradfute, Edinburgh, 1816).

Cullen, W., *Clinical Lectures Delivered for John Gregory, February-April 177* (Royal College of Physicians, Edinburgh, 1772).

Dorsey, J., *Elements of Surgery for the Use of Students* (2nd ed., W. Brown and Richard Parker, Philadelphia, 1848).

Draper, H., *Manual of the Medicinal Preparations of Iron* (Fannin and Co., Dublin, 1864).

Dunglison, R., *General Therapeutics, or Principles of Medical Practice* (Carey, Lea and Blanchard, Philadelphia, 1836).

Dunglison, R., *Medical Lexicon: A Dictionary of Medical Science* (6th ed., Lea and Blanchard, Philadelphia, 1846).

Dunglison, R., *New Remedies* (6th ed., Blanchard and Lea, Philadelphia, 1851).

Eberle, J., *A Treatise on the Practice of Medicine* (3rd ed., vols. 1-2, Grigg and Elliott, Philadelphia, 1835).

Eberle, J., *A Treatise on the Practice of Medicine* (4th ed., Grigg and Elliot, Philadelphia, 1838).

Ellis, B., *The Medical Formulary* (5th ed., Carey, Lea and Blanchard, Philadelphia, 1838).

Evanson, R. and H. Maunsell, *A Practical Treatise on the Management and Diseases of Children* (T.V. Marvin, Boston, 1848).

Fergusson, W., *A System of Practical Surgery* (2nd ed., Lea and Blanchard, Philadelphia, 1845).

Forbes, J. (ed.), *The Cyclopaedia of Practical Medicine* (Sherwood, Gilbert and Piper, London, 1834).

Forbes, J., A. Tweedie, J. Connelly and R. Dunglison (eds.), *The Cyclopaedia of Practical Medicine*, (vols. 1-4, Lea and Blanchard, Philadelphia, 1845).

Frick, G., *A Treatise on the Diseases of the Eye* (John Anderson, London, 1826).

Glascock, W., *The Naval Service or Officers' Manual for Every Grade in His Majesty's Ships* (2nd ed., Parker, Furnival, and Parker, London, 1848).

Golding, B., *An Historical Account of St Thomas's Hospital, Southwark* (Longman, Hurst, Rees, Orme, and Browne, London, 1819).

Hall, M., *The Principles of Diagnosis* (2nd ed., D. Appleton and Co., New York, 1834).

Granville, A., *Counter-Irritation, its Principles and Practice* (John Churchill, London, 1838).

Gregory, G., *Elements of the Theory and Practice of Physic* (4th ed., Baldwin and Cradock, London, 1835).

Grey, H., *Anatomy, Descriptive and Surgical* (Longman, Green, Longman, Roberts and Green, London, 1864).

Hodges, R., *Practical Dissections* (John Bartlett, Cambridge, 1858).

Home, E., *Practical Observations on the Treatment of Strictures in the Urethra and Oesophagus* (3rd ed., W. Bulmer and Co., London, 1805).

Hooper, R. and J. Quincy, *A New Medical Dictionary* (E. & R. Parker, M. Carey, and B. Warner, California, 1817).

Hooper, R., *Lexicon Medicum* (4th ed., J. and J. Harper, New York, 1829).

Hooper, R., *The Physician's Vade-mecum: Containing the Anatomy, Physiology, Morbid Appearances &c. of the Human Body* (9th ed., Renshaw and Rush, London, 1820).

Howard, J., *Account of the Principal Lazarettos in Europe with Various Papers Relative to the Plague: Together with further observations on some foreign prisons & hospitals; and additional remarks on the present state of those in Great Britain and Ireland* (T. Cadell, London, 1789).

Jackson, S., *Principles of Medicine, Founded on the Structure and Functions of the Animal Organism* (Carey and Lea, Philadelphia, 1832).

Johnson, A., J. McKenzie, and H. Hartshorne, *Household Companion: The Family Doctor* (The John C. Winston Co., Toronto, 1909), also at <http://chestofbooks.com/health/reference/Household-Companion/The-Family-Doctor>, accessed 20 January 2010.

Johnson, S. and J. Walker, *A Dictionary of the English Language* (2nd ed., William Pickering, London, 1828).

Jones, T., *The Principles and Practice of Ophthalmic Medicine and Surgery* (3rd American ed., Blanchard and Lea, Philadelphia, 1863).

Keeveston, J., *A Manual of the Domestic Practice of Medicine* (Longman, Brown, Green, and Longmans, London, 1856).

Laurie, J., *Elements of Homeopathic Practice or Physic* (Matthew and Houard, Philadelphia, 1852).

Lizars, J., *A System of Anatomical Plates of the Human Body*, (Lizars & James, Edinburgh, 1822).

Lloyd, G., *Botanical Terminology, or Dictionary Explaining the Terms Most Generally Employed in Systematic Botany* (Bell & Bradfute, Edinburgh, 1826).

Lonsdale, E., *A Practical Treatise on Fractures* (John Churchill, London, 1838).

Macaulay, A., *A Dictionary of Medicine Designed for Popular Use* (2nd ed., Adam Black, Edinburgh, 1831).

Mackenzie, W., *Practical Treatise on the Diseases of the Eye* (Longman, Rees, Orme, Brown, Green and Longman, London, 1830).

Maugham, W., *The London Manual of Medical Chemistry* (Whitaker, Treacher and Co., London, 1831).

Middlemore, R., *A Treatise on the Diseases of the Eye and its Appendages* (Longman, Rees, Orme, Brown, Green and Longman, London, 1835).

Miller, L., *Notes of an Exile to Van Diemen's Land* (W. McKinstrey & Co., New York, 1846).

Mitchel, J., *Jail Journal* (The Citizen, New York, 1854).

Murray, J., *A System of Materia Medica and Pharmacy* (2nd ed., John Anderson & Co., Edinburgh, 1813).

Murray, J., *A System of Materia Medica and Pharmacy* (5th ed., Adam Black, Edinburgh, 1828).

Neligan, J. and D. Reese, *Medicines, Their Uses and Modes of Administration* (Harper and Brothers, New York, 1844).

Oliver, D., *First Lines of Physiology: Designed for the Use of Students of Medicine* (Marsh, Capen & Lyon, Boston, 1835).

Ormerod, E., *A Review of the Present State of Cardiac Pathology* (Richards, London, 1864).

Ormerod, E., *On the Pathology and Treatment of Valvular Diseases of the Heart and its Secondary Affectations* (Wilson and Olgivy, London, 1851).

Paine, M., *Medical and Physiological Commentaries* (vols. 1-2, John Churchill, London, 1840).

Paine, M., *The Institutes of Medicine* (8th ed ., Sampson Low, Son & Co., London, 1867).

Pearson, R., *Thesaurus Medicamenum* (3rd ed., London, C. and R. Baldwin, 1804).

Pereira, J., *The Elements of Materia Medica* (Longman, Brown, Green, Orme and Longmans, London, 1839).

Pereira, J., *The Elements of Materia Medica and Therapeutics* (3rd ed., Blanchard and Lea, Philadelphia, 1852).

Petersen, F., *Materia Medica and Clinical Therapeutics* (Self-published, Washington, 1905), also at <http://www.henriettesherbal.com/eclectic/petersen>, accessed 31 October 2006.

Pharmacopoeia of St Bartholomew's Hospital (J.E. Adlard, London, 1869).

Pharmacopoeia of the Middlesex Hospital (publisher unknown, London, 1888).

Phillips, C., H. Piffard and L. Johnson, *Materia Medica and Therapeutics* (W. Wood & Co., New York, 1882).

Phillips, R., *A Translation of the Pharmacopoeia of the Royal College of Physicians of London, 1836* (S. Highly, London, 1837).

Plumbe, S., *A Practical Treatise on Diseases of the Skin* (Thomas and George Underwood, London, 1824).

Porter, G., *The Progress of the Nation in its Various Social and Economic Relations from the Beginning of the Nineteenth Century to the Present Time* (C. Knight and Co., London, 1836).

Potter, S., *A Compendium of Materia Medica, Therapeutics and Prescription Writing* (P. Blakiston, Philadelphia, 1902), also at <http://www.henriettesherbal.com/eclectic/potter-comp>, accessed 8 January 2008.

Quain, J., *The Elements of Anatomy* (4th ed., Taylor and Walton, London, 1837).

Rice, N., *Trials of a Public Benefactor: as Illustrated in the Discovery of Etherization* (Pudney and Russell, New York, 1859).

Robertson, J., *Observations on the Mortality and Physical Management of Children* (Longman, Rees, Orme, Brown, and Green, London, 1827).

Robinson, A., *Cunningham's Text-Book of Anatomy* (5th ed., William Wood and Company, New York, 1818).

Sandford, S., T. Thomson and A. Cunningham (eds.), *The Popular Encyclopaedia, Being a General Dictionary of Arts, Sciences, Literature, Biography, History, and Political Economy* (Blackie & Son, Glasgow, 1837).

Sandford, S., T. Thomson and A. Cunningham (eds.), *The Popular Encyclopaedia, Being a General Dictionary of Arts, Sciences, Literature, Biography, History and Political Economy*, (Blackie and Son, Glasgow, 1841).

Sargent, F., *On Bandaging, and Other Operations of Minor Surgery* (Blanchard and Lea, Philadelphia, 1856).

South, J., *Notes Taken on Lectures given by John Abernethy on Natural and Morbid Anatomy and Physiology delivered by John Abernethy Esq FRS in the Anatomical Theatre at St Bartholomew's Hospital in the Year 1819 & 1820* (vols. 1-4, Library of the Royal College of Surgeons, London, 1821).

Staples, J., *A Few Practical Observations on the Art of Cupping* (Longman, Rees, Orme Brown, Green, and Longman, London, 1835).

Statistical Report on the Sickness, Mortality and Invaliding Among the Troops (W. Clowes and Sons, London, 1838).

Sweetser, W., *A Treatise on Consumption, Embracing an Inquiry into the Influence Exerted upon it by Journeys Voyages and Changes of Climate* (T.H. Carter, Boston, 1836).

Sydenham, T., *The Works of Thomas Sydenham, M.D., on Acute and Chronic Diseases* (G.G.J. and J. Robinson, W. Otridge, S. Hayes and E. Newbery, London, 1788).

Syme, J., *The Principles of Surgery* (5th ed., John Murray, London, 1863).

Taylor, A., *Medical Jurisprudence* (6th ed., John Churchill, London, 1858).

The Pharmacopoeia of the London Hospital (publisher unknown, London, 1868).

Thomas, R., *The Eclectic Practice of Medicine* (Scudder Brothers and Co., Cincinnati, 1907), also at <http://www.henriettesherbal.com/eclectic/thomas>, accessed 3 November 2006.

Thomas, R., *The Modern Practice of Physic* (4th ed ., Longman, Hurst, Orme, Rees and Brown, London, 1813).

Thomson J. (ed.), *The Works of William Cullen, M.D.* (William Blackwood, Edinburgh, 1827).

Thomson, A., *Elements of Materia Medica and Therapeutics* (Longman, Rees, Orme, Brown, Green and Longman, London, 1833).

