

‘the first example ... of an extensive scheme of pure scientific medical investigation’: Thomas Beddoes and the Medical Pneumatic Institution in Bristol, 1794 to 1799

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Note to Readers

Because of the tendency of the Wedgwood, Watt and Boulton families to use the same forenames in succeeding generations, both the fore and surnames of correspondents are given consistently in the notes. Note on currency: £1 was divided into 20 shillings (s) and in turn a shilling was composed of 12 pennies (d). A guinea (g) was 21s or £1 1s. This abbreviation is used as one of the units of currency in the graph in appendix 1 and the table in appendix 3.

‘the first example ... of an extensive scheme of pure scientific medical investigation’: Thomas Beddoes and the Medical Pneumatic Institution in Bristol, 1794 to 1799

Right at the end of the eighteenth century, the practice of science in the British Isles underwent a fundamental, and as it turned out, lasting transformation. Substantial sums of money started to be acquired and spent in purchasing already existing buildings and turning them into spaces to undertake various practical scientific functions. During the second half of the 1790s the Andersonian Institution in Glasgow¹ and the Royal Institution in London’s Albemarle Street were established to provide scientific lectures while the Medical Pneumatic Institution (MPI) in Bristol was explicitly founded to undertake research. Such buildings possessed, in line with Enlightenment commitments to voluntary associations, a broad funding base and they seem to be an entirely new phenomenon, at least in Britain. One feature of these buildings was the need for a laboratory, either to prepare lecture demonstrations, or, in case of the MPI, to support medical scientific investigations or research.²

Of course a number of different types of laboratories already existed with various funding regimes. Some were linked to universities such as the Ashmolean in Oxford (going back to 1683);³ others were associated with preparing pharmaceuticals such as Apothecaries’ Hall in Dublin (1791),⁴ or added to already existing buildings housing learned bodies such as the Dublin Society (1795).⁵ Then there were laboratories funded privately by wealthy aristocrats such as that in Clapham, Surrey, built by and for Henry Cavendish (1731–1810)⁶ or by the 2nd Earl of Shelburne (1737–1805) at his Bowood seat in Wiltshire where Joseph Priestley (1733–1804) and Jan Ingen-Housz (1730–1799) worked.⁷

¹ James Muir, *John Anderson. Pioneer of Technical Education and The College he founded* (Glasgow, 1950).

² The essays in Andrew Cunningham and Perry Williams, eds., *The laboratory revolution in medicine* (Cambridge, 1982), only discussed the subject from the 1830s onwards, making no reference to either the MPI or Beddoes.

³ A.V. Simcock, *The Ashmolean Museum and Oxford Science, 1683-1983* (Oxford, 1984).

⁴ T.S. Wheeler and J.R. Partington, *The life and work of William Higgins, chemist, 1763–1825* (London, 1960), pp. 7-11.

⁵ *Ibid.*, 17 and Henry F. Berry, *The History of the Royal Society of Dublin* (London, 1915), p.356.

⁶ Christa Jungnickel and Russell McCormach, *Cavendish: The Experimental Life* (Lewisburg, 1998), pp.329-30.

⁷ Robert E. Schofield, *The Enlightened Joseph Priestley: A Study of his Life and Work from 1773 to 1804* (University Park, 2004), pp.3-143; Norman Beale and Elaine Beale, *Echoes of Ingen Housz: the long lost story of the genius who rescued the Habsburgs from smallpox and became the father of photosynthesis* (East Knoyle, 2011).

For lecturing, the new institutions drew on the eighteenth-century tradition of itinerant scientific lecturers who performed to paying audiences in towns or to the aristocracy or gentry in their country houses as depicted by Joseph Wright (1734–1797) of Derby. Of course chemists in London such as Bryan Higgins (c.1741–1818), and, later, William Nicholson (1753–1815) lectured in their own homes where they had their own laboratories.⁸ These were individuals whose income came from subscribers paying to attend their lectures. However, it seems to me, that there is a significant difference between what an individual was able to do and those seeking to construct broader support to establish, in the longer term, institutions based in dedicated buildings where science could be practised in all its manifestations.

In this paper I examine the founding and funding of the MPI, the only one of the three institutions established in the second half of the 1790s for the avowed purpose of scientific research. This made it unusual compared with other scientific organisations. A number of studies have discussed the MPI, but authors have named it incorrectly, referring to the Pneumatic Institute rather than Institution, more often than not missing off the vital purposive word Medical,⁹ or misdated the year it opened,¹⁰ all suggesting, at the very least, some degree of confusion about it.¹¹ Such studies have interpreted the MPI in a number of ways, mostly as an adjunct to other issues rather than as of historical significance in its own right. For example, it has been seen as something that the politically radical physician Thomas Beddoes (1760-1808) constantly worked towards as his main

⁸ For Higgins's laboratory in Greek Street, Soho, see Wheeler and Partington, *Higgins* p.2. There is a notebook recording his 1785 lectures in RI MS JD/1/1. For Nicholson see his advert for lectures in late 1799 at his Soho Square house, LoB MS 3782/12/99/19. For a general discussion of the cultural and social significance of such lecturers see Simon Schaffer, 'Natural Philosophy and Public Spectacle in the Eighteenth Century', *History of Science*, 1983, **21**: 1-43.

⁹ For example, Dorothy A. Stansfield, *Thomas Beddoes M.D. 1760-1808: Chemist, Physician, Democrat* (Dordrecht, 1984), p.145, part-entitled a chapter 'The Pneumatic Institute'.

¹⁰ Not helped by a typo that substituted 1799 for 1797 in Trevor H. Levere, 'Dr. Thomas Beddoes (1750-1808): Science and medicine in politics and society', *The British Journal for the History of Science*, 1984, **17**: 187-204, p.196, copied subsequently in, for example, Jan Golinski, *Science as Public Culture: Chemistry and Enlightenment in Britain, 1760-1820* (Cambridge, 1992), p.158.

