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Therapeutic bloodletting in Ireland from the medieval period to modern times

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Abstract

Bloodletting by venesection or by the application of leeches was commonly engaged in by medical practitioners until the late nineteenth century. Based on the classical ideas of Hippocrates and Galen that humoral imbalance was the cause of disease, bleeding was used to treat sickness and maintain health. While the paradigm of humoral medicine was challenged by iatrochemistry in the early modern period, bleeding remained popular into the eighteenth and nineteenth centuries. Bloodletting was practised widely in Ireland from at least the thirteenth century and possibly earlier; both the Gaelic and Anglo-Norman communities resorted to bleeding. This paper explores the origins of therapeutic bleeding in Ireland and examines the experiences of bloodletting among the Irish in the context of evolving ideas in medicine from the medieval period until it was abandoned in the first half of the twentieth century.

Introduction

Until recently, bloodletting was used extensively in Ireland as a therapeutic option for many medical conditions. Achieved by venotomy, arteriotomy or by the application of leeches, bleeding, as well as cupping, has a very long history. Bloodletting was based on the ideas of classical humoral medicine and even when this paradigm was replaced by scientifically grounded precepts, it continued to be favoured by many practitioners. The history of medicine and disease in Ireland has been studied extensively by both medical and professional historians in recent years including reviews of the history of haematology and phlebotomy.¹

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¹ For a bibliography of recent publications on medicine in Ireland see: Pierce Grace, 'Patronage and health care in eighteenth-century Irish county infirmaries', *Irish Historical Studies* 41 (2017), 1–21:3–4; For the history of bleeding see: S.R. McCann, *A history of haematology: from Herodotus to HIV* (Oxford, 2016); D.P. Thomas, 'The demise of bloodletting', *Journal of the Royal College of Physicians of Edinburgh* 90 (2014), 72–7; L.A. Parapia, 'History of bloodletting by phlebotomy', *British Journal of Haematology*, 143, (2008), 490–495; Andrew Wear, *Knowledge and practice in English medicine, 1550–1680* (Cambridge, 2000), 139–40; Roy Porter, *The greatest benefit to mankind* (London, 1997), 73–7.

This paper focuses on bloodletting as it was practised in Ireland over a period of 1,500 years.

Classical and medieval medicine was based on the Hippocratic idea of the four humours corresponding to the Aristotelian four elements and their qualities: blood/air (warm and moist), yellow bile/fire (warm and dry), black bile/earth (cold and dry) and phlegm/water (cold and moist). A unique combination of humours underlay an individual's emotional temperament which might be sanguine, choleric, melancholic or phlegmatic.² Humoral imbalance or putrefaction resulted in illness and only when humoral equipoise was re-established could health be regained.³ Diagnosis of illness was made by examining the pulse and the urine which reflected the internal humoral status. Regimen was practised to maintain health, while drugs and surgery were employed to treat disease. Regimen manipulated the six 'non-naturals', drugs induced emesis, purgation and sweating, while surgery encompassed cautery, cupping and bleeding.⁴ Charms and prayers were also deployed with therapeutic intent.⁵ As excess blood was the chief cause of disease, its removal was the logical approach to treatment.⁶

Following the fall of Rome in the fifth century much classical knowledge was preserved in the East where many Greek and Latin medical texts were translated into Syriac and Arabic.⁷ At the end of the eleventh century the Benedictine monk, Constantine Africanus (d. 1087), translated many of the texts back into Latin at Monte Casino in southern Italy. These texts, including a collection known as the *Articella* and several works on bloodletting, became the basis for the medical curriculum in Europe from the twelfth to the sixteenth centuries.⁸ Much of this information was translated into Irish in

² Luke Demaitre, *Medieval medicine, the art of healing, from head to toe* (Oxford, 2013), 16–17; M.L. Cameron, *Anglo Saxon medicine* (Cambridge, 1993), 159.

³ Demaitre, *Medieval Medicine*, 21; Wear, *Knowledge and practice in English medicine*, 423–4.

⁴ The 'non-naturals' were: air and environment, eating and drinking, exercise and rest, sleep and waking, inanition and repletion, and accidents of the soul (emotions). Jon Arrizabalaga, 'Facing the Black Death: perceptions and reactions of university medical practitioners', in Luis García-Ballester *et al.* (eds), *Practical medicine from Salerno to the Black Death* (Cambridge, 1994), 237–288:273–80.

⁵ L.T. Olsan, 'Charms and prayers in medieval medical theory and practice', *Social History of Medicine* 16 (2003), 343–66.

⁶ Porter, *The greatest benefit to mankind* (London, 1997), 73–7:75.

⁷ Allan Chapman, *Physicians, plagues and progress, the history of Western medicine from antiquity to antibiotics* (Oxford, 2016), 41–50.

⁸ Cornelius O'Boyle, 'Articella', in Thomas Glick, S.J. Livesey, Faith Wallis (eds), *Medieval science, technology, and medicine: an encyclopaedia* (London, 2005), 53–4; N.G. Siraisi, *Medieval and early renaissance medicine* (Chicago, 1990), 58–9; Pedro Gil-Sotres, 'Derivation and revulsion', in Luis García-Ballester *et al.* (eds), *Practical medicine from Salerno to the Black Death*, 110–155:112.

the fourteenth and fifteenth centuries and used thereafter in Gaelic medical schools in Ireland and Scotland.⁹ By the fourteenth century a distinction was made between the ideas of health maintenance (*regimen sanitatis*) and therapeutic advice (*consilia*); prophylactic bleeding in the spring and autumn was indicated as part of the former and therapeutic bloodletting at any time for the latter.¹⁰ This knowledge was widely disseminated, and texts on bloodletting and herbs were known to both the Anglo-Norman and Gaelic communities in medieval Ireland.¹¹

There are no texts from pre-Norman Ireland specifically relating to medicine, but the sagas and laws contain references to healing, while the annals record epidemic diseases. Therapeutic bloodletting is not mentioned but there are intimations that the classical theories of medicine might have been known. An Old Irish legal heptad permitted a physician (*midaig téchta*) to shed blood without penalty.¹² Another eighth-century law text (TCD MS 1337) allowed a physician to be distrained by removing his lancet (*fraig*),¹³ defined by the *Dictionary of the Irish Language* as ‘a pointed instrument, a needle or stiletto, a probe’.¹⁴ While a *fraig* may have had many uses in surgery, it might also have been used for venesection, but the evidence is uncertain. More convincing support for the influence of classical medical ideas comes from a ninth-century text (RIA 3 B 32) relating to the monastery of Tamlachta (Tallaght). The diagnosis of excess ‘desire’, caused by a surfeit of blood in a young woman, was made by thrusting a needle into her palm when three streams of blood poured out. The treatment was to reduce her diet until ‘not a drop of blood came out of her’ on being pricked by the needle.¹⁵ While diet, not bleeding, was used as the treatment in this case, the

⁹ Aoibheann Nic Dhonnchadha, ‘Irish medical writing, 1400–1600’, in Angela Bourke *et al.* (eds), *The Field Day Anthology of Irish Writing* (5 vols, Cork, 2002) vol. 4, 356–7; Pierce Grace, ‘Medicine in Gaelic Ireland and Scotland, c. 1350–c. 1750’, *Irish Historical Studies* 44 (2020), 201–223:209–12.

¹⁰ M.R. McVaugh, ‘Medicine in the Latin Middle Ages’, in Irvine Loudon (ed.), *Western medicine, an illustrated history* (Oxford, 1997), 54–65; Danielle Jacquart, ‘Medical practice in Paris’, in Luis García-Ballester *et al.* (eds), *Practical medicine from Salerno to the Black Death*, 201–2.

¹¹ Alan Bliss and Joseph Long, ‘Literature in Norman French and English’, in Art Cosgrove (ed.), *A new history of Ireland II: medieval Ireland 1169–1534* (Oxford, 1987), 708–36:735; Nic Dhonnchadha, ‘Irish medical writing, 1400–1600’, 356–7.

¹² Fergus Kelly, *A guide to Irish law* (Dublin, 1998), 59.

¹³ D.A. Binchy, ‘A text on the forms of distraint’, *Celtica* 10 (1973), 72–86; Kelly, *A guide to early Irish law*, 181.