Thomson, A., *The London Dispensatory* (Longman, Rees, Orme, Brown, Green and Longman London, 1815).

Trollope, A., *The West Indies and the Spanish Main* (Harper and Brothers, New York, 1860).

Turner, E., *Elements of Chemistry* (2nd ed., John Griggs, Philadelphia, 1829).

Verrill, A., *The Bermuda Islands* (Self-published, Connecticut, 1902).

Widowson, H., *Present State of Van Diemen's Land, comprising an Account of its Agricultural Capabilities with Observations on the Present State of Farming* (S. Robinson, London, 1829).

Wilson, E., *A System of Human Anatomy, General and Special* (American ed., Lea and Blanchard, Philadelphia, 1843).

Wistar, C. and W. Horner, *A System of Anatomy for the Use of Students of Medicine* (6th ed., Carey, Lea & Blanchard, Philadelphia, 1835).

Withering, W., *An Account of the Foxglove, and Some of its Medicinal Uses* (G.G.J. and J. Robinson, London, 1785).

Wood, *A Treatise on Therapeutics, and Pharmacology or Materia Medica* (J.B.Lippincott & Co, Philadelphia, 1867), at <http://chestofbooks.com/health/ materia-medica-drugs/Treatise-Therapeutics-Pharmacology-Materia-Medica-Vol2/>, accessed 20 April 2009.

Wood, G., *Treatise on the Practice of Medicine* (2nd ed., Grigg, Elliot and Co., Philadelphia, 1849).

Secondary Sources

A Correspondent, 'Bodies for Dissection', *British Medical Journal*, 2 (1847), pp. 379.

A Correspondent, 'The Clinical Nomenclature of Disease and Perignosis', *British Medical Journal*, 1 (1870), pp. 586-587.

Abel-Smith, B., *The Hospitals: A Study in Social Administration in England and Wales*, (Heinemann, London, 1964).

Ackerknecht, E., Medicine at the Paris Hospital, 1794-1848 (The Johns Hopkins Press, Maryland, 1967).

Alter, G. and A. Carmichael, 'Classifying the Dead: Toward a History of the Registration of Causes of Death', *Journal of the History of Medicine and Allied Sciences*, 2 (1999), pp. 114-132.

Anderson, M. (ed.), *British Population History from the Black Death to the Present Day* (University of Cambridge, Cambridge, 1993).

Anderson, W., *The Cultivation of Whiteness: Science, Health and Racial Destiny in Australia* (2nd ed., Melbourne University Press, Melbourne, 2005).

Andrews, J. and A. Scull, *Customers and Patrons of the Mad-Trade: The Management of Lunacy in Eighteenth Century London* (University of California Press, Berkeley, 2003).

Andrews, J., 'A Respectable Mad-Doctor? Dr Richard Hale, F.R.S. (1670-1728), *Notes and Records of the Royal Society of London*, 44 (1990), pp. 169-203.

Andrews, J., 'Case Notes, Case Histories and the Patient's Experience of Insanity at Gartnaval Royal Asylum, Glasgow, in the Nineteenth Century', *Social History of Medicine*, 11 (1998), pp. 255-281.

Application of the International Classification of Disease to Neurology (2nd ed., World Health Organisation, Geneva, 1997).

Australian Dictionary of Biography (vols. 1-17, Melbourne University Press, Melbourne, 1967).

Australian Medical Association, *Festschrift for Kenneth Fitzpatrick Russell* (Queensbury Hill Press, Victoria, 1978).

Bailey, V. (ed.), *Policing and Punishment in Nineteenth Century Britain* (Croom Helm, London, 1981).

Barnard, J., 'Observations on the Statistics of Van Diemen's Land for 1849: Compiled from Official Records in the Colonial Secretary's Office', *Report of the Royal Society of Van Diemen's Land* (1852).

Barrett, N., 'The Contribution of Australians to Medical Knowledge', *Medical History*, 11 (1967), pp. 321-333.

Barry, J. and C. Jones (eds.), *Medicine and Charity Before the Welfare State* (Routledge, London, 1991).

Bartlett, C. and G. Smith, 'A "Species of Milito-Nautico-Guerilla-Plundering Warfare"' in Flavell, J. and S. Conway (eds.), *Britain and America go to War: The Impact of War and Warfare in Anglo-America, 1754-1815* (University of Florida Press, Gainesville, 2004).

Bates, A., "Indecent and Demoralising Representations': Public Anatomy Museums in Mid-Victorian England', *Medical History*, 52 (2008), pp. 1-22.

Beasley, H., *The Pocket Formulary, and Synopsis of British and Foreign Pharmacopoeias* (5th ed., John Churchill, London, 1851).

Beisaw, A. and J. Gibb (eds.), *The Archaeology of Institutional Life* (The University of Alabama Press, Alabama, 2009).

Bell, J. and C. Bell, *The Anatomy and Physiology of the Human Body* (7th ed., Longman, Rees, Orme, Brown and Green, London, 1829).Berkenkotter, C., *Patient Tales: Case Histories*

and the Uses of Narratives in Psychiatry (University of South Carolina Press, South Carolina, 2008).

Biddle, J., *Review of Materia Medica, for the Use of Students* (Lindsay and Blakiston, Philadelphia, 1852).

Bischoff, J., *Sketch of the History of Van Diemen's Land* (John Richardson, London, 1832).

Black, N., *Walking London's Medical History* (Royal Society of Medicine, London, 2006).

'Bodies for Dissection in Dublin in 1818', *British Medical Journal*, 1 (1943), p. 74.

Borsay, A. and P. Shapely (eds.), *Medicine, Charity and Mutual Aid: The Consumption of Health and Welfare in Britain, 1550-1950* (Ashgate Publishing, Aldershot, 2007).

Borsay, P., *The English Urban Renaissance: Culture and Society in the Provincial Town, 1660-1770* (Oxford University Press, Oxford, 1989).

Bowden, C., 'The Blind, the Paralytic, the Aged and the Destitute': The New Norfolk Colonial Hospital in Van Diemen's Land' (unpublished Bachelor of Arts (Honours) Thesis, Department of History, University of Tasmania, Hobart, 2007).

Boyce, J., *Van Diemen's Land* (Black Inc., Melbourne, 2009).

Bradley, J. and H. Maxwell-Stewart, 'Embodied Explorations: Investigating Convict Tattoos and the Transportation System' in Duffield, I. and J. Bradley (eds.), *Representing Convicts: New Perspectives on Convict Forced Labour Migration* (Leicester University Press, Leicester, 1997).

Branch-Johnson, W., *The English Prison Hulks* (Christopher Johnson, London, 1957).

Brand, I. and M. Staniforth, 'Care and Control: Female Convict Transportation Voyages to Van Diemen's Land, 1818-1853', *The Great Circle*, 16 (1994), pp. 23-42.

Brockbank, W., 'Old Anatomical Theatres and What Took Place Therein', *Medical History*, 12 (1968), pp. 371-384.

Brown, J., *Poverty is Not a Crime: The Development of Social Services in Tasmania, 1803-1900* (Tasmanian Historical Research Association, Hobart, 1972).

Brundage, A., *The Making of the New Poor Law: The Politics of Inquiry, Enactment and Implementation, 1832-1839* (Rutgers University Press, New Jersey, 1978).

Brunton, T., *A Text-Book of Pharmacology, Therapeutics and Materia-Medica* (Spottiswoode & Co, London, 1885), also at <http://chestofbooks.com/health/ materia-medica-drugs/Pharmacology-Therapeutics-Drugs>, accessed 21 May 2009.

Bryant, B., K. Knights and E. Salerno, *Pharmacology for Health Professionals* (2nd ed., Mosby Elsevier, Sydney, 2006).

Buer, M., *Health, Wealth and Population in the Early Days of the Industrial Revolution* (G. Routledge and Sons, London, 1926).

Burnham, J., 'Psychotic Delusions as a Key to Historical Cultures: Tasmania, 1830-1940', *Journal of Social History*, 13 (1980), pp. 368-383.

Burnham, J., 'The Royal Derwent Hospital in Tasmania: Historical Perspectives on the Meaning of Community Psychiatry', *Australian and New Zealand Journal of Psychiatry*, 9 (1975), pp. 163-168.

Burrell, S. and H. Gill, 'The Liverpool Cholera Epidemic of 1832 and Anatomical Dissection – Medical Mistrust and Civil Unrest', *Journal of the History of Medicine and Allied Sciences*, 60 (2005), pp. 478-498.

Burton, H., 'On a Remarkable Effect upon the Human Gums Produced by the Absorption of Lead', *The Medico-Chirurgical Review and Journal of Practical Medicine*, 34 (1841), pp. 13-16.

Burwick, F., 'Joanna Baillie, Matthew Baillie and the Pathology of their Passions' in Crochunis, T. (ed.), *Joanna Baillie, Romantic Dramatist: Critical Essays* (Routledge, London, 2004).

Bynum, W. and R. Porter (eds.), *Companion Encyclopaedia of the History of Medicine* (Routledge, London, 1993).

Bynum, W., *Science and the Practice of Medicine in the Nineteenth Century* (Cambridge University Press, Cambridge, 1996).

Byrne, J., 'Reflections on Uterine Pathology', *The Medical Record*, 3 (1868-1869), pp. 25-28.

Campbell, C., *The Intolerable Hulks: British Shipboard Confinement, 1776-1857* (Heritage Books, Maryland, 1994).

Caring for Convicts and the Community: A History of Parramatta Hospital (Cumberland Area Health Service, Westmead, 1988).

Carlin, M., 'Medieval English Hospitals' in Granshaw, L. and R. Porter (eds.), *The Hospital in History* (Routledge, London, 1989).

Castles T. (ed.), *A Manual of Surgery* (3rd ed., E. Cox, London, 1831).

Cavallo, S., 'Charity, Power and Patronage in Eighteenth Century Italian Hospitals: The Case of Turin' in Granshaw, L. and R. Porter (eds.), *The Hospital in History* (Routledge, London, 1989).

Chapman, N., *Elements of Therapeutics and Materia Medica* (6th ed., vols. 1-2, Carey & Lea, Philadelphia, 1831).

Cherry, S., 'At the Cutting Edge: Surgery in Norwich in the 18th and 19th Centuries', *The History of Anaesthesia Proceedings*, 30 (2002), pp. 95-102.

Cherry, S., 'The Hospitals and Population Growth: The Voluntary General Hospitals, Mortality and Local Populations in the English Provinces in the Eighteenth and Early Nineteenth Centuries (Part 1)', *Population Studies*, 34 (1980), pp. 59-75.

Cherry, S., 'The Hospitals and Population Growth: The Voluntary General Hospitals, Mortality and Local Populations in the English Provinces in the Eighteenth and Early Nineteenth Centuries (Part 2)', *Population Studies*, 34 (1980), pp. 251-265.

Cherry, S., 'The Role of a Provincial Hospital: The Norfolk and Norwich Hospital, 1771-1880', *Population Studies*, 26 (1972), pp. 291-306.