¹¹ For a particularly confused account see Richard Holmes, *The Age of Wonder: How the Romantic Generation discovered the Beauty and Terror of Science* (London, 2008), pp.250-52 which, amongst much else, referred (p.251) to 'the Bristol Pneumatic Medical Institute'.

project from 1793 or 1794 until its opening¹² or as a curious institution that did not long survive, ‘a dream in printers’ ink, rather than a reality’ as Eliza Meteyard succinctly put it.¹³ But what has attracted most attention to the MPI, and thereby detracted from understanding the significance of the MPI on its own terms, was its role as the place where Humphry Davy (1778-1829) spent nearly two and half years in his inexorable move from provincial obscurity in Penzance to metropolitan fame in London and where he carried out his experiments studying the physiological effects of nitrous oxide and his very early electrical work.¹⁴ Little has been written about how precisely the MPI was established, and further study will still be needed to understand its staffing or how it was run. Part of the problem also stems from the first biography of Beddoes,¹⁵ which hardly discussed how the MPI was founded and funded and, where it did, was, as we shall see, inaccurate and in some respects misleading. Another problem has been that previous writers, in line with more conventional historiography, have concentrated on discussing the content of the science involved or the social location of such institutions.¹⁶ They have thus avoided discussing financial and material necessities, a crucial feature, I would suggest, in the social relations involved.¹⁷

Using correspondence and newspapers, some cited for the first time in studying the MPI, I will, in some detail, elicit the complexities and contingencies of this novel project to establish a research laboratory, when, by definition, there would be no precedent to guide the inexperienced actors involved. Such a detailed narrative is essential owing to the way some writers have compressed evidence relating to the establishment of the MPI during a period of just over five years between 1794 and 1799 into a single timeframe, thus not allowing for any room to appreciate its development. On occasion authors have used documents from

¹² For example, Mike Jay, *The Atmosphere of Heaven: The Unnatural Experiments of Dr Beddoes and his Sons of Genius* (New Haven, 2009), p.101 described it as Beddoes’s ‘main project’ and p.73 ‘By the early weeks of 1793 the idea of a medical pneumatic institution had become a practical proposition’.

¹³ Eliza Meteyard, *A Group of Englishmen (1795 to 1815) being Records of the Younger Wedgwoods and their Friends* (London, 1871), p.84.

¹⁴ June Z. Fullmer, *Young Humphry Davy: the Making of an Experimental Chemist* (Philadelphia, 2000); David M. Knight, *Humphry Davy: Science and Power* (Oxford, 1992); 2nd ed. (Cambridge, 1998).

¹⁵ John Edmonds Stock, *Memoirs of the Life of Thomas Beddoes, M.D.* (London, 1811).

¹⁶ Golinski, *Science as Public Culture*, p.158, who appreciated that financial support for the MPI was slow in coming, did see it as ‘rooted in an Enlightenment model of public science’.

¹⁷ Stansfield, *Beddoes*, pp.158-9, devoted less than two pages to how the MPI was funded while Jay, *Atmosphere*, pp.101-3, 144, skirted the issue and concentrated on the big name subscribers. Neither acknowledged that Beddoes never came close to meeting his target.

outside that period as if they belonged there.¹⁸ Since, as Kenneth Johnston has reminded us, the 1790s was a decade characterised by almost daily change in every aspect of life,¹⁹ such lumping requires disentangling to understand the specific processes that brought the MPI into existence.

Beddoes, the son of a reasonably wealthy tanner with significant land holdings in Shifnal, Shropshire, attended Pembroke College, Oxford. He then studied chemistry with Higgins in London and with Joseph Black (1728–1799) at Edinburgh University, before returning to Oxford where he took his MD in 1786. He followed this by a visit to France where he formed acquaintances with many leading chemists there, including Antoine Lavoisier (1743–1794). From 1787 until his final series of lectures delivered in the spring of 1792, he held the non-stipendiary Readership in Chemistry at the University of Oxford. He then resigned following disagreements in Oxford centring on his support for the French Revolution and his general politically radical position as a democrat²⁰ (though he remained in Oxford until at least the middle of August).²¹ Beddoes, an exemplary figure of the late Enlightenment, believed in reasoned argument (even he did not always act on it), the spread of knowledge beyond the intellectual community and voluntary associations to promote that knowledge. Some of these ideas did not commend themselves to the Tory government and his removal from Oxford was part of a concerted effort led by the Prime Minister, William Pitt (1759–1806), the Home Secretary, Henry Dundas (1742–1811), and the Foreign Secretary, Lord Grenville (1759–1834). They sought, even before Britain's formal entry into the war with newly Republican France declared on 1 February 1793 or the start of the Terror in France, to suppress or smother support for the French Revolution, Jacobinism and democratic ideas, processes occasionally referred to, with some exaggeration, as Pitt's terror.²² A republican and a democrat who would have voted for the execution of the deposed King of France, Louis XVI (1754–1793), Beddoes, even before the Terror got fully under way,

¹⁸ For example, Holmes, *Wonder*, p.252, cited Thomas Beddoes to Davies Giddy, 21 January 1802, CRO MS DG/42/8, without stating the date in his reference, in relation to the support of the Duchess of Devonshire for the MPI. Furthermore, this letter, which Holmes additionally located, as being in Davy manuscripts in CRO (which do not exist), referred to a wager between Beddoes and the Duchess, when it was with the Duke in relation to curing his gout. Curiously George Rousseau, 'Political gout: Dissolute patients, deceitful physicians, and other blue devils', *Notes and Records of the Royal Society of London*, 2009, **63**: 277-96, p.282, made precisely the same errors, without referring to Holmes.

¹⁹ Kenneth R. Johnston, *Unusual Suspects: Pitt's Reign of Alarm and the Lost Generation of the 1790s* (Oxford, 2013), p.324.

²⁰ Trevor H. Levere, 'Dr. Thomas Beddoes at Oxford: Radical Politics in 1788-1793 and the fate of the Regius Chair in Chemistry', *Ambix*, 1981, **28**: 61-9.

²¹ Thomas Beddoes to Davies Giddy, 13 August 1792, CRO MS DG/41/32.

²² Kenneth R. Johnston, *Unusual Suspects*, devoted a chapter (pp.96-110) to Beddoes.

was already critical of Jacobin leaders such as Jean-Paul Marat (1743–1793) and Maximilien Robespierre (1758–1794).²³ He appreciated that the way the Revolution had developed was the very antithesis of the Enlightenment values to which he remained strongly committed; he came to believe, for instance, that riots should be ‘suppressed’.²⁴ But the British government and its supporters, as we shall see, did not appreciate such differentiations between French and English radicals and Beddoes was consistently and constantly labelled a Jacobin, providing a significant restraint to developing his career.