¹⁴ *Electronic Dictionary of the Irish Language* ‘Fraig’ <http://www.dil.ie/24235> (2 June 2020).

¹⁵ E.J. Gwynn and W.J. Purton, (eds), ‘The monastery of Tallaght’, *Proceedings of the Royal Irish Academy* 29C (1911/12), 115–179:149.

prominence of blood as the cause of the problem reflects the classical teachings of Hippocrates and Galen.

Although no direct reference to bloodletting is to be found in early Irish records, Anglo-Saxon sources record the use of bloodletting in England as early as the seventh century. These include Bede's *Ecclesiastical history of the English nation*,¹⁶ and the Old English medical texts, *Bald's Leechbook*, *Leechbook III* and the *Lacnunga*.¹⁷ However, bleeding was not recommended very often with fewer than fifty of 1,300 remedies calling for venesection.¹⁸ As the establishment of Irish monastic communities in Britain likely facilitated the exchange of ideas between the two countries, it may be that knowledge of classical medicine was conveyed to Ireland by monks travelling between the two islands.¹⁹ Nonetheless, while the humoral justification for regulating blood may have been known in Ireland, there is no direct evidence that bloodletting was performed as a therapeutic option before the later medieval period.

The commencement of bloodletting in medieval Ireland

Bleeding in the monasteries

When bloodletting as a treatment was adopted in Ireland is unknown, but its arrival coincides with the restructuring of the Irish church and the coming of the Normans in the twelfth century. Following a series of national synods, a diocesan structure was established comprising 34 dioceses, and new monastic orders including Augustinian Canons (c. 1140) and Cistercian monks (1142) were introduced.²⁰ An infirmary was regularly included as part of the ancillary buildings of these new monasteries in keeping with the rules of St Augustine (c. 400) and St Benedict (c. 480).²¹ The former declared that 'the care of the sick...shall be assigned to a brother', while the latter stated 'for these infirm brothers a cell shall be set apart and a servitor God-fearing, diligent and careful' [shall be provided].²² Separated from the main body of the monastery, the infirmary often

¹⁶ Bede, *Ecclesiastical history of the English nation*, Book V, 3. <https://sourcebooks.fordham.edu/basis/bede-book5.asp> (2 June 2020); L.S. Chardonnens, *Anglo-Saxon prognostics 900–1100* (Leiden, 2007), 278–9.

¹⁷ Cameron, *Anglo Saxon medicine*, 35–47.

¹⁸ Cameron, *Anglo Saxon medicine*, 167.

¹⁹ Matthew Stout, *Early Medieval Ireland 431–1169* (Dublin, 2017), 41–5; Pádraig Ó Riain, *A dictionary of Irish saints* (Dublin, 2011), 74–5; Thomas Miller, *The Old English version of Bede's Ecclesiastical history of the English people* (Ontario, 1999), 109.

²⁰ Stout, *Early Medieval Ireland*, 226–30, 245–9; Monastic Ireland, 'Religious orders' (<http://monastic.ie/religious-orders/>) (2 June 2020); Donnchadh Ó Corráin, *The Irish church, its reform and the English invasion* (Dublin, 2017), 85.

²¹ Tadhg O'Keeffe, *Medieval Irish buildings, 1100–1600* (Dublin, 2015), 166.

²² Fordham University Internet History Sourcebooks Project, 'The rule of St Augustine', (<https://sourcebooks.fordham.edu/source/ruleaug.html#The%20Care%20of%20Community%20Goods>) (4 February 2018). Henry Bettenson (ed.), *Documents of the Christian Church* (Oxford, 1959), 168.

had its own cloister and garden where medicinal plants and herbs were grown.²³ In a ninth-century plan of an idealised Benedictine monastery preserved at St Gall in Switzerland a special room was set aside for a physician and another for bloodletting.²⁴

Bleeding was an integral part of monastic life among the European orders.²⁵ Along with diet, regular bloodletting was deemed beneficial for health.²⁶ The bleeding procedure or *minution* was performed in a special room called the *flebotomaria*.²⁷ Among the Cistercians a general prophylactic bloodletting was carried out four times a year while Augustinian canons were bled seven times a year. Additional therapeutic venesections might be performed at any time for illness. After bleeding monks recuperated for three days in the infirmary where better food was available and conversation permitted.²⁸ A fire was allowed in the infirmary in a warm room known as the *calefactory*; heat would have facilitated vasodilation and eased the drawing off of the blood.²⁹ When in 1225 O'Maelbhreanuinn, the abbot of Boyle, died following bloodletting he became the first known individual to have been bled in Ireland.³⁰ Some Irish Cistercians seem to have neglected the phlebotomy rule as Stephen of Lexington, an English abbot who visited many of the order's Irish monasteries in the 1220s, commanded that 'the general bloodletting shall be observed in future, completely according to the rules stated in the Usages'.³¹

Bloodletting among the English of Ireland.

Evidence that bloodletting was practised among the Anglo Normans in Ireland is provided by a Hiberno Middle-English poem on bloodletting, entitled *Ars*

²³ O'Keeffe, *Medieval Irish buildings*, 166.

²⁴ S.E.S. Eberly, 'The monastery gardens of Canterbury Cathedral', *Wyrting* (<http://wyrting.com/EarlyGardens/British/MonasteryGardens/Canterbury1165.htm#infirmary>) (2 June 2020); Anonymous, *Carolingian culture at Reichenau and St Gall*, (<http://www.stgallplan.org/en/plan.html>) (2 June 2020).

²⁵ T.D. Fosbroke, *British monachism or the manners and customs of the monks and nuns of England* (3rd ed., London, 1843), 233–4.

²⁶ Julie Kerr, *Life in the Medieval cloister* (London, Bloomsbury, 2009), 73–4.

²⁷ Fosbroke, *British monachism*, 23–4.

²⁸ E.A. Webb, 'Introductory: the Augustinian order,' in *The records of St. Bartholomew's Priory and St. Bartholomew the Great, West Smithfield* (2 vols, Oxford, 1921), vol. 1, 19–34.

²⁹ Roger Stalley, *The Cistercian monasteries of Ireland: an account of the history, art, architecture of the White monks in Ireland from 1142 to 1540* (London & New Haven, 1987), 169; E.C. Rae, 'Architecture and sculpture, 1169–1603', in Cosgrove (ed.), *Medieval Ireland 1169–1534*, 737–80:739.

³⁰ William Hennessy (ed. and trans.), *The Annals of Loch Cé* (London, 1871), 275.

³¹ B.W. O'Dwyer (ed. and trans.), *Stephen of Lexington, letters from Ireland 1228–1229* (Kalamazoo, 1982), 160. The *Book of Usages* contained the rules of the Cistercian order. *Liber Usuum Sacri Cisterciensis Ordinis* (Paris, 1643).

phlebotomandi, contained in a fifteenth-century manuscript (Wellcome Library MS 406). Based on the language and a direct reference to Ireland in the manuscript, it is accepted that the poem was written in the Anglo-Norman lordship of Ireland.³² *Ars phlebotomandi* presents 32 anatomical sites to be bled for 26 different diseases; it is in verse for ease of memory.³³

While bloodletting was discussed and debated by university-trained physicians, the day-to-day practice of bleeding was in the hands of barber surgeons or *barbitonsores* who were lower down the social scale of medieval society.³⁴ The Montpellier surgeon, Henri de Mondeville (1260–1320) observed that physicians, who considered bloodletting unworthy, abandoned it to surgeons who in turn left it to barbers because it provided little income and lacked prestige.³⁵ Nonetheless, by the fifteenth century the barbers in Ireland were becoming organised. They were incorporated into the Guild of St Mary Magdalene in Dublin in 1446, and given the authority to regulate the barber's art in Dublin or within a radius of six miles of the city. Furthermore, they had the authority to fine or imprison transgressors in the city gaol.³⁶ The barber surgeon placed a white and red striped pole at his door to indicate his business. The pole represented the staff grasped by the patient to promote bleeding while the red and white stripes represented blood and the bandages used to stem the bleeding. Lord Thurlow explained to the House of Lords in 1797 that by statute barbers had blue and white poles, but surgeons, 'to denote the particular nature of their vocation', had red and white.³⁷

Gaelic medical practice

There are over 100 Gaelic medical manuscripts dating from the fourteenth to the seventeenth centuries which are copies and compilations of European Latin medical texts. It is likely that these were written by Irish physicians attending continental universities such as Paris and Montpellier in the fourteenth century. Subsequently these Gaelic texts were transcribed extensively by Irish and

³² Angus McIntosh and M.L. Samuels, 'Prolegomena to a Study of Medieval Anglo-Irish,' *Medium Ævum* 37 (1968), pp. 1–1:4.