Cherry, S., *Medical Services and the Hospitals in Britain, 1860-1939* (Cambridge University Press, Cambridge, 1996).

Chevalier, M., 'Abstract of a Memoir on the Leech Commerce of France', *British and American Medical and Physical Journal*, 1 (1845-1846), p. 217.

Cheyne, J., 'Medical Report on the Feigned Diseases of Soldiers' in *The Dublin Hospital Reports and Communications in Medicine and Surgery* (Hodges and M'Arthur, Dublin, 1827).

Clark, J., *A Treatise on Pulmonary Phthisis* (Carey, Lea and Blanchard, Philadelphia, 1835).

Clark-Kennedy, A., *The London: A Study in the Voluntary Hospital System (1840-1948)*, (vols. 1-2, Pitman Medical, London, 1963).

Cleland, J., 'Morbidity and Mortality in the Convict Settlement at Port Arthur, Tasmania, from 1830-1835', *The Medical Journal of Australia*, 2 (1832), pp. 347-350.

'Clinical Review: Empyema', *The Medical Chirurgical Review*, 25 (1830), p. 449.

Coats, A., 'From 'Floating Tombs' to Foundations: Contributions of Convicts to Naval Dockyards and Ordnance Sites' in Tracy, N. and M. Robson (eds.), *The Age of Sail: The International Annual of the Historic Sailing Ship* (Conway Maritime Press, London, 2003).

Cockayne, E. and N. Stow (eds.), Stutter's Casebook: A Junior Hospital Doctor, 1839-1841 (The Boydell Press, Woodbridge, 2006).

Cocks, W., *A Concise Treatise of Operative Surgery, Describing the Methods Adopted by English, Continental and American Surgeons* (Longman, Rees, Orme, Brown, Green and Longman, London, 1837).

Colles, A., *Practical Observations on Venereal Disease and the Use of Mercury* (A. Waldie, Philadelphia, 1837).

Condrau, F., 'The Institutional Career of Tuberculosis: Social Policy, Medical Institutions and Patients Before World War II' in Henderson, J., P. Horden and A. Pastore (eds.), *The Impact of Hospitals, 300-2000* (Peter Land AG, Bern, 2007).

Cook, W., *The Physiomedical Dispensatory* (Self-published, Cincinnati, 1869), also at <http://www.henriettesherbal. com/ eclectic/cook/>, accessed 15 January 2010.

Cooley, A., *The Pharmaceutical Latin Grammar: Being an Easy Introduction to Medical Latin* (R. Groombridge and Sons, London, 1845).

Cooper, M., 'The Agony – Surgery Before Anaesthesia, The Patient's Perspective' in Richards, P. and P. Ogden (eds.), *Anaesthesia: Awakening the Sleeping Giant* (Myola Publishing, Launceston, 2003).

Cooper, S., *A Dictionary of Practical Surgery* (vols. 1-2, Harper and Brothers, New York, 1836).

Cooper, S., *The First Lines of the Practice of Surgery: Designed as an Introduction for Students and a Concise Book of Reference for Practitioners* (*3rd ed* ., Longman and Co., London, 1813).

Cooter, R. and B. Luckin (eds.), *Accidents in History: Injuries, Fatalities and Society Relations* (Editions Rodopi, Amsterdam, 1997).

Cowen, D., 'The Edinburgh Pharmacopoeia', *Medical History*, 1 (1957), pp. 123-139.

Crabbe, G., *History of Lachlan Park Hospital* (Department of Health Services, Hobart, 1966).

Craig, C., *Launceston General Hospital: First Hundred Years, 1863-1963* (Board of Management of the Launceston General Hospital, Launceston, 1963).

Crellin, J., *Home Medicine: The Newfoundland Experience* (McGill-Queen's University Press, Montreal, 1994).

Crochunis T. (ed.), *Joanna Baillie, Romantic Dramatist: Critical Essays* (Routledge, London, 2004).

Crowther, A. and M. Dupree, 'The Invisible General Practitioner: The Careers of Scottish Medical Students in the Late Nineteenth Century', *Bulletin of the History of Medicine*, 70 (1996), pp. 387-413.

Crowther, W., 'Some Aspects of Medical Practice in Van Diemen's Land, 1825-1839', *The Medical Journal of Australia*, 1 (1935), pp.511-519.

Culbreth, D., *A Manual of Materia Medica and Pharmacology* (Lea Brothers and Co., Philadelphia, 1917), also at <http://chestofbooks.com/health/ materia-medica-drugs/Manual-Pharmacology/index.html>, accessed 11 June 2009.

Cule, J., 'The History of Medicine' in Porter, R. (ed.), *Medicine: A History of Healing* (The Ivy Press Limited, Thailand, 1997).

Cullen, L., *Royal Derwent Hospital, Past to Present, 1936-1976* (Self-published, New Norfolk, 1978).

Cullen, W., *Clinical Lectures Delivered for John Gregory, February-April 177* (Royal College of Physicians, Edinburgh, 1772).

Cullen, W., *First Lines of the Practice of Physic* (2nd ed., vols. 1-2, Bell & Bradfute, Edinburgh, 1808).

Cullen, W., *First Lines on the Practice of Physic, including Definitions of the Nosology* (vols. 1-2, Bell and Bradfute, Edinburgh, 1816).*Cumberland Are Health Service, Caring for Convicts and the*

Community: A History of Parramatta Hospital (Cumberland Area Health Service, Westmead, 1988).

Cummins, C., *A History of Medical Administration in NSW, 1788-1973* (2nd ed., New South Wales Department of Health, North Sydney, 2003).

Cumpston, J., 'Public Health in Australia: Part 1, The First Forty-Two Years', *The Medical Journal of Australia*, 17 (1931), pp. 491-500.

Cumpston, J., 'Public Health in Australia: Part II, the Second Period 1830-1850', *The Medical Journal of Australia*, 1 (1931), pp. 591-597.

Curtain, P., *Death by Migration: Europe's Encounter with the Tropical World in the Nineteenth Century* (Cambridge University Press, Cambridge, 1989).

Curth, L. (ed.), *From Physick to Pharmacology: Five Hundred Years of British Drug Retailing* (Ashgate Publishing, Aldershot, 2006).

Curth, L., *From Physick to Pharmacology: Five Hundred Year of British Drug Retailing* (Ashgate Publishing, Hampshire, 2006).

Dally, A., 'The Development of Western Medical Science' in Porter, R. (ed.), *Medicine: A History of Healing* (The Ivy Press Limited, Thailand, 1997).

Davis, G., *The Cruel Madness of Love: Sex, Syphilis and Psychiatry in Scotland, 1880-1930* (Editions Rodopi, Amsterdam, 2008.

Davis, R., *The Tasmanian Gallows: A Study of Capital Punishment* (Cat & Fiddle Press, Hobart, 1974).

Dick, W., *Encyclopaedia of Practical Receipts and Processes* (Dick and Fitzgerald, New York, 1872), also at <http://chestofbooks.com/reference/Encyclopedia-Of-Practical-Receipts-And-Processes/Lotions-Part-4.html>, accessed 27 July 2009.

Digby, A., "A Human Face to Medicine': Encounters Between Patients and General Practitioners in Britain, 1850-1950', *Medizin Gesellschaft und Geschichte*, 21 (2003), pp. 91-108.

Digby, A., 'Changes in the Asylum: The Case of York, 1777-1815', *The Economic History Review*, 36 (1983), pp. 218-239.

Digby, A., *Madness, Morality and Medicine: A Study of the York Retreat, 1796-1914* (Cambridge University Press, Cambridge, 1985).

Digby, A., *Making a Medical Living: Doctors and Patients in the English Market for Medicine, 1720-1911* (Cambridge University Press, Cambridge, 1994).

Digby, A., *Pauper Palaces*, (Routledge and Kegan Paul, London, 1978).

Digby, A., *The Poor Law in Nineteenth Century England and Wales* (Historical Association, London, 1982).

Dobson, M., *Contours of Death and Disease in Early Modern England* (University of Cambridge, Cambridge, 1997).

Dodson, M., *Disease: The Extraordinary Story Behind History's Deadliest Killers* (Quercus, London, 2007).

Dorsey, J., *Elements of Surgery for the Use of Students* (2nd ed., W. Brown and Richard Parker, Philadelphia, 1848).

Draper, H., *Manual of the Medicinal Preparations of Iron* (Fannin and Co., Dublin, 1864).

Duffield, I. and J. Bradley (eds.), *Representing Convicts: New Perspectives on Convict Forced Labour Migration* (Leicester University Press, Leicester, 1997).

Duke, M., *Development of Medical Techniques: From Leeches to Heart Surgery* (International Universities Press, Connecticut, 1991).

Duncum, B., 'The Development of Hospital Design and Planning' in Poynter, F. (ed.), *The Evolution of Hospitals in Britain*, (Pitman, London, 1964).

Dunglison, R., *General Therapeutics, or Principles of Medical Practice* (Carey, Lea and Blanchard, Philadelphia, 1836).

Dunglison, R., *Medical Lexicon: A Dictionary of Medical Science* (6th ed., Lea and Blanchard, Philadelphia, 1846).

Dunglison, R., *New Remedies* (6th ed., Blanchard and Lea, Philadelphia, 1851).

Dupree, M., 'Family Care and Hospital Care: The 'Sick Poor' in Nineteenth-Century Glasgow', *Social History of Medicine*, 6 (1993), pp. 195-211.

Earnshaw, B., 'The Lame, the Blind, the Mad, the Malingerers: Sick and Disabled Convicts within the Colonial Community', *Journal of the Royal Australian Historical Society*, 81 (1995), pp. 25-38.

Eberle, J., *A Treatise on the Practice of Medicine* (3rd ed., vols. 1-2, Grigg and Elliott, Philadelphia, 1835).

Eberle, J., *A Treatise on the Practice of Medicine* (4th ed., Grigg and Elliot, Philadelphia, 1838).

Edmonds, T., 'On the Laws of Collective Vitality', *The Lancet*, 2 (1835-1835), pp. 5-8.

Edmondston, A., 'A Treatise on the Varieties and Consequences of Ophthalmia, with a Preliminary Inquiry into its Contagious Nature', *The Edinburgh Medical and Surgical Journal*, 3 (1807), pp. 211-220.

Ehrenreich, B. and D. English, *Witches, Midwives, and Nurses: A History of Women Healers* (The Feminist Press at the City University of New York, New York, 1973).

Ellingwood, F., 'The Successful Treatment of Syphilis without Mercury', *Ellingwood's Therapeutist: A Monthly Journal of Direct Therapeutics*, 2 (1908), at <http://www.henriettesherbal.com/eclectic/journals/ elth1908/12-syphilis.html>, accessed 18 September 2007.

Ellingwood, F., *The American Materia Medica* (Self-published, Chicago, 1919), also at <http://www.henriettesherbal. com/ eclectic/ellingwood>, accessed 20 January 2010.

Ellis, B., *The Medical Formulary* (5th ed., Carey, Lea and Blanchard, Philadelphia, 1838).