Now in need of an income, Beddoes, whose previous literary output had been mostly limited to translations and editing texts, began writing what would become in the ensuing years a large corpus of books and pamphlets, mostly promoting his medical views. Thus during his final months in Oxford, he completed his *Observations on the nature and cure of calculus, sea scurvy, consumption, catarrh, and fever*, dated 30 July 1792,²⁵ and his *Observations on the Nature of Demonstrative Evidence*, dated Oxford, 6 September 1792 and dedicated to his former student Davies Giddy (1767–1839) of Tredega, Cornwall.²⁶ Both texts were published in London the following year, the former by John Murray (1737–1793)²⁷ (with whom Beddoes had dealt since 1785²⁸) and the latter by the radical bookseller Joseph Johnson (1738–1809). In his medical *Observations* Beddoes considered, amongst other things, the physiological properties of gases (a term he seems to have first used in English following its introduction by French chemists in the late eighteenth century). Those who had identified new airs, as they were previously called, included Black, Cavendish and the radical Unitarian Priestley, with whom Beddoes had much in common politically, though not theologically or chemically. Priestley discovered what he named dephlogisticated air, but which Lavoisier and his followers, including Beddoes, called oxygen. Beddoes was especially interested, both theoretically and experimentally, in what happened when animals respired gases. He considered that ‘our nervous and muscular systems may be considered as a sort of steam-engine’²⁹ – a metaphor reflecting his knowledge of the industrialising Midlands and his acquaintance

²³ Thomas Beddoes to Davies Giddy, 8 November 1792, CRO MS DG/41/5.

²⁴ Thomas Beddoes to Davies Giddy, 23 April 1796, CRO MS DG/42/23.

²⁵ Thomas Beddoes, *Observations on the nature and cure of calculus, sea scurvy, consumption, catarrh, and fever: together with conjectures upon several other subjects of physiology and pathology* (London, 1793), p.viii.

²⁶ Thomas Beddoes, *Observations on the Nature of Demonstrative Evidence; with an explanation of certain difficulties occurring in the Elements of Geometry: and Reflections on language* (London, 1793), p.xii.

²⁷ It was advertised in *The Times*, 30 January 1793, 2b.

²⁸ William Zachs, *The First John Murray and the Late Eighteenth-Century London Book Trade, With a Checklist of his Publications* (Oxford, 1998), p.320.

²⁹ Beddoes, *Observations on ... calculus*, p.258.

with its business and engineering leaders. He thought that pneumatic chemistry might possibly be used to provide cures for specific diseases such as scurvy³⁰ but it was the general use of gases that he thought would be most advantageous: ‘nothing would so much contribute to rescue the art of medicine from its present helpless condition, as the discovery of the means of regulating the constitution of the atmosphere’.³¹

By the middle of September 1792 Beddoes had returned to the West Midlands, staying either in Shifnal, or with the wealthy industrialists James Keir (1735–1820) in Ketley³² or William Reynolds (1758–1803) in West Bromwich.³³ There is no evidence to suggest what plans, if any, he might have formed for life after Oxford. He became involved in political activism that drew the attention of the Home Office and his name, along with Priestley’s and others, appeared on a list of ‘disaffected and seditious persons’.³⁴ Returning from a short trip to Wales, Beddoes ‘found inflammatory falsehoods in full circulation in Staffordshire & Shropshire’ about him.³⁵ He contemplated establishing a newspaper to guard ‘the people ag^t the terrible effect of absurd rumours’,³⁶ but nothing came of this idea. Late in the year he published locally a short pamphlet, *The history of Isaac Jenkins*,³⁷ warning of the evils of drink. This rapidly became a popular text beyond the West Midlands; by the start of 1793 nearly 5,000 copies had ‘been distributed or sold’.³⁸ During the year Murray and Johnson in London, published two further editions,³⁹ whilst the writer on education Richard Edgeworth (1744–1817) had several hundred copies printed in Ireland.⁴⁰

According to his later recollection, the physiological ideas that Beddoes put forward in his medical *Observations* prompted financial support from three of his friends: Reynolds, his brother Joseph Reynolds (1768–1859) and William Yonge (1748–1827), a Shifnal Surgeon. Towards the end of 1792 each man contributed £200 towards the construction of a pneumatic apparatus and for an operator’s

³⁰ *Ibid.*, p.45.

³¹ *Ibid.*, p.147.

³² Stock, *Beddoes*, p.88.

³³ Thomas Beddoes to Davies Giddy, 12 September 1792, CRO MS DG/41/19.

³⁴ ‘Disaffected & seditious persons’, 28 July 1792, TNA HO42/21, f.214-5. See also Evan Nepean to Isaac Browne, 1 November 1792, TNA HO42/22, f.233-4 (copy).

³⁵ Thomas Beddoes to Davies Giddy, 21 October 1792, CRO MS DG/41/20.

³⁶ Thomas Beddoes to Davies Giddy, 8 November 1792, CRO MS DG/41/5.

³⁷ Thomas Beddoes, *The history of Isaac Jenkins, and of the sickness of Sarah his wife, and their three children* (Madeley, 1792).

³⁸ Thomas Beddoes to Davies Giddy, 10 January 1793, CRO MS DG/41/53.

³⁹ The first of these was advertised in *The Sun*, 20 July 1793, 1b.

⁴⁰ Richard Edgeworth to Thomas Beddoes, 7 October 1793, Bodleian MS dep. c. 134/1.

salary to carry out the experimental investigations using it.⁴¹ According to Beddoes's first biographer, Yonge and Beddoes together with his former assistant in Oxford, James Sadler (1753–1828), visited London in March 1793 to identify a location to house the apparatus and accommodate patients;⁴² such a visit might also have been connected with Beddoes seeing both his books through the press. London was not deemed a suitable location for the project for reasons that are not clear. It was possibly related to Beddoes not wishing to work in a city leading the war against Republican France, somewhere he would have been an unpopular figure. All through the 1790s, Beddoes was a strong critic of Britain's participation in the war and of its deleterious, as he saw it, domestic and economic effects.