³³ S.A.J. Moorat, *Catalogue of western manuscripts on medicine and science in the Wellcome Historical Medical Library* (2 vols, London, 1962), vol. 1, 273–5; Wellcome Library MS 406 Collection of medical tracts in verse and prose, mostly in Middle English (Leech-Books III) (<https://wellcomelibrary.org/item/b18935709#?c=0&m=0&s=0&cv=0&z=-0.7469%2C-0.0831%2C2.4938%2C1.5665>) (accessed 3 June 2020).

³⁴ Gil-Sotres, 'Derivation and revulsion', 110–155:118–22.

³⁵ Gil-Sotres, 'Derivation and revulsion', 110–155:122.

³⁶ H.F. Berry, 'The Ancient Corporation of Barber-Surgeons, or the Guild of St. Mary Magdalene, Dublin', *Journal of the Royal Society of Antiquaries of Ireland*, 33 (1903), 217–238:219.

³⁷ Jacob Larwood and J.C. Hotten, *The history of signboards* (London, 1866), 341–2.

Scottish physicians who were members of the professional medical kindreds.³⁸ Bloodletting was one of the treatments the Irish doctors studied and practised.

Astrology was an important factor in medieval medicine. In keeping with the idea that the movements of the moon, planets and stars influenced the inner workings of the human body, complicated charts and calendars were devised to assist physicians make a diagnosis and determine the most auspicious time for treatment, especially bloodletting. A *volvelle* or *rotula* was a moveable circular disc on a page for working out the position of the sun and moon in the zodiac and hence the advisability or not of a treatment at a specific time. A number of Irish versions of astronomical *volvelles* exist displaying the names of the signs of the zodiac, the planets, the months and numeral figures.³⁹ Two other comparable medieval medical resources were the ‘zodiac man’, a chart depicting the parts of the body controlled by the various signs of the zodiac, and the ‘vein man’, which illustrated the precise vein that should be let (bled) for a specific disease or symptom.⁴⁰ Analogous to its influence on the tides, the moon in its passage was thought to cause the accumulation of blood in the different parts of the body controlled by each sign of the zodiac. Thus, bloodletting was recommended only at certain favourable times depending on the astrological arrangement of the moon in the zodiac.⁴¹ No representations of the zodiac man in Irish has ever been found although it is likely that they existed as they were integral to the practice of medieval medicine. Only one copy of a vein man in Irish exists in a manuscript dated to 1563 (BL Add. MS 15582).⁴² (Fig. 1). Charts depicting the colour of urine which reflected the internal humoral balance were also used.⁴³ Given the presence of *volvelles* and a vein man in Irish manuscripts we can be confident

³⁸ Cormac Mac Duinnshléibhe (*fl.* c. 1459), Tadhg Ó Cuinn (*fl.* 1400–15), Aonghus Ó Callanáin, Niocol Ó hIcēadha (*fl.* 1403), Donnchadh Óg Ó Conchubhair (*fl.* 1586–1610) and Diarmaid Ó Sirideáin were all Irish physicians who translated Latin texts into Irish: Aoibheann Nic Dhonnchadha, ‘Medical writing in Irish’, *Irish Journal of Medical Science* 169 (2000), 217–20; Grace, ‘Medicine in Gaelic Ireland and Scotland, c. 1350–c. 1750’, 201–223.

³⁹ Three medico-astronomical texts (RIA MS B ii 1, RIA 23 F 13 and Marsh’s Library Z 2 2 1) are very similar, but only RIA MS B ii 1 contains a *volvelle* (*rotula*). See: Irish Script on Screen (<https://www.isos.dias.ie/english/index.html>) (12 Jan 2021). Two further Irish *volvelles* are to be found in Corpus Christi College MS 129, f.11r-v: Brian Ó Cuív, *Catalogue of Irish language manuscripts in the Bodleian Library at Oxford and Oxford college libraries. Part 1*: (Dublin, 2001), 281–97:281–4.

⁴⁰ Anonymous, ‘A primer on bloodletting’ (2) The “sign man”: an astrological guide to phlebotomy’ in Faith Wallis (ed.), *Medieval medicine: a reader* (Toronto, 2010), 286–68; Jack Hartnell, *Medieval bodies, life, death and art in the middle ages* (London, 2018), 158–62.

⁴¹ Anonymous, ‘A primer on bloodletting’, 286–68.

⁴² Standish O’Grady, Robin Flower and Myles Dillon, *Catalogue of Irish manuscripts in the British Museum* (3 vols, London, 1926–53), vol. 1, 275; John Bannerman, *The Beaton, a medical kindred in the classical Gaelic tradition* (Edinburgh, 2015), 116–9.

⁴³ Grace, ‘Medicine in Gaelic Ireland and Scotland’, 201–23:216.

FIG. 1—A sixteenth-century ‘vein man’ in Irish with lines connecting the parts of the body to be bled to text describing the indications for bleeding from that part. (British Library Add. MS 15,582 f.61 b. © British Library Board).

that bloodletting was understood and practised by those Gaelic physicians who were well versed in contemporary European medical thought. Bleeding as part of a health maintenance regimen was also known among the Gaelic communities of Ireland and Scotland; the sixteenth century Gaelic text *Regimen Sanitatis*, derived from the *Rosa Anglica* of John Gaddesden, advocated bleeding to ward off disease especially in the spring and autumn.⁴⁴ However, no individual case histories of bloodletting have been identified.

The seventeenth and eighteenth centuries

As Standish O'Grady's description of Gaelic physicians as 'staunch Arabians' indicates, they adhered to the classical medicine of Hippocrates and Galen.⁴⁵ But by the sixteenth and early seventeenth centuries traditional medicine was changing. The publications of Andreas Vesalius' (1514–64) *De humani fabrica corporis*, Ambrose Paré's (1510–90) *La Méthod de traicter les playes faites par les arquebuses et aultres bastons à feu*, and William Harvey's (1578–1657) *Exercitatio anatomica de motu cordis et sanguinis in animalibus* challenged medieval ideas about anatomy, surgery and physiology, and laid the foundations for modern medicine.⁴⁶ The whole tradition of Galenic medicine was attacked by Paracelsus (1493–1541) who espoused iatrochemistry, a fusion of alchemy, chemistry and medicine. He advocated chemical treatments for disease including the use of a combination of mercury, zinc and opium which he called laudanum.⁴⁷ Later the Belgian physician Jean Baptiste van Helmont (1580–1644) believed that each disease had a vital principle of its own that could be countered by chemical treatments.⁴⁸ Bloodletting had no part in this philosophy and van Helmont, who was familiar with medical practice in Gaelic Ireland, disapproved of it altogether.⁴⁹ He made the very modern suggestion that a randomised trial of the treatment of fever with and without bloodletting be conducted using the patients' funerals as the end point of the study.⁵⁰ Evidence for the popularity of 'chymical cures' in

⁴⁴ H. Cameron Gillies (ed.), *Regimen Sanitatis: the rule of health, a Gaelic medical manuscript of the early sixteenth century or perhaps older from the Vade Mecum of the famous Macbeaths, physicians to the Lords of the Isles and the Kings of Scotland for several centuries* (Glasgow, 1911), 49–50.

⁴⁵ O'Grady, Flower and Dillon, *Catalogue of Irish manuscripts* vol. 1, 175.

⁴⁶ Chapman, *Physicians, plagues and progress*, 181–9, 202–206; Porter, *The greatest benefit to mankind*, 188–9.

⁴⁷ Hosein Tajadod, 'Paracelsus, the founder of chemical therapeutic who initiated the application of chemistry to life', *Basic Sciences of Medicine* 3 (2014), 60–2.

⁴⁸ Porter, *The greatest benefit to mankind*, 201–9.