Ellis, H., *Studies in the Psychology of Sex: Sex in Relation to Society* (vols. 1-6, Plain Label Books, 1927), also at <http://www.gutenberg.org/etext/13615>, accessed 4 March 2010.

Ellis, H., *The Cambridge History of Surgery* (Cambridge University Press, Cambridge, 2009).

Evans, R., *The Fabrication of Virtue: English Prison Architecture, 1750-1840* (Cambridge University Press, Cambridge, 1982).

Evanson, R. and H. Maunsell, *A Practical Treatise on the Management and Diseases of Children* (T.V. Marvin, Boston, 1848).

'External Stimulants', *The Penny Magazine of the Society for the Diffusion of Useful Knowledge*, 519 (1840), pp. 164-176.

Eyler, J., 'Constructing Vital Statistics: Thomas Rowe Edmonds and William Farr, 1835-1845' in Morabia, A. (ed.), *A History of Epidemiological Methods and Concepts* (University Hospital, Geneva, 2004).

Farr, W., 'Vital Statistics: or, the Statistic of Health, Sickness, Diseases and Death' in Wall, R. Glass, D. (ed.), *Mortality in Mid 19th Century Britain: Pioneers of Demography* (Gregg International, Western GermanyFarnborough, 1974).

Fearnley, K., *Royal Derwent Hospital, 1827-1977: Sesqui-Centenary Celebrations* (Self-published, Hobart, 1977).

Felter, H. and J. Lloyd, *King's American Dispensary* (The Ohio Valley Co., Cincinnati, 1898), also at <http://www.henriettesherbal.com/eclectic/kings>, accessed 18 September 2007.

Felter, H., *The Eclectic Materia Medica, Pharmacology and Therapeutics* (JK Scudder, Cincinnati, 1922) at <http://www.henriettesherbal.com/eclectic/felter/>, accessed 28 October 2009.

Fergusson, W., *A System of Practical Surgery* (2nd ed., Lea and Blanchard, Philadelphia, 1845).

Field Officer, 'Excerpt of *Bermuda: A Colony, a Fortress, and a Prison*', *Littell's Living Age*, 53 (1857), pp. 187-188.

Finch, J., *Pills, Potions and Politics: The Formation of the Pharmaceutical Society of Tasmania* (The Pharmaceutical Society of Tasmania, Hobart, 1991).

'First Annual Report of the Registrar-General on Births, Deaths and Marriages in England, in 1837-8', *Journal of the Statistical Society of London*, 2 (1839), pp. 269-274.

Fissell, M., 'The 'Sick and Drooping Poor' in Eighteenth-Century Bristol and its Regions', *The Social History of Medicine*, 2 (1989), pp. 35-58.

Flavell, J. and S. Conway (eds.), *Britain and America go to War: The Impact of War and Warfare in Anglo-America, 1754-1815* (University of Florida Press, Gainesville, 2004).

Forbes, J. (ed.), *The Cyclopaedia of Practical Medicine* (Sherwood, Gilbert and Piper, London, 1834).

Forbes, J., A. Tweedie, J. Connelly and R. Dunglison (eds.), *The Cyclopaedia of Practical Medicine*, (vols. 1-4, Lea and Blanchard, Philadelphia, 1845).

Ford, E., 'Medical Practice in Early Sydney: With Special Reference to the Work and Influence of John White, William Redfern and William Bland', *The Medical Journal of Australia*, 2 (1955), pp. 41-54.

Ford, E., 'Some Early Australian Medical Publications', *Medical History*, 16 (1972), pp. 205-225.

Forrester, J., 'The Origins and Fate of James Currie's Cold Water Treatment', *Medical History*, 44 (2000), pp. 57-74.

Foucault, M., *Birth of the Clinic* (Routledge, London, 2003), (original publication M. Foucault, *Naissance de la Clinique* (Presses Universitaires de France, France, 1963), translated from French in 1973).

Frick, G., *A Treatise on the Diseases of the Eye* (John Anderson, London, 1826).

Gagan, D. and R. Gagan, *For Patients of Moderate Means: a Social History of the Voluntary Public General Hospital in Canada, 1890-1950* (McGill-Queen's University Press, Montreal, 2002).

Gandevia, B., 'Malingering in the Penal Era: Its Epidemiology and Social Implications, with Contemporary Observations by Dr James Stewart' in Australian Medical Association, *Festschrift for Kenneth Fitzpatrick Russell* (Queensbury Hill Press, Victoria, 1978).

Gandevia, B., 'Occupation and Disease in Australia since 1788', *The Medical Journal of Australia*, 22 (1971), pp. 1105-1112.

Gascoigne, J., *The Enlightenment and the Origins of European Australia* (Cambridge University Press, Cambridge, 2005).

Gittins, D., *Madness in its Place: Narratives of Severalls Hospital, 1913-1997* (London, Routledge, 1998).

Glascock, W., *The Naval Service or Officers' Manual for Every Grade in His Majesty's Ships* (2nd ed., Parker, Furnival, and Parker, London, 1848).

Glass, D. (ed.), *Mortality in Mid 19th Century Britain: Pioneers of Demography* (Gregg International, Western Germany, 1974).

Goddard, J., 'The Navy Surgeon's Chest: Surgical Instruments of the Royal Navy during the Napoleonic War', *Journal of the Royal Society of Medicine*, 97 (2004), pp. 191-197.

Golding, B., *An Historical Account of St Thomas's Hospital, Southwark* (Longman, Hurst, Rees, Orme, and Browne, London, 1819).

Goodman, N., 'The Supply of Bodies for Dissection: A Historical Review', *British Medical Journal*, 2 (1944), pp. 807-811.

Gorgas, F., *Dental Medicine: A Manual of Dental Materia Medica and Therapeutics* (P. Blakiston's Son & Co, Philadelphia, 1901), also at <http://chestofbooks.com/health/materia-medica-drugs/Manual-Of-Dental-Materia-Medica-And-Therapeutics/>, accessed 20 April 2009.

Gorsky, M. and S. Sheard (eds.), Financing Medicine: The British Experience Since 1750 (Routledge, London, 2006).

Gorsky, M., J. Mohan and M. Powell, 'British Voluntary Hospitals, 1871–1938: The Geography of Provision and Utilization', *Journal of Historical Geography*, 25 (1999), pp. 462-483.

Gorsky, M., J. Mohan and T. Willis, *Mutualism and Health Care: British Hospital Contributory Schemes in the Twentieth Century* (Manchester University Press, Manchester, 2006).

Gowlland, R., *Troubled Asylum: The History of the Royal Derwent Hospital* (Self-published, New Norfolk, 1981).

Granshaw, L. and R. Porter (eds.), *The Hospital in History* (Routledge, London, 1989).

Granshaw, L., 'The Rise of the Modern Hospital in Britain' in Wear, A. (ed.), *Medicine in Society: Historical Essays* (University of Cambridge, Cambridge, 1992).

Granville, A., *Counter-Irritation, its Principles and Practice* (John Churchill, London, 1838).

Gregory, G., *Elements of the Theory and Practice of Physic* (4th ed., Baldwin and Cradock, London, 1835).

Grey, H., *Anatomy, Descriptive and Surgical* (Longman, Green, Longman, Roberts and Green, London, 1864).

Griffith, G., *Population Problems in the Age of Malthus* (Cambridge University Press, Cambridge, 1926).

Griffith, G., *Population Problems in the Age of Malthus* (Cambridge University Press, Cambridge, 2010)

Griggs, B., *New Green Pharmacy: The Story of Western Herbal Medicine* (Vermilion, London, 1997).

Guha, S., *Health and Population in South Asia from Earliest Times to the Present* (Hurst and Co, London, 2001).

Guy, W., 'An Attempt to Determine the Influence of the Seasons and Weather on Sickness and Mortality', *Journal of the Statistical Society of London*, 6 (1843), pp. 133-150.

Habakkuk, H., 'English Population in the Eighteenth Century', *The Economic History Review*, 6 (1953), pp. 117-133.

Hagger, J., *Australian Colonial Medicine* (Rigby Limited, Adelaide, 1979).

Haines, G., *'The Grains and Threepenn'orths of Pharmacy': Pharmacy in N.S.W. 1788-1976* (Lowden Publishing Co., Kilmore, 1976).

Haines, R., *Life and Death in the Age of Sail: The Passage to Australia* (University of New South Wales Press, Sydney, 2003).

Hall, E., 'Epidemic Diseases of Tasmania', *Transactions of the Epidemic Society of London*, 2 (1867), pp. 69-87.

Hall, M., *The Principles of Diagnosis* (2nd ed., D. Appleton and Co., New York, 1834).

Hamilton, G. and T. Baskett, 'In the Arms of Morpheus: The Development of Morphine for Postoperative Pain Relief', *Canadian Journal of Anaesthesia,* 47 (2000), pp. 367-374.

Hardy, A., 'Diagnosis, Death and Diet: The Case of London, 1750-1909', *Journal of Interdisciplinary History*, 3 (1988), pp. 393-397.

Harmer, B. and V. Henderson, *Textbook of the Principles and Practice of Nursing* (5th ed., New York, Macmillan, 1955).

Harris, B., 'Public Health, Nutrition, and the Decline of Mortality', *Social History of Medicine*, 17 (2004), pp. 279-307.

Harris, B., *The Origins of the British Welfare State: Society, State and Social Welfare in England and Wales, 1800-1945* (Palgrave MacMillan, Hampshire, 2004).

Harvey, C., 'Endemic Fever at Bermuda', *The British Medical Journal*, 2 (1890), pp. 1172-1173.

Hay, D., P. Linebaugh, J. Rule, E. Thompson and C. Winslow (eds.), *Albion's Fatal Tree: Crime and Society in Eighteenth-Century England* (Pantheon Books, New York, 1975).

Heaman, E., *St Mary's: The History of London Teaching Hospital* (McGill-Queen's University Press, Quebec, 2003).

Helleiner, K., 'The Vital Revolution Reconsidered', *The Canadian Journal of Economics and Political Science*, 23 (1957), pp. 1-9.

Henderson, J., P. Horden and A. Pastore (eds.), *The Impact of Hospitals, 300-2000* (Peter Land AG, Bern, 2007).

Henderson, J., *The Renaissance Hospital: Healing the Body and Healing the Soul* (Yale University Press, Connecticut, 2006).

Herr, "Cutting for the Stone': The Ancient Art of Lithotomy', *British Journal of Urology*, 101 (2008), pp. 1214-1216.

Hickie, J., *The Thinkers: A History of the Physicians and the Development of Scientific Medicine at St Vincent's Hospital, Sydney, 1857-1997* (Playwright Publishing, Caringah, 2000).

Hicks, R., *Rum, Regulations and Riches: The Evolution of the Australian Health Care System* (Australian Hospital Association, Sydney, 1981).

Hilton, B., *A Mad, Bad and Dangerous People: England 1783-1846* (Clarendon Press, Oxford, 2006).

Hodges, R., *Practical Dissections* (John Bartlett, Cambridge, 1858).

Hollis-Hallett, C., 'Bermuda's Convict Hulks', *Bermuda Journal of Archaeology and Maritime History*, 2 (1990), pp. 87-104.