By early April 1793 Beddoes had acquired the lease (arranged by Sadler) on 11 Hope Square, Hotwells,⁴³ a small spa village just south of Clifton and a mile or so to the west of Bristol. Then the fifth largest city in England and eighth in the British Isles, Bristol's enormous wealth derived largely from the Atlantic trade. Hotwells, located on the Bristol bank of the river Avon, dividing it from Somerset, had, since the seventeenth century, a long tradition of visitors coming to take the waters to benefit their health.⁴⁴ Possibly by the middle of the month,⁴⁵ and certainly by the end, Beddoes had settled there following a last visit to Oxford to undertake the 'tedious process' of packing up his equipment as part of his 'long farewell of this seat of the Muses'.⁴⁶

The Midlands engineer James Watt (1736–1819) was in no doubt that Beddoes chose Bristol 'for the greater [medical] practice'.⁴⁷ Bristol was also geographically convenient for Bowood, and there is evidence suggesting that Beddoes had links there, especially with Ingen-Housz.⁴⁸ It is possible, however,

⁴¹ Thomas Beddoes and James Watt, *Considerations on the Medicinal Use of Factitious Airs, and on the manner of obtaining them in large quantities*, parts 1 and 2, London, [1794], p.3. See also Stock, *Beddoes*, p.90, but he may have just drawn this from Beddoes's account.

⁴² Stock, *Beddoes*, p.90.

⁴³ Thomas Beddoes to Davies Giddy, 7 April 1793, CRO MS DG/41/2, told him to send his next letter to Hope Square. For Sadler's role, see Stock, *Beddoes*, p.92.

⁴⁴ Phyllis Hembry, *The English Spa 1560-1815: A Social History* (London, 1990), pp.245-50.

⁴⁵ William Yonge to Thomas Beddoes, 15 April 1793, in Thomas Beddoes, *A Letter to Erasmus Darwin, M.D. on a new method of treating pulmonary consumption, and some other diseases hitherto found incurable* (Bristol, 1793), pp.22-3 was addressed to Hotwells.

⁴⁶ Thomas Beddoes to Davies Giddy, 7 April 1793, CRO MS DG/41/2.

⁴⁷ James Watt sr to Joseph Black, 17 July 1793, in Robert G.W. Anderson and Jean Jones (eds), *The Correspondence of Joseph Black*, 2 volumes (Farnham, 2012), 2: 703.

⁴⁸ See Jan Ingen-Housz to Thomas Beddoes, 4 August 1794, quoted in Beddoes and Watt, *Considerations*, part 1, p.31. Beale and Beale, *Ingen Housz*, pp.452-4, 481-3.

that Beddoes's choice of location was also influenced by the presence of Edgeworth who, with his third wife and large family, had been living in Clifton since the autumn of 1791. Beddoes had met Edgeworth when they were both staying with Reynolds in West Bromwich during September 1792.⁴⁹ Edgeworth, a republican,⁵⁰ was a major landowner in Edgeworthstown, County Longford, located in the middle of Ireland. He was in Clifton for the sake of the health of his son, from his second marriage to Honora Sneyd (1751–1780), Lovell Edgeworth (1775–1842). In his late teens, he was showing signs of consumption and this had killed his sister in 1790 at the age of fifteen.⁵¹ Beddoes regarded Edgeworth as being in 'the highest rank of the untitled Aristocracy'⁵² and furthermore he had fallen in love with his daughter, Anna Edgeworth (1773–1824).⁵³ Beddoes found that, though only twenty, her 'opinions on politics & religion coincided with my own'.⁵⁴ Shortly after his arrival in Hotwells Beddoes began attending Lovell and indeed one of the things that attracted Beddoes to Anna was the affectionate way that she nursed her 'sick brother'.⁵⁵ The Edgeworths had intended to return to Ireland in May 1793,⁵⁶ but in view of the romance between Anna and Beddoes postponed their departure until the autumn. Edgeworth approved of the match and explicitly in their age disparity of thirteen years,⁵⁷ describing his prospective son-in-law as 'a little fat Democrat of considerable abilities' and thought that if he concentrated on medicine he would make his fortune.⁵⁸

⁴⁹ Thomas Beddoes to Davies Giddy, 12 September 1792, CRO MS DG/41/19. See also James Keir to Erasmus Darwin, 23 March 1793, in Amelia Moillet, *Sketch of the Life of James Keir, Esq., F.R.S., with a selection from his Correspondence*, London, [1868], p.129.

⁵⁰ Richard Edgeworth to Margaret Ruxton, December 1792, NLI MS 10166/7/100.

⁵¹ Richard Lovell Edgeworth and Maria Edgeworth, *Memoirs of Richard Lovell Edgeworth, Esq. begun by himself and concluded by his daughter*, 2 volumes (London, 1820), 2: 128-9.

⁵² Thomas Beddoes to Davies Giddy, 25 or 26 May 1793, CRO MS DG/41/21. A misreading of this passage may be the source of the mistake in Jay, *Atmosphere*, pp.80, 289, in incorrectly awarding a knighthood to Edgeworth.

⁵³ Thomas Beddoes to Davies Giddy, 25 or 26 May 1793, CRO MS DG/41/27, referred to becoming intimately acquainted with her during the previous three months.

⁵⁴ *Ibid.*

⁵⁵ *Ibid.*

⁵⁶ Maria Edgeworth to Margaret Ruxton, 13 December 1792, NLI MS 10166/7/99.

⁵⁷ Thomas Beddoes to Davies Giddy, 25 or 26 May 1793, CRO MS DG/41/27. It should be noted that Edgeworth's third and fourth wives were respectively eleven and twenty-five years younger than him.

⁵⁸ Postscript by Edgeworth in Maria Edgeworth to Margaret Ruxton, 21 July 1793, NLI MS 10166/7/105. Jay, *Atmosphere*, p.91, suggested that Beddoes was not a gentleman being 'a tanner's son' and therefore there were class issues that required resolution before the marriage could take place. It is not clear on what basis Jay thought that Edgeworth would not have viewed an Oxford educated physician as anything other than a gentleman.