⁴⁹ J.B. van Helmont and M.B. Valentini, *Johannis Baptiste van Helmont Opera omnia* (Frankfurt, 1707), 13; Jason Harris, 'Latin learning and Irish physicians, c.1350–c.1610', in Ó Murchú (ed.), *Rosa Anglica: reassessments* (London, 2016), 1–25:23–4.

⁵⁰ I.M.L. Donaldson, 'van Helmont's proposal for a randomised comparison of treating fevers with or without bloodletting and purging', *Journal of the Royal College of Physicians of Edinburgh* 46 (2016), 206–13.

Dublin is found in the library of Dr Edward Worth (1676–1733) where forty-five books in his collection deal with chemical cures and aspects of chemistry.⁵¹

The dominance of astrology and tradition in guiding treatment waned further as physicians such as Thomas Sydenham in England (1624–89) contended that medicine should be practised only through observation of patients and monitoring therapies. He also abhorred bloodletting.⁵² In Ireland, while medical doctors such as Thomas Arthur (1593–1666) remained confirmed Galenists, physicians like John Archer (*fl.* 1660–84), William Fogarty (d. 1678) and William Currer (d. 1668) promoted the new chemical medicine under the patronage of James Butler, first duke of Ormond, who was also a devotee of iatrochemistry.⁵³ William Harvey's demonstration of the circulation in 1628 should have sounded the death knell for bloodletting, but it continued to be a major therapeutic option. The topic was occasionally discussed at the meetings of the Dublin Philosophical Society, the hub of new scientific thinking in Restoration Ireland.⁵⁴ The contemporary view among elite graduate physicians was that fevers were due to an excess of hot, agitated blood and the sensible treatment was to drain some of it away by bloodletting.⁵⁵ The blood was now mostly taken from the arm in preference to the myriad anatomical sites used in the medieval period. Patients too weak for bloodletting were offered milder alternatives such as the application of leeches or cupping. John Barry was bled following a fall in Lismore in 1635.⁵⁶ Dr Upton and two colleagues had similar recourse in their treatment of Sir John Percival in April 1686. He suffered from 'a looseness' for which he was bled eight ounces (223 ml) of blood from one arm one day and another eight from the opposite arm the next day.⁵⁷ It proved unsuccessful, he died seven days later.

⁵¹ Elizabeth Boran, 'Collecting medicine in early eighteenth-century Dublin: the library of Edward Worth', in John Cunningham (ed.), *Early modern Ireland and the world of medicine* (Manchester, 2019), 165–87:174–5; The Edward Worth Library, (<https://edwardworthlibrary.ie/our-catalogue/>) (7 February 2021).

⁵² Heinrich Stern, *Theory and practice of bloodletting* (New York, 1915), 32–4; Porter, *The greatest benefit to mankind*, 229–30; H.J. Cook, 'Sydenham, Thomas (bap. 1624, d. 1689), physician', *Oxford Dictionary of National Biography*. 23 September 2004 (<https://www-oxforddnb-com.proxy.lib.ul.ie/view/10.1093/ref:odnb/9780198614128.001.0001/odnb-9780198614128-e-26864>) (7 February 2021).

⁵³ Mary Anne Lyons, 'The role of graduate physicians in professionalising medical practice in Ireland, c. 1619–54', in James Kelly and Fiona Clark (eds), *Ireland and medicine in the seventeenth and eighteenth centuries* (Farnham, 2010), 17–37:31; Peter Elmer, 'Promoting medical change in restoration Ireland: the chemical revolution and the patronage of James Butler, duke of Ormond (1610–88)', in John Cunningham (ed.), *Early modern Ireland and the world of medicine* (Manchester, 2019), 84–101:88–91.

⁵⁴ K.T. Hoppen, *Papers of the Dublin Philosophical Society 1683–1709* (2 vols, Dublin, 2008), 1, 54–5.

⁵⁵ David Weatherall, *Science and the quiet art* (Oxford, 1995), 41.

⁵⁶ John Barry to Philip Percival, 3 August 1635 in HMC, *Reports on the manuscripts of the Earl of Egmont* (2 vols, London, 1905–09), vol. 1, 81.

⁵⁷ Dr Upton to Robert Southwell, 29 April 1686 in HMC, *Egmont*, vol. 2, 183–5.

At the beginning of the eighteenth century, Henry Cope, twice president of the Royal College of Physicians of Ireland articulated the established medical view on bleeding in his book *Medicina Vindicata*. He stated that ‘bleeding, vomiting and purging are the chief operations in physis, by which diseases are cured and health preserved’; all accepted this philosophy ‘excepting a few enthusiastic chemists, who...boasted that all...diseases might be eradicated by one medicine’.⁵⁸ While physicians recommended bleeding it was the surgeons and apothecaries who performed the procedure. Very often non-physician practitioners and others proceeded to ‘bleeding, vomiting and purging’ on their own initiative, eliciting a robust response from the physicians; in 1725 they petitioned the Irish House of Commons for a bill ‘to prevent abuses in the practice of physis’.⁵⁹ In response Humphry Markwell argued that the physicians were motivated by avarice and pointed out that they had been unable ‘to convince the hundredth part of this city that they can cure folks better than their neighbours’.⁶⁰ The bill did not pass, but the century was dominated by rivalry between the various medical professionals, eventually resolved by the emergence of separate regulatory bodies for physicians, surgeons and apothecaries.⁶¹ The frequency with which people were bled attests to the popularity of the procedure.⁶² For example, in January 1787 the elderly Mrs Delaney was treated for a fever with fasting and bleeding on two occasions, but the illness continued for two months thereafter.⁶³ Mrs Delaney’s correspondence is so full of references to bloodletting that the nineteenth-century editor of her letters, Lady Llanover, commented that it was

⁵⁸ Although the book was published anonymously Henry Cope (1686–1743) was identified as the author in a copy of the work in the Worth Library Collection. Henry Cope, *Medicina Vindicata: or reflections on bleeding, vomiting and purging, in the beginning of fevers, smallpox, pleurisies and other acute diseases* (Dublin, 1727), 7; Royal College of Physicians of Ireland, *Lives of the presidents, Henry Cope* (<https://rcpi-live-cdn.s3.amazonaws.com/wp-content/uploads/2020/06/20-Henry-Cope.pdf>) (24 January 2021).

⁵⁹ Cited in Susan Mullaney, ‘The evolution of the medical professions in eighteenth-century Dublin’, in John Cunningham (ed.), *Early modern Ireland and the world of medicine* (Manchester, 2019), 232–52:241–3.

⁶⁰ Humphry Markwell, *Medicina Denudata: or an examination of some reflections on bleeding, vomiting and purging, in the beginning of fevers, smallpox, pleurisies and other acute disease* (Dublin, 1727), 10.

⁶¹ James Kelly, ‘The emergence of scientific and institutional medical practice in Ireland, 1650–1800’ in Greta Jones and Elizabeth Malcolm (eds), *Medicine, disease and the state in Ireland, 1650–1940* (Cork, 1999), 21–39; James Kelly, ‘Health for sale: mountebanks, doctors, printers and the supply of medication in eighteenth-century Ireland’, in *Proceedings of the Royal Irish Academy* 108C (2008), 75–113; Mullaney, ‘The evolution of the medical professions in eighteenth-century Dublin’, 232–52.

⁶² James Kelly, ‘“Bleeding, vomiting and purging”: the medical response to ill-health in eighteenth-century Ireland’, in Catherine Cox and Maria Luddy (eds), *Cultures of care in Irish medical history 1750–1970* (Basingstoke, 2010), 13–36.

⁶³ Lady Llanover (ed.), *The autobiography and correspondence of Mary Granville, Mrs Delaney* (second series, 3 vols, London, 1862) vol. 3, 435.