Hollis-Hallett, C., *Forty Years of Convict Labour: Bermuda, 1823-1863* (Juniperhill Press, Bermuda, 1999).

Home, E., *Practical Observations on the Treatment of Strictures in the Urethra and Oesophagus* (3rd ed., W. Bulmer and Co., London, 1805).

Hooper, R. and J. Quincy, *A New Medical Dictionary* (E. & R. Parker, M. Carey, and B. Warner, California, 1817).

Hooper, R., *Lexicon Medicum* (4th ed., J. and J. Harper, New York, 1829).

Hooper, R., *The Physician's Vade-mecum: Containing the Anatomy, Physiology, Morbid Appearances &c. of the Human Body* (9th ed., Renshaw and Rush, London, 1820).

Horden, P. and R. Smith (eds.), *The Locus of Care: Families, Communities, Institutions, and the Provision of Welfare Since Antiquity* (Routledge, London, 2003).

Horsman, R., *Frontier Doctor: William Beaumont, America's First Great Medical Scientist* (University of Missouri Press, Colombia, 1996).

Houlbrooke, R., *Death, Religion, and the Family in England, 1480-1790* (Oxford University Press, Oxford, 2000).

Howard, J., *Account of the Principal Lazarettos in Europe with Various Papers Relative to the Plague: Together with further observations on some foreign prisons & hospitals; and additional remarks on the present state of those in Great Britain and Ireland* (T. Cadell, London, 1789).

Humphery, K., 'A New Era of Existence: Convict Transportation and the Authority of the Surgeon in Colonial Australia', *Labour History*, 59 (1990), pp. 59-72.

Hurren, E., *Dying for Victorian Medicine: English Anatomy and its Trade in the Dead Poor, 1834-1929* (Palgrave Macmillan, Basingstoke, 2011).

Ince, J., *The Latin Grammar of Pharmacy* (10th ed., Bailliere, Tindall and Cox, London, 1920).

'Intelligence and Miscellanies: Leeches', *American Journal of Science and Arts*, 16 (1829), p. 394.

Jackson, S., *Principles of Medicine, Founded on the Structure and Functions of the Animal Organism* (Carey and Lea, Philadelphia, 1832).

Jewson, N., 'The Disappearance of the Sick-Man from Medical Cosmology, 1770-1870', *Sociology*, 10 (1976), pp. 225-244.

Johnson, A., J. McKenzie, and H. Hartshorne, *Household Companion: The Family Doctor* (The John C. Winston Co., Toronto, 1909), also at <http://chestofbooks.com/

health/reference/Household-Companion/The-Family-Doctor>, accessed 20 January 2010.

Johnson, S. and J. Walker, *A Dictionary of the English Language* (2nd ed., William Pickering, London, 1828).

Jones, C. and R. Porter (eds.), *Reassessing Foucault: Power, Medicine and the Body* (Routledge, London, 1998).

Jones, T., *The Principles and Practice of Ophthalmic Medicine and Surgery* (3rd American ed., Blanchard and Lea, Philadelphia, 1863).

Jones, W., 'Acute Care Design: Emerging Trends' in Marberry, S. (ed.), *Innovations in Healthcare Design* (John Wiley & Son, United States of America, 1995).

Journal Articles and Other Publications

Karskens, G., 'Death was in his Face: Dying, Burial and Remembrance in Early Sydney', *Labour History*, 74 (1998), pp. 21-39.

Keeveston, J., *A Manual of the Domestic Practice of Medicine* (Longman, Brown, Green, and Longmans, London, 1856).

Kellman, N., 'History of Healthcare Environments' in Marberry, S. (ed.), *Innovations in Healthcare Design* (John Wiley & Son, United States of America, 1995).

Kelly, B., *A Background to the History of Nursing in Tasmania* (Mercury-Walch, Hobart, 1977).

Kennedy, N., 'William Crashaw's Bridge: Bermuda and the Origins of the English Atlantic, 1609-1624' in Rhoden, N. (ed.), *English Atlantics Revisited* (McGill-Queen's University Press, CanadaMontreal, 2007).

Kerr, J., *Design for Convicts: An Account of Design for Convict Establishments in the Australian Colonies During the Transportation Era* (Library of Australian History, Sydney, 1984).

King, S., *Poverty and Welfare in England, 1700-1850: A Regional Perspective* (Manchester University Press, Manchester, 2000).

Kippen, R., 'Diarrhoea, Marasmus, Convulsions: Infant Mortality in Nineteenth-Century Tasmania', *Australian Population Association Eleventh Biennial Conference*, University of New South Wales (2 – 4 October, 2004).

Kisacky, J., 'Restructuring Isolation: Hospital Architecture, Medicine and Disease Prevention', *Bulletin of the History of Medicine*, 79 (2005), pp. 1-49.

Knight, A., *Crime Archive: Burke and Hare* (National Archives, Kew, 2007).

Knott, J., 'Popular Attitudes to Death and Dissection in Early Nineteenth Century Britain: The Anatomy Act and the Poor', *Labour History*, 49 (1985), pp. 1-18.

Krantz, F., *History from Below: Studies in Popular Protest and Popular Ideology* (Blackwell, Oxford, 1988).

Laurie, J., *Elements of Homeopathic Practice or Physic* (Matthew and Houard, Philadelphia, 1852).

Lewis, F., 'The Cost of Convict Transportation from Britain to Australia, 1796-1810', *Economic History Review*, 4 (1988), pp. 507-524.

Linebaugh, P., 'The Tyburn Riot Against the Surgeon' in Hay, D., P. Linebaugh, J. Rule, E. Thompson and C. Winslow (eds.), *Albion's Fatal Tree: Crime and Society in Eighteenth-Century England* (Pantheon Books, New York, 1975).

Lizars, J., *A System of Anatomical Plates of the Human Body*, (Lizars & James, Edinburgh, 1822).

Lloyd, C. and J. Coulter, *Medicine and the Navy, 1200-1900* (E. & S. Livingstone Ltd, Edinburgh, 1963).

Lloyd, C., 'Naval Hospitals' in Poynter, F. (ed.), *The Evolution of Hospitals in Britain* (Pitman, London, 1964).

Lloyd, G., *Botanical Terminology, or Dictionary Explaining the Terms Most Generally Employed in Systematic Botany* (Bell & Bradfute, Edinburgh, 1826).

Lloyd, P., 'A History of Medical Professionalisation in NSW: 1788-1950', *Australian Health Review*, 17 (1994), pp. 14-28.

Lloyd, P., *From Latin to Spanish: Historical Phonology and Morphology of the Spanish Language* (The American Philosophical Society, Pennsylvania, 1987).

Lonsdale, E., *A Practical Treatise on Fractures* (John Churchill, London, 1838).

Loudon, I., 'Deaths in Childbed from the Eighteenth Century to 1935', *Medical History*, 30 (1986), pp. 1-41.

Loudon, I., 'General Practice and Obstetrics: A Brief History', Journal of the Royal Society of Medicine, 101 (2008), pp. 531-535.

Loudon, I., 'The Origins and Growth of the Dispensary Movement in England', *Bulletin of the History of Medicine*, 55 (1981), pp. 322-344.

Löwy, I., 'Beyond the Local;, *The Social History of Medicine*, 20 (2007), pp.465-481.

Macaulay, A., *A Dictionary of Medicine Designed for Popular Use* (2nd ed., Adam Black, Edinburgh, 1831).

MacDonald, F., 'The Infirmary of the Glasgow Town's Hospital, 1733-1800: A Case for Volunteerism?', *Bulletin of the History of Medicine*, 71 (1999), pp. 64-105.

MacDonald, H., 'Procuring Corpses: The English Anatomy Inspectorate, 1842-1858', *Medical History*, 53 (2009), pp. 379-396.

MacDonald, H., 'The Anatomy Inspector and the Government Corpse', *History Australia*, 6 (2009), pp. 40.1-40.17.

MacDonald, H., *Human Remains: Episodes in Human Dissection* (Melbourne University Press, Carlton, 2005).

MacFie, P. and M. Bonet, *Convict Health at Port Arthur and Tasman Peninsula, 1830-1877: The Relationship between Diet, Work, Medical Care and Health* (unpublished paper written for the National Parks and Wildlife Service, Hobart, 1984).

Mackenzie, W., *Practical Treatise on the Diseases of the Eye* (Longman, Rees, Orme, Brown, Green and Longman, London, 1830).

Maisch, J. (ed.), '*Materia Medica* of the New Mexican Pharmacopoeia', *American Journal of Pharmacy*, 57 (1885), also at <http://www.henriettesherbal.com/eclectic/journals/ajp1885/05-mex-mat-med.html>, accessed 23 August 2010.

Marberry, S. (ed.), *Innovations in Healthcare Design* (John Wiley & Son, United States of America, 1995).

Marcus, C. and M. Barnes, *Healing Gardens: Therapeutic Benefits and Design Recommendations* (John Wiley and Sons, Canada, 1999).

Markus, M., *Buildings and Power: Freedom and Control in the Origin of Modern Building Types* (Routledge, London, 2004).

Marland, H., *Medicine and Society in Wakefield and Huddersfield, 1780-1870* (Cambridge University Press, Cambridge, 1987.

Marsh, H., 'Report of the Means Employed in Medical Schools of Great Britain for the Preservation of Subjects for Dissection', *The British Medical Journal*, 2 (1872), p. 412.

Martyr, P., 'No Paradise for Quacks? Nineteenth Century Health Care in Tasmania', *Tasmanian Historical Studies*, 5 (1997), pp. 141-152.

Martyr, P., *Paradise of Quacks: An Alternative History of Medicine in Australia* (Macleay Press, Paddington, 2002).

Mathias, P. (ed.), *Science and Society, 1600-1900* (Cambridge University Press, Cambridge, 1972).

Maugham, W., *The London Manual of Medical Chemistry* (Whitaker, Treacher and Co., London, 1831).

Maxwell, R., 'Henry Mayhew and the Life of the Streets', *The Journal of British Studies*, 17 (1978), pp. 87-105.

Maxwell-Stewart, H., 'Crime and Health: An Introductory View' in Richards, P., B. Valentine and T. Dunning (eds.), *Effecting a Cure: Aspects of Health and Medicine in Launceston* (Myola House of Publishing, Launceston, 2006).

Mazumdar, P., 'Johannes Müller on the Blood, the Lymph, and the Chyle', *Isis*, 66 (1975), pp. 242-253.

McConville, S., *English Local Prisons, 1860-1900: Next Only to Death* (Routledge, London, 1995).

McDonald, J. and R. Shlomowitz, 'Mortality on Convict Voyages to Australia, 1788-1868', *Social Science History*, 13 (1989), pp. 285-313.

McEvoy, A., 'An Ecological Approach to Industrial Health and Safety' in Cooter, R. and B. Luckin (eds.), *Accidents in History: Injuries, Fatalities and Society Relations* (Editions Rodopi, Amsterdam, 1997).