They became engaged in July⁵⁹ and the marriage appears to have been originally planned for the end of August.⁶⁰ It was postponed, possibly due to Beddoes needing cash to support his prospective bride whose fortune amounted to £2,000.⁶¹ At the start of June, his father, who had already given him £1,800, put a charge on one of his properties to create an annual allowance for Beddoes of £173 and additionally agreed to pay him a further £300 in both 1793 and 1794 whilst he established himself as a physician.⁶² Apparently, Beddoes did not consider this sufficient for his needs and in mid-June wrote to Giddy asking to borrow a further £200.⁶³ Giddy appears to have responded fairly positively, with Beddoes accepting that he could borrow smaller sums of money from him with a few months' notice.⁶⁴ Beddoes's problems were solved when, towards the end of August, Keir and Reynolds drew up a bond for the enormous sum of £10,000 for him in exchange for the performance of unspecified covenants. Like the marriage settlement this was not executed until 16 April 1794.⁶⁵ This personal support that Beddoes enjoyed amongst the Midlands industrialists permitted him and Anna Edgeworth to marry in Edgeworthstown the following day.⁶⁶

While Beddoes had been courting Anna and seeking financial support, he had pursued his research into the possible therapeutic properties of airs, particularly

⁵⁹ Maria Edgeworth to Margaret Ruxton, 21 July 1793, NLI MS 10166/7/105. Erasmus Darwin to Robert Darwin, July 1793, Desmond King-Hele, ed., *The Collected Letters of Erasmus Darwin* (Cambridge, 2007), pp.416-17.

⁶⁰ The marriage settlement (TNA C/104/41) was originally dated 26 August 1793.

⁶¹ Thomas Beddoes to Richard Beddoes, 24 July 1793, Bodleian, MS dep. c. 135/1, which discussed the marriage settlement.

⁶² 'Agreement Betⁿ Dr Beddoes and His father', 3 June 1793, TNA C/104/41. It would appear that this was not done without some family stress, see Thomas Beddoes to Richard Beddoes, 2 April 1794, Bodleian MS dep. c. 135/1.

⁶³ Thomas Beddoes to Davies Giddy, 15 June 1793, CRO MS DG/41/28.

⁶⁴ Thomas Beddoes to Davies Giddy, 31 July 1793, CRO MS DG/41/7.

⁶⁵ TNA C/104/41. David Philip Miller and Trevor H. Levere, "'Inhale it and See?'" The Collaboration between Thomas Beddoes and James Watt in Pneumatic Medicine', *Ambix*, 2008, **55**: 5-28, p.8, did not notice either the change of date, or the clear link with Beddoes's marriage; rather they linked the bond to the founding of the MPI. However, Trevor H. Levere, 'Dr Thomas Beddoes: chemistry, medicine, and the perils of democracy', *Notes and Records of the Royal Society of London*, 2009, **63**: 215-29, pp.223-4, gave a fuller account of the bond, but still implicitly linked it to the MPI. One does wonder, therefore, if there was a link why Beddoes would then go to the enormous effort of a public fundraising campaign in the ensuing years. On the other hand, Trevor H. Levere, 'Dr Thomas Beddoes (1760-1808) and the Lunar Society of Birmingham: Collaborations in Science and Medicine', *British Journal for Eighteenth-Century Studies*, 2007, **30**: 209-26, p.215, did note the link to the marriage.

⁶⁶ Edgeworth and Edgeworth, *Memoirs*, **2**: 153.

concentrating on consumption and experimenting on kittens.⁶⁷ By the middle of June, with three (unnamed) friends, he had set up an air apparatus with the intention of using it to treat ‘several incurable diseases beside consumption’⁶⁸ and was writing *A New Method of treating Pulmonary Consumption* which, dated 30 June 1793, was published in the autumn.⁶⁹ This took the form of a letter to a fellow political radical, the Derby-based physician Erasmus Darwin (1731–1802), who praised its content highly.⁷⁰ Suggesting confidence in Beddoes’s approach, Darwin sent him a patient.⁷¹ Using his air apparatus, Beddoes experimented on administering airs such as hydrogen and oxygen, with the primary aim of curing consumption, but also other diseases such as asthma. He retained every confidence in the permanency of the effects, especially by repeated applications.⁷²

Beddoes’s work and its possibilities engendered strong interest, and ultimately support, from both those who already knew him, but also from others who initially were aware of him only by reputation. The interest of James Watt, who from at least the middle of 1793 was aware of Beddoes’s work, became much more personal when his daughter from his second marriage, Jessy Watt (1779–1794), started suffering from consumption towards the end of that year, suffering which continued into 1794. Despite Darwin prescribing by letter from Derby,⁷³ she deteriorated, and Watt asked him if Beddoes had ‘made any new discoveries in similar cases & if he could come this way wish he would make Jessy a visit’.⁷⁴ Beddoes came to Birmingham for a week at the end of May 1794, but, after examination, he held out no hope of her surviving.⁷⁵ He and Watt constructed

⁶⁷ Thomas Beddoes to unidentified correspondents, late May 1793 and 20 August 1793, Stock, *Beddoes*, pp.93-4 and 96.

⁶⁸ Thomas Beddoes to Davies Giddy, 15 June 1793, CRO MS DG/41/28.

⁶⁹ Thomas Beddoes, *A Letter to Erasmus Darwin, M.D.*, p.60. It was advertised in *The Morning Chronicle*, 27 September 1793, 1c. See also Erasmus Darwin to Robert Darwin, 6 September 1793, *Darwin Collected Letters*, p.418.

⁷⁰ Erasmus Darwin to Thomas Beddoes, 17 January 1793, in Thomas Beddoes, *A Letter to Erasmus Darwin, M.D.*, pp.61-7. The date of this letter is almost certainly incorrect. *Ibid.*, p.60 noted that this letter was received after the sheets for the book had been printed, while p.72 noted the existence of typographical errors in the text. A more plausible date would be 17 June 1793. *Darwin Collected Letters*, pp.413-15 followed the date as given in the original printed text.

⁷¹ Erasmus Darwin to Robert Darwin, July 1793, *Darwin Collected Letters*, pp.416-17.

⁷² Thomas Beddoes to Davies Giddy, 29 October 1793, CRO MS DG/41/4.

⁷³ Erasmus Darwin to James Watt, 13 December 1793, 1 January 1794, Erasmus Darwin to Ann Watt, 12 March 1794 Erasmus Darwin to James Watt, 25 April 1794, 25 May 1794, 29 May 1794, 6 June 1794, *Darwin Collected Letters*, pp.424-5, 426-7, 431-2, 433-5, 436-7 and 439.

⁷⁴ James Watt sr to Erasmus Darwin, 23 May 1794, LoB MS 3219/4/124/316.