‘almost marvellous that anybody ever passed the age of forty’ and no surprise ‘at the frequency of deaths after illness’.⁶⁴ The 88 year old Mrs Delaney was bled and blistered for the last time shortly before her death in April, 1788.⁶⁵ Sometimes, complications occurred. On 1 June 1742 the *Dublin Gazette* reported that John Jephson, archdeacon of Cork, died by having his arm cut off, which was occasioned when the person who bled him pricked the artery.⁶⁶ In 1765 Sylvester O’Halloran described five patients who developed swelling and inflammation of the limb following phlebotomy resulting in death in two of the cases.⁶⁷

James Kelly has shown that self-medication was very popular in Ireland as elsewhere in the later early-modern era.⁶⁸ The spectrum of disease that might be treated by bleeding was summarised by Dr Theophilus Lobb (1678–1763) in his book, *The good Samaritan or useful family physician*, published in Dublin in 1764:

In a word, wherever prevail sore eyes, a sciatica, dry husky cough, an headache, inflammations of the womb or bladder, a virulent gonorrhea, cordee, buboes, venereal stricture, inflamed piles, hot rheumatism, dry gripes, sore throat, an asthma, cholic, strangury (sic), gravel, nephritic pains, haemorrhages, an inveterate itch, and the like, the opening of a vein is of peculiar service.⁶⁹

Another pamphlet *Every man his own physician*, which was also reproduced in the *Dublin Magazine* in 1764, recommended bleeding, blistering and the ingestion of a solution made from horse dung, Penny-royal-water and Venice treacle as a cure for pleurisy.⁷⁰ Dr William Buchan’s *Domestic medicine or a treatise on the prevention and cure of diseases by regimen and simple medicine*, several editions of which were published in Dublin,⁷¹ advocated bleeding for at least 26 different conditions and noted that it was carried out by midwives, gardeners, blacksmiths and others. He described clearly how the procedure should be performed using a tourniquet and a lancet. He thought bleeding to syncope was

⁶⁴ Llanover *The autobiography and correspondence of Mary Granville*, vol 2, 318: fn. 1.

⁶⁵ Llanover *The autobiography and correspondence of Mary Granville*, vol. 3, 477.

⁶⁶ *Dublin Gazette*, 1 June 1742.

⁶⁷ Sylvester O’Halloran, *A complete treatise on gangrene and sphacelus with a new method of amputation* (London, 1765), 90–103.

⁶⁸ James Kelly, ‘Domestic medication and medical care in late early modern Ireland’, in Kelly and Clark (eds), *Ireland and medicine in the seventeenth and eighteenth centuries*, 109–135:112.

⁶⁹ Theophilus Lobb, *The good Samaritan or useful family physician: containing observations on the most frequent diseases of men and women, infants and children; with directions for the management of the sick and a collection of the most approved receipts for making and preparing some cheap, easy, safe and efficacious medicines for their recovery. Likewise, directions concerniong bleeding* (Dublin, 1764), iv.

⁷⁰ John Theobald, *Every man his own physician* (2nd ed, London, 1764), 27–28; *Dublin Magazine*, 1 August 1764.

⁷¹ Kelly, ‘Domestic medication and medical care’, 127.

ridiculous pointing out that the mere sight of a lancet was enough to make some people faint. He ridiculed ‘country people’ for talking of ‘head-veins, heart veins, breast veins etc.’; all blood vessels arise from the heart and return to it again so that it did not matter where the blood was taken from. The country people, being ignorant of Harvey’s work, harked back to the medieval paradigm that bleeding from specific sites was good for specific diseases. Buchan was equally scornful of their ‘foolish prejudice’ that the first bleeding was the most efficacious and therefore delayed until they ‘think themselves in extreme danger’, and that ‘bleeding at certain stated periods or seasons had likewise bad effects’.⁷²

Charles Creighton observed that an outbreak of a ‘nervous fever’ in Ireland around 1771 was found not to respond well to ‘bleeding, that first and grand auxiliary of the physician in treating inflammatory disorders’. He suggested that the prevalence of this type of fever in Britain and Ireland in the middle of the eighteenth century ‘drove bloodletting in fevers out of fashion’.⁷³ While most doctors used bleeding from time to time, sentiment generally turned against it as the eighteenth century moved to a close.⁷⁴ In 1810 Dr Martin Tuomy in Dublin wrote in relation to scarlatina: ‘general blood-letting in this town is seldom admissible; and in some cases where it was tried it proved hurtful’.⁷⁵ However, it continued to possess influential champions, such as Dr William Cullen (1710–90) in Edinburgh. He was convinced that the inflammation of the nervous system was pre-eminent in causing disease; he coined the term ‘neurosis’.⁷⁶ In his view bleeding was ‘by much the most powerful remedy in diminishing all inflammation’ and was the ‘most powerful and effectual remedy’.⁷⁷ Nevertheless, he warned against excess bleeding noting that ‘a certain quantity drawn from the veins may even prove mortal’.⁷⁸ He concluded: ‘I must say therefore that there are certain limits to the use of bleeding in inflammatory cases, but I find it difficult to decide how these limits are to be measured’.⁷⁹

No such hesitation bothered his disciples John Brown (1735–88) in Scotland and Benjamin Rush (1746–1813) in America, both of whom were

⁷² William Buchan, *Domestic medicine or a treatise on the prevention and cure of diseases* (London, 1784), 629–33.

⁷³ Charles Creighton, *A history of epidemics in Britain* (2 vols, Cambridge, 1891, 1894), ii, 246–7.

⁷⁴ Tony Farmar, *Patients, potions and physicians, a social history of medicine in Ireland*, (Dublin, 2004), 73.

⁷⁵ Martin Tuomy, *A treatise on the principal diseases of Dublin* (Dublin, 1810), 264.

⁷⁶ W.F. Bynum, ‘William Cullen (1710–1790) chemist and physician’, *Oxford Dictionary of National Biography*, consulted at <http://www.oxforddnb.com.proxy.lib.ul.ie/view/10.1093/ref:odnb/9780198614128.001.0001/odnb-9780198614128-e-6874> (2 March 2018).

⁷⁷ John Thomson (ed.), *The works of William Cullen M.D.* (Edinburgh, 1827), 16.

⁷⁸ Thomson, *The works of William Cullen*, 16.

⁷⁹ Thomson, *The works of William Cullen*, 17.

ardent bleeders.⁸⁰ In France François-Joseph-Victor Broussais (1772–1838) championed bloodletting especially with leeches, while in Dublin Dr Thomas Mills was a firm believer. Mills, a physician at the Cork Street Fever Hospital, ‘blooded’ 209 patients in 1810, of whom nine died.⁸¹ He was greatly influenced by the London physician Henry Clutterbuck (1767–1856) who restated Cullen’s view that the brain was the ‘true seat of morbid affection in fever’.⁸² In his book *An essay on the utility of bloodletting in fever*, dedicated to Clutterbuck, Mills concluded that all fever is of one kind caused by inflammation, but different varieties occur depending on the organ or part affected. Bloodletting reduced the mortality of fever by removing ‘pain, heat or uneasiness’ and preserving the strength of the patient.⁸³ His usual regime was to bleed *unciae octo* (8oz) of blood from the arm; in addition, he used leeches, blistering and purgatives containing mercury and antimony, and he had no hesitation in repeating the treatment.⁸⁴ Similarly, William Dease (1752–98) a prominent Dublin surgeon used bleeding and purging in treating head injuries;⁸⁵ in contrast his contemporary Sylvester O’Halloran (1728–1807) in Limerick was of the ‘decided opinion’ that bleeding had no place in the management of skull fractures.⁸⁶

Bloodletting was performed in an elaborate number of ways; a distinction being made between general and local venesection. General bleeding was achieved by opening a vein in the arm, foot or neck; the jugular vein was the preferred site in children. Opening an artery was favoured for diseases of the head or the eye, or when blood could not be obtained from a vein. The temporal artery was preferred as it ‘generally affords as much blood as is required’, but occasionally the radial artery was opened.⁸⁷ The shed blood was collected in a dish or bowl sometimes specially designed for that purpose. A variety of instruments were deployed to puncture the veins. A fleam had a blade at right angles to the shaft which sometimes folded up like a penknife; different sized blades were available. Lancets, which were sometimes spring loaded, had a double-edged sharp-pointed blade to make an incision into the vein. Scarificators were devices containing several spring-loaded rotary blades designed to make simultaneous cuts in the skin.⁸⁸ Scarification could be used on its own or in combination with

⁸⁰ Thomas, ‘The demise of bloodletting’, 72–7.

⁸¹ Thomas Mills, *An essay on the utility of bloodletting in fever* (Dublin, 1816), 220.