McKeown, T. and R. Brown, 'Medical Evidence Related to English Population Changes in the Eighteenth Century', *Population Studies*, 9 (1955), pp. 119-141.

McKeown, T., *The Modern Rise of Population* (Edward Arnold, London, 1976).

McNeil, D., 'Medical Care aboard Australia-Bound Convict Ships, 1786-1840', *Bulletin of the History of Medicine*, 26 (1952), pp. 117-140.

Medvei, V. and J. Thornton, *Royal Hospital of Saint Bartholomew's 1123-1973* (St Bartholomew's Medical College, London, 1974).

Melling, J. and B. Forsythe (eds.), *Insanity, Institutions and Society, 1800-1914: A Social History of Madness in Comparative Perspective* (Routledge, London, 1999).

Meredith, D. and D. Oxley, 'Contracting Convicts: The Convict Labour Market in Van Diemen's Land 1840-1857', *Australian Economic History Review*, 43 (2005), pp. 45-72.

Merriam-Webster's Dictionary of Synonyms (Merriam Webster, Massachusetts, 1986).

Middlemore, R., *A Treatise on the Diseases of the Eye and its Appendages* (Longman, Rees, Orme, Brown, Green and Longman, London, 1835).

Miller, B. and C. Keane, *Encyclopaedia and Dictionary of Medicine and Nursing* (WB Saunders and Co., Philadelphia, 1972).

Miller, L., *Notes of an Exile to Van Diemen's Land* (W. McKinstrey & Co., New York, 1846).

Mitchel, J., *Jail Journal* (The Citizen, New York, 1854).

Mitchell, E., 'The Convict Establishment', *The Leisure Hour*, reprinted in *Bermuda Journal of Archaeology and Maritime History*, 9 (1997), pp. 120-128.

Mooney, G., B. Luckin, and A. Tanner, 'Patient Pathways: Solving the Problem of Institutional Mortality in London during the Later Nineteenth Century', *Social History of Medicine*, 12 (1999), pp. 227-269.

Moore, N., *The History of St Bartholomew's Hospital* (C. Arthur Pearson Limited, London, 1918).

Moore, W., *The Knife Man: Blood, Body-Snatching and the Birth of Modern Surgery* (Bantam Press, London, 2006).

Morabia, A. (ed.), *A History of Epidemiological Methods and Concepts* (University Hospital, Geneva, 2004).

Morgan, G. and P. Rushton, 'Visible Bodies: Power, Subordination and Identity in the Eighteenth-Century Atlantic World', *Journal of Social History*, 39 (2006), pp. 39-65.

Morris, M., 'A Matron's Honour: The Trials of Alice Gertrude Kenny', *Island Magazine*, 76 (1998), pp. 44-62.

Morris, M., *Invalids, Paupers and Lunatics: Port Arthur, New Norfolk and Other Peninsula Stations* (unpublished paper written for the Port Arthur Historic Site Management Authority, Port Arthur, 2002).

Murray, J., *A System of Materia Medica and Pharmacy* (2nd ed., John Anderson & Co., Edinburgh, 1813).

Murray, J., *A System of Materia Medica and Pharmacy* (5th ed., Adam Black, Edinburgh, 1828).

Neligan, J. and D. Reese, *Medicines, Their Uses and Modes of Administration* (Harper and Brothers, New York, 1844).

Nicholas, S. (ed.), *Convict Workers: Reinterpreting Australia's Past* (Cambridge University Press, Cambridge, 1988).

Nicholas, S., 'The Care and Feeding of Convicts' in Nicholas, S. (ed.), *Convict Workers: Reinterpreting Australia's Past* (Cambridge University Press, Cambridge, 1988).

Nichols, W., "Malingering' and Convict Protest', *Labour History*, 47 (1984), pp. 18-27.

Nowell-Smith, H., 'Nineteenth-Century Narrative Case Histories: An Inquiry into Stylistics and History', *Canadian Bulletin of Medical History*, 12 (1995), pp. 47-67.

Oliver, D., *First Lines of Physiology: Designed for the Use of Students of Medicine* (Marsh, Capen & Lyon, Boston, 1835).

Ormerod, E., *A Review of the Present State of Cardiac Pathology* (Richards, London, 1864).

Ormerod, E., *On the Pathology and Treatment of Valvular Diseases of the Heart and its Secondary Affectations* (Wilson and Olgivy, London, 1851).

Paine, M., *Medical and Physiological Commentaries* (vols. 1-2, John Churchill, London, 1840).

Paine, M., *The Institutes of Medicine* (8th ed ., Sampson Low, Son & Co., London, 1867).

Parapia, L., 'History of Bloodletting by Phlebotomy', *British Journal of Haematology*, 143 (2008), pp. 490-495.

Park, K., 'Healing the Poor: Hospitals and Medical Assistance in Renaissance Florence' in Barry, J.and C. Jones (eds.), *Medicine and Charity Before the Welfare State* (Routledge, London, 1991).

Park, K., 'Medicine and Society in Medieval Europe, 500-1500' in Wear, A. (ed.) *Medicine in Society: Historical Essays* (University of Cambridge, Cambridge, 1992).

Parton, R., 'Royal Derwent Hospital: Psychiatric Hospital and Intellectual Handicap Training Centre, New Norfolk, Tasmania – Historical Notes, Present Day Statistics, Objectives and Functions' (unpublished report, June 1983).

Pearn J., (ed.), *Pioneer Medicine in Australia* (Amphion Press, Brisbane, 1988).

Pearn, J. and P. Carter (eds.), *Islands of Incarceration: Convict and Quarantine Islands off the Australian Coast* (Australian Society of the History of Medicine, Amphion Press, Brisbane, 1995).

Pearn, J., 'Courage and Curiosity: Surgeon-Explorers in Australia and New Zealand', *Australian and New Zealand Journal of Surgery*, 62 (1992), pp. 304-310.

Pearn, J., 'Sarah Island: The Infamous Prison Island in Macquarie Harbour, VDL' in Pearn, J. and P. Carter (eds.), *Islands of Incarceration: Convict and Quarantine Islands off the Australian Coast* (Australian Society of the History of Medicine, Amphion Press, Brisbane, 1995).

Pearn, J., 'The Enchanted Herb: The Work of Early Medical Botanists in Australia', *The Medical Journal of Australia*, 147 (1987), pp. 568-572.

Pearn, J., A. Petrie and G. Petrie, 'An Early Australian Pharmacopoeia: A Drug List and its *Materia Medica* for an Australian Convict Settlement', *The Medical Journal of Australia*, 149 (1988), pp. 630-634.

Pearson, R., *Thesaurus Medicamenum* (3rd ed., London, C. and R. Baldwin, 1804).

Pereira, J., *The Elements of Materia Medica* (Longman, Brown, Green, Orme and Longmans, London, 1839).

Pereira, J., *The Elements of Materia Medica and Therapeutics* (3rd ed., Blanchard and Lea, Philadelphia, 1852).

Pernick, M., 'The Calculus of Suffering in Nineteenth-Century Surgery', *The Hastings Center Report*, 13 (1983), pp. 26-36.

Petersen, F., *Materia Medica and Clinical Therapeutics* (Self-published, Washington, 1905), also at <http://www.henriettesherbal.com/eclectic/petersen>, accessed 31 October 2006.

Peterson, A. and R. Bunton (eds.), *Foucault, Health and Medicine* (Routledge, London, 1997).

Pharmacopoeia of St Bartholomew's Hospital (J.E. Adlard, London, 1869).

Pharmacopoeia of the Middlesex Hospital (publisher unknown, London, 1888).

Phillips, C., H. Piffard and L. Johnson, *Materia Medica and Therapeutics* (W. Wood & Co., New York, 1882).

Phillips, R., *A Translation of the Pharmacopoeia of the Royal College of Physicians of London, 1836* (S. Highly, London, 1837).

Picard, L., *Victorian London: The Life of a City, 1840-1870* (Phoenix, London, 2006).

Pickstone, J., *Medicine and Industrial Society: A History of Hospital Development in Manchester and its Regions, 1752-1946* (Manchester University Press, Manchester, 1985).

Piddock, S., "An Irregular and Inconvinient Pile of Buildings': The Destitute Asylum of Adelaide, South Australia and the English Workhouse', *International Journal of Historical Archaeology*, 5 (2001), pp. 73-95.

Piddock, S., 'Convicts and the Free: Nineteenth-Century Lunatic Asylums in South Australia and Tasmania (1830-1883), *Australasian Historical Archaeology*, 19 (2001), pp. 84-96.

Piddock, S., 'John Conelly's "Ideal" Asylum and Provisions for the Insane in South Australia and Tasmania' in Beisaw, A. and J. Gibb (eds.), *The Archaeology of Institutional Life* (The University of Alabama Press, Alabama, 2009).

Piddock, S., *A Space of Their Own: The Archaeology of Nineteenth-Century Lunatic Asylums in Britain, South Australia and Tasmania* (Springer, New York, 2007).

Piper, A., *Beyond the Convict System: The Aged Poor and Institutionalisation in Colonial Tasmania* (unpublished Ph.D thesis [examination copy], Department of History, University of Tasmania, Launceston, 2002).

Plumbe, S., *A Practical Treatise on Disease of the Skin* (Thomas and George Underwood, London, 1824).

Porter, G., *The Progress of the Nation in its Various Social and Economic Relations from the Beginning of the Nineteenth Century to the Present Time* (C. Knight and Co., London, 1836).Porter, I. and M. Williams, Epidemic Diseases in Aberdeen and the History of the City Hospital (Aberdeen History of Medicine Publication, Aberdeen, 2001).

Porter, R. (ed.), *Medicine: A History of Healing* (The Ivy Press, Thailand, 1997).

Porter, R., 'The Gift Relation: Philanthropy and Provincial Hospitals in Eighteenth-Century England' in Granshaw, L. and R. Porter (eds.), *The Hospital in History* (Routledge, London, 1989).

Porter, R. (ed.), *The Cambridge Illustrated History of Medicine* (Cambridge University Press, Cambridge, 1996).

Porter, R. and A. Wear (eds.), *Problems and Methods in the History of Medicine* (Croom Helm, Kent, 1987).

Porter, R. and M. Teich (eds.), *Drugs and Narcotics in History* (University of Cambridge, Cambridge, 1996).

Porter, R., 'Hospitals and Surgery' in Porter, R. (ed.), *The Cambridge Illustrated History of Medicine* (Cambridge University Press, Cambridge, 1996).

Porter, R., 'Medical Science' in Porter, R. (ed.), *The Cambridge Illustrated History of Medicine* (Cambridge University Press, Cambridge, 1996).

Porter, R., 'The Historiography of Medicine in the U.K.', *Medicina nei Secoli*, pp. 253-269.

Porter, R., 'The Patient's View: Doing Medical History from Below', *Theory and Society*, 14 (1985), pp. 175-198.

Porter, R., 'What is Disease?' in Porter, R. (ed.), *The Cambridge Illustrated History of Medicine* (Cambridge University Press, Cambridge, 1996).

Porter, R., *Blood and Guts: A Short History of Medicine* (Penguin Books, London, 2003).