⁷⁵ James Watt jr to Matthew Boulton, 31 May 1794, LoB MS 3782/13/39/41.

some apparatus for her to inhale the gases, but to no avail and she died on 6 June 1794 aged fifteen.⁷⁶ Watt, who took the view in such circumstances that ‘the best consolation is to turn the mind to any other subject that can occupy it’,⁷⁷ began, at Beddoes’s suggestion,⁷⁸ further work on the apparatus, writing a short guide to its operation in the form of a letter to Beddoes dated 14 July 1794.⁷⁹ Thereafter Watt retained a strong interest in pneumatic medicine for the remainder of his life⁸⁰ including manufacturing and selling the apparatus.⁸¹ It has been suggested, though there is no supporting evidence, that Beddoes took advantage of Watt’s grief by getting this work done.⁸²

Of those who initially knew of Beddoes by repute, the most significant was no less a figure than the Whig grandee Georgiana Cavendish, Duchess of Devonshire (1757–1806), wife of William Cavendish, fifth Duke of Devonshire (1748–1811). Exiled to the Continent to give birth to a natural daughter following her affair with Charles Grey (1764–1845), she returned to England in 1793 staying in Bath from late November to mid-January 1794. There she renewed her acquaintance with the Bath physician John Ewart (d.1800) who introduced her to Beddoes.⁸³ She visited him twice in Hotwells, once just before Christmas and again in mid-January.⁸⁴ On both occasions she saw Beddoes who demonstrated to her that if animals such as dogs or rabbits breathed oxygen beforehand they could survive emersion in nitrogen or being frozen.⁸⁵

⁷⁶ James Watt sr to Joseph Black, 9 June 1794, *Black Correspondence*, 2: 731.

⁷⁷ James Watt sr to Erasmus Darwin, 30 June 1794, LoB MS 3219/4/124/325.

⁷⁸ James Watt sr to Joseph Black, 31 August 1794, *Black Correspondence*, 2: 735. See also Thomas Beddoes to Thomas Wedgwood, 12 August 1794, WM MS MC 35.

⁷⁹ James Watt, *Description of an Air Apparatus; with hints respecting the use and properties of different elastic fluids*, in Beddoes and Watt, *Considerations*, part 2. Whether the date that Watt, who abhorred both democracy and tyranny (see James Watt sr to Joseph Black, 17 July 1793, *Black Correspondence*, 2: 703), gave to this was deliberate remains an open question.

⁸⁰ David Philip Miller, *James Watt, Chemist: Understanding the Origins of the Steam Age* (London, 2009), p.114. Miller and Levere, “‘Inhale it and See?’”, p.8.

⁸¹ For instance, see James Watt to Joseph Black, 1 June 1796, *Black Correspondence*, 2: 762 and Thomas Beddoes to Davies Giddy, 29 June 1796, CRO MS DG/42/20.

⁸² Richard L. Hills, *James Watt. Volume 3: Triumph through Adversity, 1785-1819* (Ashbourne, 2005), p.153.

⁸³ Duchess of Devonshire to Joseph Banks, 1 December 1794, in Neil Chambers, ed., *The Scientific Correspondence of Joseph Banks*, 6 volumes (London, 2007), 4: 1290. Beddoes had known Ewart since shortly after his arrival in Hotwells. Thomas Beddoes to James Watt sr, 18 September 1794, LoB MS 3219/4/28/16.

⁸⁴ Duchess of Devonshire to Dowager Countess Spencer, 1 January 1794 and 16 January 1794, Chatsworth MS CS5/1201 and 1204 respectively.

⁸⁵ Duchess of Devonshire to Charles Blagden, 13 and 14 January 1794, Royal Society of London MS CB/1/3/278; Duchess of Devonshire to Joseph Banks, 1 December 1794, *Banks Scientific Correspondence*, 4: 1290.

It was in this context of increasing interest in Beddoes's activities, that he began to develop the idea for a pneumatic hospital. This idea appeared first in a letter to Black written on Christmas Eve 1793.⁸⁶ Composed before Devonshire's second visit to Beddoes, this account does not agree with that provided by Beddoes's first biographer who asserted that the idea occurred to him during that visit. In a letter written to an unidentified correspondent 'immediately' after her visit, Beddoes wrote: 'it would be more practical to determine the medical effects of elastic fluids in one year, if we had six to twelve patients in a house with apparatus, than in twelve years of private practice'. He thought this could be achieved with six or seven hundred pounds.⁸⁷ However, a couple of months later in a letter, written from Shifnal, to Tom Wedgwood (1771–1805), one of the three sons (the others being John Wedgwood (1766–1844) and Josiah Wedgwood jr (1769–1843)) of the enormously wealthy Staffordshire potter, Josiah Wedgwood (1730–1795) of Etruria, Beddoes put the cost of the same proposal at 'not less than £3000 & not more than £5000', believing that the Duchess of Devonshire would persuade her husband to contribute two hundred guineas.⁸⁸

However, during the first half of the year, Beddoes did not pursue this idea, possibly because of preparations for his marriage, visiting Jessy Watt in Birmingham and so on.⁸⁹ At the end of July 1794, however, he had printed a four page folded broadsheet, dated the 29th, entitled *A proposal towards the improvement of Medicine*.⁹⁰ In this Beddoes argued that on the evidence provided in his medical *Observations* and in his *Letter to Erasmus Darwin*, he had 'abundantly proved, that the application of elastic fluids to the cure of diseases, is both practical and promising'. He continued that a funded 'Medical Pneumatic Institution' would much more effectively establish the benefits or otherwise of pneumatic medicine than 'twenty years of private practice'. A successful MPI, Beddoes believed, 'ought to render itself useless, by so far simplifying methods and ascertaining facts, that every practitioner of medicine, at least, may both know how to procure and how to apply the different elastic fluids'. If unsuccessful, then at least it had been tried. He thought such an institution should be able to settle the matter in two or three years of operation.

⁸⁶ Thomas Beddoes to Joseph Black, 24 December 1793, *Black Correspondence*, 2: 724.

⁸⁷ Thomas Beddoes to unidentified correspondent, mid-January 1794, in Stock, *Beddoes*, pp.100-1.

⁸⁸ Thomas Beddoes to Thomas Wedgwood, mid-March 1794, WM MS MC 35. This letter is dated on the basis that Beddoes mentioned that he was about to go to Ireland.