⁸² Henry Clutterbuck, *An inquiry into the seat and nature of fever* (London, 1807), 34.

⁸³ Mills, *An essay on the utility of bloodletting*, 327.

⁸⁴ Mills, *An essay on the utility of bloodletting*, 230–5.

⁸⁵ William Dease, *Observations on wounds of the head* (London, 1776), 8.

⁸⁶ Sylvester O’Halloran, *A new treatise on the different disorders arising from external injuries of the head* (Dublin, 1793), 237–8.

⁸⁷ John Elliotson, *The principles and practice of medicine* (London, 1839), 122.

⁸⁸ Audrey Davis and Tony Appel, ‘Bloodletting instruments in the National Museum of History and Technology’, *Smithsonian Studies in History and Technology* 41 (1979), 1–124:10–15.

cupping; it was thought to be especially useful in cases of inflammation of the eye, tonsils and haemorrhoids.⁸⁹

Local bleeding, depletion by leeching, and cupping were used as adjuncts to general bleeding; some diseases required only local bleeding.⁹⁰ Leeches (*Hirudo medicinalis*) were used for bloodletting from classical times but enjoyed a revival in the early nineteenth century.⁹¹ Ireland was the first country in Europe to exhaust its supply of native leeches and to import leeches as early as 1750. After the Napoleonic wars French leeches were imported into Britain and Ireland, but were less favoured than the English variety as they were larger in size and sometimes associated with severe reactions.⁹² In 1819 Maria Edgeworth noted that her brother Lovell was suffering from ‘leech bites’ from a ‘poisonous’ French leech, and recounted how a lady in London developed a swelling of her head following the application of a similar leech to her gum.⁹³ Leeches were applied in large numbers to the skin near the area of supposed inflammation, often around the head and neck, and the abdomen. Cupping or blistering was thought by some to be ‘a more efficient remedy than leeching’.⁹⁴ Also an ancient technique, a blister was raised on the skin by applying a hot glass to it and leaving it in place for about three minutes. As the air inside the glass cooled, a vacuum was created producing suction and dilation of the underlying skin blood vessels.⁹⁵ Cupping was thought to be particularly useful when applied to the neck, behind the ears, the temples and over the chest, liver and kidneys.

The contraction and demise of bleeding in the nineteenth century

The Dublin school

The first half of the nineteenth century was a golden age for Irish medicine as a generation of medical practitioners set new standards for expert medical care. Treatment, based on careful analysis of clinical features, correlated with pathological findings at autopsy.⁹⁶ Purging, bleeding and blistering continued to dominate treatment, however, although a change in attitudes was perceptible. General bloodletting was resorted to less often but local ‘depletion’ and blistering

⁸⁹ Marshall Hall, ‘Bloodletting’, in John Forbes, Alexander Tweedie and John Connolly (eds), *The cyclopaedia of practical medicine* (London, 1833), 275–81: 278.

⁹⁰ Hall, ‘Bloodletting’, 277–8.

⁹¹ J.M. Hyson, ‘Leech therapy: a history’, *Journal of the History of Dentistry* 53 (2005), 25–27.

⁹² R.T. Sawyer, ‘History of the leech trade in Ireland, 1750–1915: microcosm of a global commodity’, *Medical History* 57 (2013), 420–441:421–6.

⁹³ Maria Edgeworth to Margaret Ruxton, 7 July 1819 in *A memoir of Maria Edgeworth with a selection of her letters by the late Mrs. Edgeworth* (3 vols, London, 1867), 2, 40.

⁹⁴ Hall, ‘Bloodletting’, 278.

⁹⁵ Shabi Furhad and A.A. Bokhari, ‘Cupping Therapy’ *StatPearls [Internet]* (Treasure Island Florida, 2020), (<https://www.ncbi.nlm.nih.gov/books/NBK538253/>) (22 February 2020).

⁹⁶ R.J. Graves, *A system of clinical medicine* (Philadelphia, 1848), 655–6.

continued. In writing of tubercular meningitis in 1848 Robert Graves described his mode of treatment:

My plan is to resort to bloodletting, general and local, unless the development of tubercles be very far advanced. I have recourse to general bloodletting once, and once only, even in adults... Local bleeding is to be directed, so long as the patient can bear it, that is to say, until he becomes pale, and the flush is gone.⁹⁷

In 1850 Dr R. Mayne, physician to the South Dublin Union Workhouse, advocated the application of leeches to the groin and cupping of the gluteal region to treat *phlegmasia dolens* which developed as a consequence of dysentery.⁹⁸ For acute dysentery he found local bleeding by 'leeching the verge of the anus repeatedly' provided the best relief especially of tenesmus.⁹⁹ In 1853 Sir Dominic Corrigan advocated the use of 'leeches, blistering and opium' in the treatment of follicular enteritis (typhoid fever); 'leeching holds, certainly, the first place' and 'from six to twelve leeches should be applied over the region of the caecum', followed by 'repeated small and successive blisterings'.¹⁰⁰

Bleeding was frequently used to treat puerperal fever, a devastating complication of childbirth. Dr Robert Collins (1801–68), an obstetrician at the Dublin Lying-in Hospital advocated the application of 'three or four dozen' leeches followed by a warm bath or stuping with hot flannels if the patient was not strong enough for the bath. He also used cupping and purging with calomel, ipecacuanha and opium, but warned strongly against general bloodletting based on his experiences in 1823 when he was an assistant physician. The master of the hospital at the time encouraged bleeding, but Collins was not impressed: 'the effect on the patient and the mortality was such as to satisfy me fully of the inexpediency of adopting this line of treatment'.¹⁰¹ In 1829, Dr Samuel Cusack, superintending accoucheur at the Wellesley Dispensary for Lying-in Females, Mercer Street, Dublin, advocated general bloodletting in puerperal fever. However, he cautioned that the procedure should be performed with the patient recumbent as the mere act of sitting up often produced syncope in this condition. After the general bleeding 'leeches, fomentations, calomel and purgatives are to follow'.¹⁰²

⁹⁷ Graves, *A system of clinical medicine*, 663.

⁹⁸ *Phlegmasia dolens* is a painful swollen leg caused by a deep venous thrombus that blocks the main venous drainage from the limb: R. Mayne, 'Observations on chronic dysentery', *Dublin Quarterly Journal of Medical Science* 10 (1850), 352–72:54.

⁹⁹ *Tenesmus* is a sensation of incomplete emptying of the bowel: Mayne, 'Observations on the late epidemic dysentery in Dublin', 294–308:301.

¹⁰⁰ D.J. Corrigan, *Lectures on the nature and treatment of fever* (Dublin, 1853), 100.

¹⁰¹ Robert Collins, *A practical treatise on midwifery, containing the result of sixteen thousand six hundred and fifty-four births, occurring in the Dublin Lying-in Hospital, during a period of seven years, commencing November 1826* (London, 1835), 392–7.

¹⁰² Samuel Cusack, 'A brief notice of the disease popularly termed puerperal fever', *London Medical Gazette* 3 (1829), 510–11.

Interestingly, Stokes remembered Cusack as saying that any form of bloodletting or depletion was inadmissible in the treatment of puerperal fever.¹⁰³ However regardless of the treatment, the outcome was frequently fatal; 70 to 80 per cent in the epidemic form of the disease and 25 to 30 per cent in the sporadic form died. In the words of the Edinburgh physician John Mackintosh, ‘there is not a corner in Britain where this formidable disease has not made many mourners’.¹⁰⁴

Fever epidemic 1817–19

In October 1815 Dr John Cheyne was appointed physician to the Hardwicke Fever Hospital, Dublin, just in time to deal with the fever outbreak that occurred between 1816, ‘the year without summer’, and 1819.¹⁰⁵ The *Dublin Hospital Reports* for these years attest to the continued reliance on bloodletting. From April 1816 to March 1817, 780 patients were admitted of whom 587 were bled with the lancet, 171 had leeches applied and 35 received cupping.¹⁰⁶ The 58 people (7 per cent) who succumbed include Maria Dillon, aged 30, who died from a gangrenous arm following a botched venesection performed prior to her admission to hospital.¹⁰⁷ Inquiries into the outbreak which affected up to 1.5 million people in Ireland, and caused 65,000 deaths between 1817 and 1819, revealed that while most doctors resorted to bloodletting as a treatment there was a spectrum of opinion as to its efficacy.¹⁰⁸

Dr John Davis from Ballytore in Co. Kildare reported that: ‘bloodletting hath been employed, as the principal and primary remedy for the fever in all cases under my care...upon an average of more than 100 cases seven out of ten have been so treated’.¹⁰⁹ He preferred bleeding from the arm using a lancet as it was faster than using leeches or bleeding from the temporal artery; the latter was used frequently for the relief of headache. ‘The sudden privation of from eight

¹⁰³ Stokes, *Lectures on fever*, 235.