Porter, R., *The Greatest Benefit to Mankind: A Medical History of Humanity from Antiquity to the Present*, (Fontana Press, London, 1999).

Potter, S., *A Compendium of Materia Medica, Therapeutics and Prescription Writing* (P. Blakiston, Philadelphia, 1902), also at <http://www.henriettesherbal.com/eclectic/potter-comp>, accessed 8 January 2008.

Power, D. and H. Waring, *A Short History of St. Bartholomew's Hospital, 1123-1923* (C. Whittington and Griggs, London, 1923).

Poynter, F. (ed.), *The Evolution of Hospitals in Britain* (Pitman, London, 1964).

Poynter, F. (ed.), *The Evolution of Pharmacy in Britain* (University of Michigan, Michigan, 1965).

Purtscher, J. (ed.), *Deaths at General Hobart Hospital: January 1864-1884* (Self-published, Mt Stuart, 1999).

Pybus, C. and H. Maxwell-Stewart, *American Citizens, British Slaves: Yankee Political Prisoners in an Australian Penal Colony, 1839-1850* (Melbourne University Press, Melbourne, 2002).

Quain, J., *The Elements of Anatomy* (4th ed., Taylor and Walton, London, 1837).

Ratcliff, E. and K. Kirkby, 'Psychiatry in Tasmania: From Old Cobwebs to New Brooms', *Australasian Psychiatry*, 9 (2001), pp. 128-132.

Ratcliff, E., 'The Pugh Oration: A Yankee Dodge for Making People Insensible' in Richards, P. and P. Ogden (eds.), *Anaesthesia: Awakening the Sleeping Giant* (Myola Publishing, Launceston, 2003).

Reaume, G., *Remembrance of Patients Past: Patient Life at the Toronto Hospital for the Insane* (University of Toronto Press, Toronto, 2009).

Reinartz, J., *Health Care in Birmingham: The Birmingham Teaching Hospitals, 1779-1999* (The Boydell Press, Woodbridge, 2009).

Remington, J. and H. Wood, *The Dispensatory of the United States of America* (JB Lippincott, Philadelphia, 1918), also at <http://www.henriettesherbal.com/eclectic/usdisp/>, accessed 25 November 2009.

Remington, J., 'Petrolatum in the Officinal Ointments', *American Journal of Pharmacy*, 55 (1883), also at <http://www.henriettesherbal.com/eclectic/journals/ajp1883/10-petrolatum.html>, accessed 30 October 2006.

'Reports of Cases Appearing at Public Institutions: The London Hospital', *Medical Gazette*, 7 (1831), pp. 827-829.

Rhoden, N. (ed.), *English Atlantics Revisited* (McGill-Queen's University Press, Canada, 2007).

Rice, N., *Trials of a Public Benefactor: as Illustrated in the Discovery of Etherization* (Pudney and Russell, New York, 1859).

Richards P. and P. Ogden (eds.), *Anaesthesia: Awakening the Sleeping Giant* (Myola Publishing, Launceston, 2003).

Richards, E., 'An Australian Map of British and Irish Literacy in 1841', *Population Studies*, 53 (1999), pp. 345-359.

Richards, P., B. Valentine and T. Dunning (eds.), *Effecting a Cure: Aspects of Health and Medicine in Launceston* (Myola House of Publishing, Launceston, 2006).

Richardson, H., *English Hospitals 1660-1948: A Survey of the Architecture and Design* (National Monuments Record Centre, Swindon, 1998).

Richardson, J., *The Annals of London: A Year-by-Year Record of a Thousand Years of History* (Cassell Paperbacks, London, 2001).

Richardson, R. and B. Hurwitz, 'Celebrating New Year in Bart's Dissecting Room', *Clinical Anatomy*, 9 (1996), pp. 408-413.

Richardson, R., *Death, Dissection and the Destitute* (2nd ed., University of Chicago Press, Chicago, 2000).

Rimmer, W., *Portrait of a Hospital: The Royal Hobart* (Royal Hobart Hospital, Hobart, 1981).

Risse, G. and J. Warner, 'Reconstructing Clinical Activities: Patient Records in Medical History', *Social History of Medicine*, 5 (1992), pp. 183-205.

Risse, G., 'Hospital History: New Sources and Methods' in Porter, R. and A. Wear (eds.), *Problems and Methods in the History of Medicine* (Croom Helm, Kent, 1987).

Risse, G., *Hospital Life in Enlightenment Scotland* (Cambridge University Press, Cambridge, 1986).

Risse, G., *Mending Bodies, Saving Souls: A History of Hospitals* (Oxford University Press, Oxford, 1999).

Risse, G., *New Medical Challenges During the Scottish Enlightenment* (Editions Rodopi, Amsterdam, 2005).

Robertson, J., *Observations on the Mortality and Physical Management of Children* (Longman, Rees, Orme, Brown, and Green, London, 1827).

Robinson, A., *Cunningham's Text-Book of Anatomy* (5th ed., William Wood and Company, New York, 1818).

Robinson, D., *The Latin Grammar of Pharmacy* (4th ed., P. Blakiston's Son & Co., Philadelphia, 1903).

Rose, C., 'Politics and the London Royal Hospitals' in Granshaw, L. and R. Porter (eds.), *The Hospital in History* (Routledge, London, 1989).

Rosenberg, C., 'The Tyranny of Diagnosis: Specific Entities and Individual Experience', *The Millbank Quarterly*, 80 (2002), pp. 237-260.

Rosenberg, E., *The Care of Strangers: The Rise of America's Hospital System* (John Hopkins University Press, New York, 1987).

Ross, L., *Death and Burial at Port Arthur, 1830-1877* (unpublished Bachelor of Arts (Honours) thesis, Department of History, University of Tasmania, Hobart, 1995).

Rubin, M., 'Development and Change in English Hospitals, 1100-1500' in Granshaw, L. and R. Porter (eds.), *The Hospital in History* (Routledge, London, 1989).

Russell, K., 'Medicine in Melbourne: The First Fifty Years', *The Medical Journal of Australia*, 2 (1977), pp. 17-21.

Sandford, S., T. Thomson and A. Cunningham (eds.), *The Popular Encyclopaedia, Being a General Dictionary of Arts, Sciences, Literature, Biography, History, and Political Economy* (Blackie & Son, Glasgow, 1837).

Sandford, S., T. Thomson and A. Cunningham (eds.), *The Popular Encyclopaedia, Being a General Dictionary of Arts, Sciences, Literature, Biography, History and Political Economy*, (Blackie and Son, Glasgow, 1841).

Sargent, F., *On Bandaging, and Other Operations of Minor Surgery* (Blanchard and Lea, Philadelphia, 1856).

Sayre, L., *A Manual of Materia Medica and Pharmacognosy* (P. Blakiston's Son, Philadelphia, 1917), also at <http://www.henriettesherbal.com/eclectic/sayre/>, accessed 6 February 2010.

Scott, J., 'A Return of Medical and Surgical Diseases Treated at H.M. Colonial Hospital, Hobart Town, Van Diemen's Land, for the Years 1821 to 1831', *The Transactions of the Provincial Medical and Surgical Association*, 3 (Sherwood, Gilbert, and Piper, London, 1835), pp. i-xii.

Scudder, J., *Specific Medications and Specific Medicines* (Wilstatch, Baldwin & Co., Cincinnati, 1870), also at <http://www.henriettesherbal.com/eclectic/spec-med/>, accessed 29 October 2006.

Scudder, J., *The American Eclectic Materia Medica* (The Scudder Brothers, Cincinnati, 1898), also at <http://www.henriettesherbal.com/eclectic/scudder1898/aetheris_spir_seda.html>, accessed 14 April 2009.

Scull, A., C. MacKenzie, and N. Hervey, *Masters of Bedlam: The Transformation of the Mad-Doctoring Trade* (Princeton University Press, Princeton, 1996).

Scull, A., *Museums of Madness: The Social Organization of Insanity in Nineteenth-Century England* (Allan Lane, London, 1979).

Scull, A., *The Most Solitary of Afflictions: Madness and Society in Britain, 1700-1900* (Yale University Press, New Haven, 1993).

Segal, J., *Health and the Rhetoric of Medicine* (Southern Illinois University, Illinois, 2008).

Semple, R., 'On Disease of the Nerves of the Face', *The Lancet*, 2 (1842), p. 850.

Shaw, E., *The Medical Rememberer, or Book of Emergencies* (2nd ed., John Churchill, London, 1845).

Shorter, E., 'Primary Care' in Porter, R. (ed.), *The Cambridge Illustrated History of Medicine* (Cambridge University Press, Cambridge, 1996).

Sider, S., *Handbook to Life in Renaissance Europe* (Oxford University Press, Oxford, 2005).

Sigsworth, E., 'A Provincial Hospital in the Eighteenth and Nineteenth Centuries', *College of General Practitioners, Yorkshire Faculty Journal* (1966), pp. 24-36

Sigsworth, E., 'Gateways to Death? Medicine, Hospitals and Mortality, 1700-1850' in Mathias, P. (ed.), *Science and Society, 1600-1900* (Cambridge University Press, Cambridge, 1972).

Simpson, J., *Custom and Practice in Medical Care: A Comparative Study of Two Hospitals in Arbroath, Scotland, U.K. and Waterville, Maine, U.S.A.* (Oxford University Press, Oxford, 1968)

Skey, F., *Operative Surgery* (John Churchill, London, 1850).

Sloane, D., 'Scientific Paragon to Hospital Mall: The Evolving Design of the Hospital, 1885-1994', *Journal of Architectural Education*, 48 (1994), pp. 82-98.

Smart, W., 'On the Successive Epidemics of Yellow Fever in Bermuda during the Present Century', *The British Medical Journal*, 2 (1863), pp. 98-102.

Smart, W., 'On the Yellow Fever Epidemics in Bermuda', *Transactions of the Epidemiological Society of London*, 2 (1867), pp. 24-68.

Smith, B., *A Cargo of Women: Susannah Watson and the Convicts of the Princess Royal* (New South Wales University Press, Sydney, 1988).

Smith, F., *The People's Health: 1830-1910* (Croom Helm, London, 1979).

Smith, L., 'The Architecture of Confinement: Urban Public Asylums in England, 1750-1820' in Topp, L., J. Moran, and J. Andrews (eds), *Madness, Architecture and the Built Environment: Psychiatric Spaces in Historical Context* (Routledge, London, 2007).

Smith, W. and J. Lockwood, *A Smaller Latin-English Dictionary* (John Murray, London, 1933).

Snow, S., *Blessed Days of Anaesthesia: How Anaesthetics Changed the World* (Oxford University Press, Oxford, 2008).

South, J., *Notes Taken on Lectures given by John Abernethy on Natural and Morbid Anatomy and Physiology delivered by John Abernethy Esq FRS in the Anatomical Theatre at St Bartholomew's*

Hospital in the Year 1819 & 1820 (vols. 1-4, Library of the Royal College of Surgeons, London, 1821).

Southerwood, W., 'Bishop R.W. Willson's Work for the Insane in Tasmania', *Papers and Proceedings: Tasmanian Historical Research Association*, 20 (1973), pp. 140-153.