⁸⁹ Thomas Beddoes to James Watt sr, 1 July 1794, LoB MS 3219/4/28/7 noted that he was 'straighened for time'.

⁹⁰ Thomas Beddoes, *A proposal towards the improvement of Medicine* (Bristol, 1794).

Beddoes's choice of the word "institution", rather than "infirmary" or "hospital" or other possibilities suggests that, as someone who closely followed events in France, he was aware of the discussions then going on in Paris to found an Institut de France to replace the suppressed Académie Royale des Sciences.⁹¹ By using the term institution in this sense for the first time in English, Beddoes signalled the radical nature of his project.⁹² Beddoes was ambivalent about the term hospital, especially since in 1791 he had criticised the proposal to establish an infirmary or hospital in Truro due to the difficulty of sustaining funding, arguing instead that because of the travelling distances involved, dispensaries in individual Cornish towns would be preferable.⁹³ Hence his emphasis that he expected the duration of the MPI's existence to be limited.

Use of the term was quickly taken up by other organisations, such as the Andersonian Institution founded under the terms of the will of John Anderson (1726–1796), a strong supporter of the French Revolution. Originally to be named the Andersonian University, its trustees changed it to Institution, since Anderson's legacy was insufficient to establish a new university in Glasgow.⁹⁴ In London the Royal Institution, founded in 1799, also used the term. The Whig, Elizabeth, Lady Holland (1771–1845), thought the Royal Institution 'a very bad imitation of the *Institut* at Paris'.⁹⁵ She thus recognised some sort of link via the word "institution" between the organisations, despite the Royal Institution, possibly in an attempt to deflect attention from the word's radical connotations, asserting that after 'mature deliberation' it was so named in direct imitation of the Istituto delle Scienze e delle Arti, a Papal organisation established in Bologna in the early eighteenth century.⁹⁶

Whatever the motivations behind choosing its name, the MPI would require money to rent a building that could accommodate a dozen patients as well as

⁹¹ Maurice Crosland, *Science Under Control: The French Academy of Sciences 1795-1914* (Cambridge, 1992), pp.50-3.

⁹² The use of the word institution in a generic sense dated back in English to the start of the eighteenth century. *OED*.

⁹³ Thomas Beddoes, *Considerations on Infirmaries, And on the Advantages of such an Establishment for the County of Cornwall* (Tredea, 1791). No original has been located, but the text is given in Stock, *Beddoes*, appendix, pp.xxv-xxviii.

⁹⁴ Muir, *Anderson*, p.23.

⁹⁵ The Earl of Ilchester, ed., *The Journal of Elizabeth Lady Holland (1791-1811)*, 2 volumes (London, 1908), 2: 52, an entry made in March 1800.

⁹⁶ *Prospectus, Charter, Ordinances and Bye-Laws, of the Royal Institution of Great Britain*, London, [1800] p. 1. For the Istituto see Giorgio Dragoni, 'Marsigli, Benedict XIV and the Bolognese Institute of Sciences' in J.V. Field and Frank A.J.L. James, eds., *Renaissance and Revolution: Humanists, Scholars, Craftsmen and Natural Philosophers in Early Modern Europe* (Cambridge, 1993), pp.229-237. The *OED* incorrectly cites the Royal Institution as the first body to use the term in this sense.

purchasing apparatus, furniture and paying for a medical superintendent, three servants, contingent expenses and medicines. Beddoes now calculated that ‘three or four thousand pounds would probably suffice’. Since very few of Beddoes’s own papers or those of the MPI have survived it is not known how Beddoes arrived at this figure. The *Proposal* closed by announcing that a further account of Beddoes’s work would shortly be published together with Watt’s description of his apparatus.

Beddoes described this *Proposal* of July as a proof when he left a copy with Watt. He added that he would have published it, but that he sought to secure four or five ‘monied men of known responsibility’ as trustees for the subscriptions and one, whom he especially wanted, was keeping him waiting.⁹⁷ Towards the end, the *Proposal* listed the London banks who would receive the money and named three bankers who would act as trustees for the subscriptions collected, though there is no record of any of them donating. They were the Pittite MP for Taunton, Benjamin Hammet (c.1736–1800), John Grant (c.1720–1804), briefly MP for Fowey, also a supporter of Pitt, and Alexander Anderson (d.1796); no further names were ever added to these.

This July text seems not to have been circulated widely (only three copies have been located, and in one of those the month has been altered in manuscript to September⁹⁸). Its purpose was to attract the interest of those whom Beddoes believed would already be well disposed towards supporting the project. This was successful since Keir, Darwin, Watt, and his business partner Matthew Boulton (1728–1809), all thought well of the project as did Tom Wedgwood. Indeed Wedgwood sent Beddoes ‘a very friendly & encouraging letter relative to the project’.⁹⁹ Furthermore, despite her later view that in politics, Beddoes had ‘neither judgement taste or temper’,¹⁰⁰ ‘The Dss of Devonshire has taken it up with much ardour’.¹⁰¹ Both her views and the backing of some government supporters, at least to the extent of acting as trustees, suggests that they took the view that Beddoes’s political opinions should be placed to one side when helping implement what they evidently regarded as a valuable medical experiment. However, some supporters were not entirely uncritical of the proposal. Boulton, for instance, objected to the idea of the project involving a hospital. Beddoes

⁹⁷ Thomas Beddoes to James Watt sr, 14 August 1794, LoB MS 3219/4/28/9.

⁹⁸ The three copies are in Bristol Central Library, the Osler Library at McGill University and WM MS MC 35, which has the altered date.

⁹⁹ Thomas Beddoes to James Watt sr, 14 August 1794, LoB MS 3219/4/28/9.

¹⁰⁰ Duchess of Devonshire to Earl Spencer, 30 May 1796, BL MS add 75923 (no foliation). Amanda Foreman, *Georgiana Duchess of Devonshire* (London, 1998), pp.293 and 429 misdated this letter and so did not appreciate its significance.