¹⁰⁴ Christine Hallett, ‘The attempt to understand puerperal fever in the eighteenth and early nineteenth centuries: the influence of inflammation theory’, *Medical History*, 49 (2005), 1–28:3.

¹⁰⁵ This fever outbreak occurred as a consequence of the eruption of a volcano (Tambora) in Indonesia in April 1815. The ensuing dust veil resulted in a fall in temperature, heavy rains, failed harvests and fever in Ireland between 1816 and 1819. Clive Oppenheimer, ‘Climatic, environmental and human consequences of the largest known historic eruption: Tambora volcano (Indonesia) 1815’, *Progress in Physical Geography* 17 (2003), 230–259:251–3.

¹⁰⁶ John Cheyne, ‘Report of the Hardwicke Fever Hospital for the year ending on the 31st March, 1817’, *The Dublin Hospital Reports and Communications* (5 vols, Dublin, 1817), vol. 1, 1–117:64–5.

¹⁰⁷ Cheyne, ‘Report of the Hardwicke Fever Hospital’, 66.

¹⁰⁸ L.M. Geary, *Medicine and charity in Ireland 1718–1851* (Dublin, 2004), 74; F. Barker and J. Cheyne, *An account of the rise, progress and decline of fever lately epidemical in Ireland* (2 vols, London, 1821) vol. 1, 492.

¹⁰⁹ Barker and Cheyne, *An account of the rise, progress and decline of fever*, vol. 1, 389–90.

to twelve ounces of blood appears...to be more advantageous than the gradual abstraction of blood', it was observed.¹¹⁰ R.J. Brady, surgeon to the County Infirmary at Carrick-on-Shannon, was an ardent bleeder. He treated one patient with 'congestion of the liver' by removing 18oz (532 ml) of blood in the morning and another 16oz (472 ml) in the evening; the patient died nine days later. In all he estimated that he had bled 100 patients.¹¹¹ From Boyle, Dr John Verdon reported that he bled selected patients from the arm and temporal artery. He noted that among the poor large bloodlettings were popular with blood being taken from both arms as 'to keep up the balance of circulation...they think the safety of the patient depends upon taking blood from both feet'.¹¹²

By contrast, in a very detailed report from the Waterford Fever Hospital, Dr John King Bracken said that in 1817 he never used bloodletting 'by any mode, in any case'.¹¹³ In 1818 he did resort to bleeding and reported a small observational study of fifteen of his patients: 'six completely or very much relieved, three moderately relieved, in four the relief was partial, temporary or uncertain, and two not relieved at all'.¹¹⁴ He commented that bloodletting might be used safely in the management of fever but 'to do no injury is one thing and to relieve is another'.¹¹⁵ Dr John Murray from Cavan was also unimpressed by bloodletting: 'bleeding did not form a part of our general practice and I verily believe that none of our patients died for the want of it'.¹¹⁶

While some physicians doubted the efficacy of bleeding, most continued to use it therapeutically. William Stokes (1804–78) in his *Lectures on fever* given around 1840 observed that for many years 'the abuse of antiphlogistic treatment (bleeding) was carried out to an extent that is frightful to contemplate'.¹¹⁷ He wrote:

I remember when I was a student of the old Meath Hospital, there was hardly a morning that some twenty or thirty sufferers from acute local disease were not phlebotomized. The floor was running with blood; it was dangerous to cross the prescribing hall for fear of slipping; and these scenes continued to be witnessed for many years.¹¹⁸

Cholera

Asiatic cholera was another devastating disease that made its appearance in the early nineteenth century. Caused by the bacterium *Vibrio cholerae* it is

¹¹⁰ Barker and Cheyne, *An account of the rise, progress and decline of fever*, vol. 1, 390.

¹¹¹ Barker and Cheyne, *An account of the rise, progress and decline of fever*, vol. 1, 315–6.

¹¹² Barker and Cheyne, *An account of the rise, progress and decline of fever*, vol. 1, 324–5.

¹¹³ Barker and Cheyne, *An account of the rise, progress and decline of fever*, vol. 1, 261.

¹¹⁴ Barker and Cheyne, *An account of the rise, progress and decline of fever*, vol. 1, 261–2.

¹¹⁵ Barker and Cheyne, *An account of the rise, progress and decline of fever*, vol. 1, 262.

¹¹⁶ Barker and Cheyne, *An account of the rise, progress and decline of fever*, vol. 1, 381.

¹¹⁷ William Stokes, *Lectures on fever*, J.W. Moore (ed.) (Philadelphia, 1876), 9.

¹¹⁸ Stokes, *Lectures on fever*, 9.

characterised by profuse watery diarrhoea, rapid dehydration and hypovolaemic shock; without fluid replacement death ensues within hours.¹¹⁹ In the early nineteenth century bloodletting was used extensively in the treatment of cholera. Dr James Annesley, an East India Company army surgeon with considerable experience in treating cholera, explained the rationale for venesection; by reducing the blood volume bleeding relieves ‘the heart and lungs from oppression, and enables them to perform their functions’.¹²⁰ In 1832 Dr Nathaniel Alcock treated 22 cases of cholera at the Townsend Street Cholera Hospital, Dublin.¹²¹ Following Annesley’s advice, ‘having none other to act upon’, he also bled his patients.¹²² He soon became disillusioned. In one patient the removal of 8oz of blood resulted in the disappearance of a strong pulse followed shortly thereafter by the patient’s death. Alcock was convinced ‘that in this case the bleeding led to destruction’; he resolved never to bleed anyone again.¹²³ However, the receipts of the hospital for 1834 indicate that bloodletting continued: £39 17s 0d for leeches, £5 13s 0d for surgical instruments, £3 15s 0d for cupping instruments and £1 12s 6d for lancets for venesection. A bill of £438 17s 0d for coffins and burials also indicates that the treatments were often ineffective.¹²⁴ The overall mortality from the cholera epidemic in Ireland was 38 percent but higher in some areas.¹²⁵

The Great Famine

Fever was a significant cause of mortality during the Great Famine.¹²⁶ Just as Barker and Cheyne had done 30 years previously Sir William Wilde circulated a questionnaire in 1848 seeking information on the progress of ‘the late disastrous epidemic’ around the country. The questionnaire asked about therapies

¹¹⁹ Centers for Disease Control and Prevention, ‘Cholera - *Vibrio cholerae* infection’, (<https://www.cdc.gov/cholera/general/index.html>) (13 June 2018).

¹²⁰ James Annesley, *Sketches of the most prevalent diseases of India: comprising, a treatise on the epidemic cholera of the East: statistical and topographical reports of the diseases in the different divisions of the army under the Madras presidency: embracing also the annual rate of mortality, &c. of European troops: and practical observations on the effects of calomel on the alimentary canal, and on the diseases most prevalent in India* (London, 1825), 167.

¹²¹ Nathanael Alcock, *A treatise on cholera* (London, 1849), 63–88.

¹²² Alcock, *A treatise on cholera*, 120.

¹²³ Alcock, *A treatise on cholera*, 73–4.

¹²⁴ *A return of the receipts and expenditure of the Central Board of Health; and of the General Board of Health for the city of Dublin*, H.C. 1834 (447) vol. 51, 1–28.

¹²⁵ *Report of the commissioners appointed to take the census of Ireland for the year 1841*. H.C. 1843 (504), vol. 24, 624–625.