Staples, J., *A Few Practical Observations on the Art of Cupping* (Longman, Rees, Orme Brown, Green, and Longman, London, 1835).

Starr, F., 'Convict Artefacts from the Civil Hospital Privy on Norfolk Island', *Australasian Archaeology*, 19 (2001), pp. 39-47.

Statistical Report on the Sickness, Mortality and Invaliding Among the Troops (W. Clowes and Sons, London, 1838).

Stevenson, C., *Medicine and Magnificence: British Hospital and Asylum Architecture* (Yale University Press, New Haven, 2000).

Stokes, W., 'Lectures on the Theory and Practice of Medicine, delivered at the Medical School, Park Street, Dublin, Sessions 1833-34', *London and Medical Surgical Journal*, 5 (1834), pp. 712-717.

Storey, G. and D. Scott, 'Arthritis Associated with Venereal Disease in Nineteenth Century London', *Clinical Rheumatology*, 17 (1998), pp. 500-504.

Strange, J., *Death, Grief and Poverty in Britain, 1870-1914* (Cambridge University Press, Cambridge, 2005).

Sturdy, S., *Making Medicine Scientific: John Burdon Sanderson and the Culture of Victorian Science* (John Hopkins University Press, Baltimore, 2002).

Sturma, M., 'Public Executions and the Ritual of Death, 1838', *The Push from the Bush: A Bulletin of Social History*, 15 (1983), pp. 3-11.

Sullivan, W., 'Reconsidering the Convict Ships', *New Hibernian Review*, 12 (2008), pp. 101-116.

Summers, M. and S. Bowman, *Of Poor Law, Patients and Professionals: A History of Bristol's Southmead Hospital* (self-printed, Bristol, 1997).

Sweetser, W., *A Treatise on Consumption, Embracing an Inquiry into the Influence Exerted upon it by Journeys Voyages and Changes of Climate* (T.H. Carter, Boston, 1836).

Sydenham, T., *The Works of Thomas Sydenham, M.D., on Acute and Chronic Diseases* (G.G.J. and J. Robinson, W. Otridge, S. Hayes and E. Newbery, London, 1788).

Syme, J., *The Principles of Surgery* (5th ed., John Murray, London, 1863).

Taylor, A., *Medical Jurisprudence* (6th ed., John Churchill, London, 1858).

Taylor, J., *Hospital and Asylum Architecture in England, 1840-1914: Building for Health Care* (Mansell, London, 1991).

Taylor, R., *Medical Wisdom and Doctoring: The Art of 21st Century Practice* (Springer Science + Business Media, New York, 2010).

The British Pharmaceutical Codex (Pharmaceutical Society of Great Britain: The Pharmaceutical Press, London, 1911), at <http://www.henriettesherbal.com/eclectic/bpc1911/>, accessed 27 March 2009.

The Pharmacopoeia of the London Hospital (publisher unknown, London, 1868).

Thomas, R., *The Eclectic Practice of Medicine* (Scudder Brothers and Co., Cincinnati, 1907), also at <http://www.henriettesherbal.com/eclectic/thomas>, accessed 3 November 2006.

Thomas, R., *The Modern Practice of Physic* (4th ed ., Longman, Hurst, Orme, Rees and Brown, London, 1813).

Thompson, E., *The Making of the English Working Classes* (Pantheon Books, New York, 1964).

Thomson J. (ed.), *The Works of William Cullen, M.D.* (William Blackwood, Edinburgh, 1827).

Thomson, A., *Elements of Materia Medica and Therapeutics* (Longman, Rees, Orme, Brown, Green and Longman, London, 1833).

Thomson, A., *The London Dispensatory* (Longman, Rees, Orme, Brown, Green and Longman London, 1815).

Tomlinson, M., 'Penal Servitude 1846-1865: A System in Evolution' in Bailey, V. (ed.), *Policing and Punishment in Nineteenth Century Britain* (Croom Helm, London, 1981).

Tooth, J., *Human and Heroic: The Life and Love of a 19th Century Country Doctor* (Artemis Publications, Hobart, 2007).

Topp, L., J. Moran, and J. Andrews (eds.), *Madness, Architecture and the Built Environment: Psychiatric Spaces in Historical Context* (Routledge, London, 2007).

Toscani, F., C. Borreani, P. Boeri and G. Miccinesi, 'Life at the End of Life: Beliefs about Individual Life after Death and 'Good Death' Models – A Qualitative Study', *Health and Quality of Life Outcomes*, 1 (2003), also at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC280703/>, accessed 4 August 2010.

Tracy, N. and M. Robson (eds.), *The Age of Sail: The International Annual of the Historic Sailing Ship* (Conway Maritime Press, London, 2003).

Trevelyan, G., *English Social History* (Penguin Books, London, 2000).

Tröhler, U., 'Quantification in British Medicine and Surgery, 1750-1830, with Special Reference to its Introduction into Therapeutics' (unpublished Ph.D. dissertation, University of London, 1978).

Trollope, A., *The West Indies and the Spanish Main* (Harper and Brothers, New York, 1860).

Turner, E., *Elements of Chemistry* (2nd ed., John Griggs, Philadelphia, 1829).Turner, T., *A Diagnostic Analysis of the Casebooks of Ticehurst House Asylum, 1845-1890* (Cambridge University Press, 1992.

Verrill, A., *The Bermuda Islands* (Self-published, Connecticut, 1902).Waddington, K., *Charity and the London Hospitals, 1850-1898* (The Boydell Press, Woodbridge, 2000).

Waddington, K., *Medical Education at St Bartholomew's Hospital, 1123-1995* (The Boydell Press, Woodbridge, 2003).

Wakley, T. (ed.), 'Lectures on Surgery Delivered by Mr Wardrop', *The Lancet*, vol. II (1833), pp. 591-598.

Wall, R (ed.), *Mortality in Mid 19th Century Britain: Pioneers of Demography* (Gregg International, Farnborough, 1974).

Walter, T., 'Historical and Cultural Variants on the Good Death', *British Medical Journal*, 327 (2003), pp. 218-220.

Walton, J., 'Review of *Death, Dissection and the Destitute*', *Journal of Social History*, 23 (1989), p. 192-193.

Walton, J., J. Barondess and S. Lock, *The Oxford Medical Companion* (Oxford Univeristy Press, Oxford, 1994).

Wand-Tetley, J., 'Historical Methods of Counter-Irritation', *Annals of Physical Medicine*, 3 (1956), pp. 90-99.

Warner, J., 'The Uses of Patient Records by Historians: Patterns, Possibilities and Perplexities', *Health and History*, 1 (1999), pp. 101-112.

Wear, A. (ed.), *Medicine in Society: Historical Essays* (University of Cambridge, Cambridge, 1992).

Webb, K., *From County Hospital to NHS Trust: The History and Archives of NHS Hospitals, Services and Management in York, 1740-2000* (University of York, York, 2002).

Weidenhofer, M., *Port Arthur: A Place of Misery* (B. and M. Reid in association with the Port Arthur Historic Site Management Authority, Port Arthur, 1990).

Weindling, P. (ed.), *The Social History of Occupational Health* (Croom Helm, Kent, 1985).

White, K., 'Negotiating Science and Liberalism: Medicine in Nineteenth-Century South Australia', *Medical History*, 43 (1999), pp. 173-191.

Widowson, H., *Present State of Van Diemen's Land , comprising an Account of its Agricultural Capabilities with Observations on the Present State of Farming* (S. Robinson, London, 1829).

Willcock, R., *Bulwark of Empire: Bermuda's Fortified Naval Base, 1860-1920* (Self-published, New Jersey, 1962).

Williams, J.R., *Care: 100 Years of Hospital Care in Bermuda* (Camden Editions, Bermuda, 1994).

Wilson, E., *A System of Human Anatomy, General and Special* (American ed., Lea and Blanchard, Philadelphia, 1843).

Wilson, J., 'A Surgeon's Private Practice in the Nineteenth Century: Sir William Fergusson's Edinburgh Day Books 1832-39, with some Extracts from his London Day Books 1839-77', *Medical History*, 31 (1987), pp. 349-353.

Wilson, K., *The Sense of the People: Politics, Culture and Imperialism in England, 1715-1785* (Cambridge University Press, Cambridge, 1998).

Wistar, C. and W. Horner, *A System of Anatomy for the Use of Students of Medicine* (6th ed., Carey, Lea & Blanchard, Philadelphia, 1835).

Withering, W., *An Account of the Foxglove, and Some of its Medicinal Uses* (G.G.J. and J. Robinson, London, 1785).

Wood, *A Treatise on Therapeutics, and Pharmacology or Materia Medica* (J.B.Lippincott & Co, Philadelphia, 1867), at <http://chestofbooks.com/health/ materia-medica-drugs/Treatise-Therapeutics-Pharmacology-Materia-Medica-Vol2/>, accessed 20 April 2009.

Wood, G., *Treatise on the Practice of Medicine* (2nd ed., Grigg, Elliot and Co., Philadelphia, 1849).

Wood, R., 'Through the Eyes of Australian Colonists' in Pearn, J. (ed.), *Pioneer Medicine in Australia* (Amphion Press, Brisbane, 1988).

Woods, R., 'The Population of Britain in the Nineteenth Century' in Anderson, M. (ed.), *British Population History from the Black Death to the Present Day* (University of Cambridge, Cambridge, 1993).

Woods, R., *Demography of Victorian England and Wales* (Cambridge University Press, Cambridge, 2000).

Woodward, J., *To Do The Sick No Harm: A Study of the British Voluntary Hospital to 1875* (Routledge and Kegan Paul, London, 1974).

Wrigley, E. and R. Schofield, *The Population History of England 1541–1871: A Reconstruction* (Cambridge University Press, Cambridge, 1981).

Yandell L., (ed.), 'Review of *The Principles of Medicine, Founded on the Structure and Functions of the Animal Organism*', *The Transylvania Journal of Medicine and the Associated Sciences*, 5 (1832), pp. 554-588.

Zuck, D., 'John Snow and the Paracentesis of the Thorax', *The History of Anaesthesia Society Proceedings*, 30 (2002), pp. 55-61.

Internet Sources

'A Population History of Old London', *The Proceedings of the Old Bailey: London's Central Criminal Court, 1674-1913*, at <http://www.oldbaileyonline.org/static/Population-history-of-london.jsp#a1674-1715>, accessed 2 July 2010.

Forbes, K., *Bermuda Online Multinational: Bermuda's Hospitals*, at <http://www.bermuda-online.org/ kemh.htm>, accessed 16 September 2008.

The History of St Bartholomew's Hospital, at <http://www.bartsandthelondon.org.uk/ aboutus/history /barts.asp>, accessed 11 October 2008.

Paull, J., 'William Russ Pugh: Not Just an Anaesthetist', *Australian and New Zealand College of Anaesthetists*, at <http://www.anzca.edu.au/events/asm/asm2008/abstracts/william-russ-pugh-not-just-an-anaesthetist.html>, accessed 25 June 2009.