¹²⁶ ‘Fever’ was a generic term for a variety of diseases including typhus fever, relapsing fever, typhoid or enteric fever, dysentery, tuberculosis, smallpox, measles and Asiatic cholera: Larry Geary, ‘Medical relief and the Great Famine’, in John Crowley, W.J. Smyth and Mike Murphy (eds), *Atlas of the Great Irish Famine 1845–52* (Cork, 2012), 199–208:199.

including bleeding used in treating patients. The experience of Dr Robert Law, a professor of medicine in the School of Physic, Dublin, is typical. He was very happy to use leeches especially along the spine and around the head as a local therapy but was reluctant to use general bloodletting. His single experience of general bleeding almost ended in disaster. Two visiting French doctors who were studying famine fever accompanied him to Sir Patrick Dun's hospital. At the urging of M. Rodier, Dr Law directed that a man be bled 6oz from the arm. That evening the patient was in-extremis but recovered over the next few days with aggressive treatment with wine and brandy. Dr Law commented ruefully: 'it was the last venesection I allowed to be performed on any of my fever patients'.¹²⁷ From the replies received by Wilde it is apparent that local bloodletting using leeches (83 per cent) and blistering/cupping (96 per cent) were popular remedies for fever during the Great Famine, but general bloodletting was much less frequently employed (30 per cent).¹²⁸ Thus, bloodletting by venotomy began to wane in Ireland as a treatment in the years between the fever epidemics of 1817–19 and the Great Famine (1845–52).

The end of bleeding

As the nineteenth century progressed the therapeutic efficacy of bloodletting was regarded with ever increasing skepticism. In a famous study, Pierre Charles Alexander Louis (1787–1872) observed a mortality rate of 44 per cent among patients with pneumonia who were bled early in the course of their disease compared with 25 per cent among those bled later. He concluded that bloodletting 'had no evident influence upon the progress of pneumonitis; and that it may be dispensed with in the treatment of pleurisy and pericarditis.'¹²⁹

Doctors debated the efficacy of bloodletting, most famously in Edinburgh, where Dr John Bennett argued that a recently observed decrease in mortality from pneumonia related directly to a decrease in the practice of bloodletting. His suggestions were vigorously rebutted by Dr William Allison who defended the *status quo*.¹³⁰ Sir William Stokes observed that general bloodletting had declined in Dublin around 1830 and in an address to the British Medical Association (BMA) in 1865 commented: 'we can hardly conceive a revolution in

¹²⁷ [William Wilde], 'Report on the recent epidemic fever in Ireland', *Dublin Quarterly Journal of Medical Science* 8 (1849), 270–339:323–4.

¹²⁸ [Wilde], 'Report on the recent epidemic fever in Ireland', 7 (1849), 64–126, 340–404; [Wilde], 'Report on the recent epidemic fever in Ireland' 8 (1849), 1–86, 270–339.

¹²⁹ P.C.A. Louis, (trans., C.G. Putman), *Researches on the effects of bloodletting in some inflammatory diseases, and on the influence of Tartarized Antimony and Venesection in pneumonitis* (Boston, 1836), 48–9.

¹³⁰ I.H. Kerridge and Michael Lowe, 'Bloodletting: the story of a therapeutic technique', *The Medical Journal of Australia*, 163 (1995), 631–33; R.G. DePalma, V.W. Hayes and L.R. Zacharski, 'Bloodletting: past and present', *Journal of the American College of Surgeons*, 205 (2007), 132–44.

practice more complete, venesection is now, from being the most frequent, the rarest of operations'.¹³¹ In 1882, William Stokes (Sir William Stokes' son), the then president of the Royal College of Surgeons in Ireland, in another address to the BMA highlighted 'the abandonment of an indiscriminate bloodletting in almost every form of acute surgical disease' as one of the major advances in surgery of the previous half century.¹³²

The work of Louis Pasteur (1822–95), Robert Koch (1843–1910) and others in the 1860s and 1870s proved conclusively that each infectious disease was caused by a specific microorganism.¹³³ The germ theory of disease led to the adoption of aseptic techniques in surgery. The quest to find agents that had antimicrobial activity culminated in the discovery of Salvarsan (arsenobenzol) as a treatment for syphilis in 1911.¹³⁴ Although bloodletting continued to be described in medical textbooks, it no longer had a place in the management of infection.¹³⁵ It was used for treating heart failure, hypertension and cerebral haemorrhage. On 12 August 1922, Arthur Griffith, president of Dáil Éireann collapsed from a stroke at a nursing home in Dublin. The surgeon Oliver St John Gogarty found him lying dead at the top of a stairs:

His left arm was outstretched and bloody. A long incision of four inches gaped where his pulse was. It was not bleeding, though the artery had been severed by Mr Meade, who was on the spot, the only attempt that could be made to counteract cerebral haemorrhage.¹³⁶

Bleeding was also used by non-medical people from time to time. In 1938 Agnes Boyle from Fahy in Co. Mayo recalled that bloodletting was carried out there 'in the olden times' to treat a disease called 'heat and cold' or pleurisy. Doctors were not resorted to, but a cure could be got from one of two 'quacks', Holmes of Lacken or Gill of Crossmolina. Bleeding was from the arm, foot, chin or ear, the amount depending on the colour of the blood which was collected on a saucer; the blacker the blood the more was removed.¹³⁷ However, by the second half of the twentieth century recourse to bloodletting as a medical treatment was not pursued in Ireland except for a small number of haematological problems such as haemochromatosis and polycythaemia.

¹³¹ William Stokes, 'The address in medicine', *British Medical Journal* 2 (1865), 133–42:134.

¹³² William Stokes, 'Address in surgery', *British Medical Journal* 2 (1882), 256–61:256.

¹³³ R.A. Buerki, 'Reception of the germ theory of disease in the American Journal of Pharmacy', *Pharmacy in History* 13 (1971), 158–68.

¹³⁴ Lorenzo Zaffiri, Jared Gardner and Luis H. Toledo-Pereyra, 'History of antibiotics: from Salvarsan to Cephalosporins', *Journal of Investigative Surgery* 25 (2012), 67–77.

¹³⁵ Parapia, 'History of bloodletting', 490–95; Stern, *Theory and practice of bloodletting*, (New York), 99–100.

¹³⁶ Oliver St John Gogarty, *As I was going down Sackville Street* (London, 1982), 195.

¹³⁷ A.M. Boyle, 'Bloodletting', *National Folklore Collection, The Schools' Collection*, 0145, (1938), 265–6.

Conclusions

Bloodletting in Ireland has a very long history. Based on the humoral medical tradition traceable to Hippocrates and Galen it was used to maintain health and treat disease. It is possible that Irish physicians of the early medieval period were aware of the classical theories and bled patients, but the evidence is scant. Bloodletting probably came to Ireland in the twelfth century and was practised thereafter by both the Anglo-Norman and Gaelic communities. Although challenged by new medical knowledge in the late sixteenth and early seventeenth centuries, bleeding continued to be pursued as a treatment for illness until the latter half of the nineteenth century. A variety of practitioners performed bleeding by opening a vein or an artery, or by the application of leeches. Cupping with or without scarification was also used. The discovery of microorganisms and the development of the germ theory of disease in the late nineteenth century finally put an end to bleeding as a therapeutic option for most conditions, but it continued to be recommended for problems such as heart failure and stroke. Venesection is still used today in medicine to deplete iron stores in haemochromatosis and leeches are used following some plastic surgery procedures. Complementary and alternative medical therapists also use cupping either on its own (dry cupping) or with bleeding (wet cupping) for several conditions, especially the relief of pain.¹³⁸ Iron is an essential element for metabolism in all living cells. Reduced bioavailability of iron in a host deprives an invading organism of this vital nutrient thereby inhibiting its virulence.¹³⁹ While modern medicine considers bloodletting an example of early therapeutic ignorance, it is just possible that as part of a health maintenance regimen bleeding may have provided some protection against infection to people in Ireland in the past.¹⁴⁰

¹³⁸ Shabi Furhad and A.A. Bokhari, 'Cupping Therapy' (<https://www.ncbi.nlm.nih.gov/books/NBK538253/>) (22 February 2020)

¹³⁹ J.E. Cassat and E.P. Skaar, 'Iron in infection and immunity', *Cell host & microbe* 13 (2013), 509–19.

¹⁴⁰ I would like to thank Dr Aoibheann Nic Dhonnchadha of the School of Celtic Studies at the Dublin Institute for Advanced Studies for her comments on earlier drafts of this paper.