¹⁰¹ Thomas Beddoes to Thomas Wedgwood, 12 August 1794, WM MS MC 35. Wedgwood forwarded this to his brother Josiah with the annotation expressing his support.

responded by sending a copy of his printed criticism of the proposed Truro hospital, to James Watt jr (1769–1848), Watt’s son from his first marriage, making it clear that his would not be like ‘these supposed charitable institutions’.¹⁰²

During the late summer and into the early autumn of 1794, Beddoes concerned himself to a great extent with patients. Throughout the nearly four following years that he sought support for the MPI, clinical practice was an important strand in his activities since the results provided continuing evidence for the efficacy of pneumatic medicine. For instance, in his very early thirties the Whig MP for the City of Durham and coal mine owner William Lambton (1764–1797), who, according to later rumour, possessed an annual income of £35,000,¹⁰³ began suffering from consumption. On the recommendation of a couple of friends he visited Beddoes in Bristol in May 1796 for treatment. He seems to have made some improvement, but nevertheless Beddoes was unhappy with his progress and accompanied him to Birmingham for consultations with both Erasmus Darwin and his son Robert Darwin (1766–1848). Lambton seemed to recover, but during the summer relapsed and went to Italy.¹⁰⁴ More successful was the Whig MP for Knarborough (a seat in the gift of the Duke of Devonshire), James Hare (1747–1804). Forty-eight in 1795, Hare, in fairly poor health, had suffered from asthma for many years. From the middle of September 1795 he followed Beddoes’s regime of oxygenated air with remarkable results, according to Beddoes: ‘Here is a constitution almost renovated & an asthma of 16 years almost extirpated by oxygene, as far as we can judge from 8 months experience’.¹⁰⁵ What these and many other patients, for example Lady John Russell (c.1768-1801),¹⁰⁶ had in common was wealth and good social connections that would be of use as the campaign to establish the MPI developed.

¹⁰² Thomas Beddoes to James Watt jr, 17 August 1794, LoB MS 3219/6/2/B/54. Thomas Beddoes, *Considerations on Infirmaries*. See also Thomas Beddoes to James Watt sr, 17 August 1794, LoB MS 3219/4/28/10. Nevertheless, the term was used in Joseph Black to James Watt sr, 28 October 1794, *Black Correspondence*, 2: 737.

¹⁰³ Kenneth Garlick *et al.*, eds., *The Diary of Joseph Farington*, 16 volumes (New Haven, 1978-84), 5: 1619 (entry for 14 September 1801).

¹⁰⁴ Stuart Reid, *Life and Letters of the First Earl of Durham 1792-1840*, 2 volumes (London, 1906), 1: 26-8.

¹⁰⁵ Thomas Beddoes to James Watt sr, 28 March 1796, LoB MS 3219/4/29/2. See also James Hare to James Watt sr, 16 October 1795, LoB MS 3219/4/28/43; Thomas Beddoes to James Watt sr, 17 January 1796, LoB MS 3219/4/29/1; 24 February 1796, LoB MS 3219/4/27/19; September 1796, LoB MS 3219/4/29/9; and the laudatory note by James Hare of 29 July 1796 in Thomas Beddoes and James Watt, *Considerations on ... Factitious Airs*, part 4 (London, 1796), pp.49-50.

¹⁰⁶ Thomas Beddoes to James Watt sr, 4 July 1796, LoB MS 3219/4/29/5.

Also occupying Beddoes's interest in the latter part of 1794 was seeing through the press his account of pneumatic medicine and the description of Watt's apparatus.¹⁰⁷ This was published as *Considerations on the Medicinal Use of Factitious Airs*, printed in Bristol, though published in London by Murray and by Johnson, and advertised on 14 October 1794, for publication the following day.¹⁰⁸ The bulk of this work comprised separately paginated texts by Beddoes and by Watt. But it commenced by printing the text of Beddoes's *Proposal*, now dated 30 September 1794, with only the most minor alterations from the original text relating to the arrangements for subscriptions.

The imminent publication of Beddoes's *Considerations* initiated a major drive by him for financial support for the MPI which Tom Wedgwood thought 'deserving the most liberal support'.¹⁰⁹ Beddoes told Watt jr on 10 October that 'the scheme for a pneumatic Institution is going on with great vigour in some districts & now or never seems to be the motto'.¹¹⁰ This significantly understated what was a large scale national effort to secure the three to four thousand pounds that Beddoes needed. In these efforts he worked largely through his network of existing contacts. For example, Robert White (1738–1814) a physician of Bury St Edmunds, who in a pamphlet outlining Lavoisierian chemistry would later praise Beddoes's initiative,¹¹¹ circulated details in Suffolk.¹¹² In the Midlands, Beddoes organised the subscription campaign through Darwin, Tom Wedgwood and James Watt jr. The involvement of Watt jr rather than his father was possibly due to the son's Jacobin past, which had dismayed his father,¹¹³ but it did render him sympathetic to Beddoes's politics. Letters to him from Beddoes discussed political developments in France and the treason trials held in London during the autumn of 1794,¹¹⁴ topics noticeably absent in his letters to Watt sr and, more

¹⁰⁷ Beddoes and Watt, *Considerations*, parts 1 and 2. The best account of the collaboration between Watt and Beddoes and how it has been treated historically is and Levere, "Inhale it and See?"

¹⁰⁸ *The Morning Chronicle*, 14 October 1794, 1b. See also Thomas Beddoes to James Watt sr, 11 October 1794, LoB MS 3219/4/27/4.

¹⁰⁹ Thomas Beddoes to James Watt jr, 16 October 1794, LoB MS 3219/6/2/B/56, in which he quoted a letter from Wedgwood.

¹¹⁰ Thomas Beddoes to James Watt jr, 10 October 1794, LoB MS 3219/6/2/B/55.

¹¹¹ Robert White, *A summary of the pneumato-chemical theory, with a table of its nomenclature, intended as supplement to the analysis of the New London Pharmacopœia* (London, 1796), p.15.

¹¹² Thomas Beddoes to James Watt jr, 16 October 1794, LoB MS 3219/6/2/B/56.

¹¹³ James Watt to Joseph Black, 17 July 1793, *Black Correspondence*, 2: 703.

¹¹⁴ For example, Thomas Beddoes to James Watt jr, 17 August 1794, LoB MS 3219/6/2/B/54 and 16 October 1794, LoB MS 3219/6/2/B/56. On the trials see Johnston, *Unusual Suspects*.

surprisingly, to Tom Wedgwood.¹¹⁵ Beddoes sent both Watt jr and Tom Wedgwood the draft text for an abstract (mentioning no diseases) of the *Proposal* to establish the MPI, asking the former to have it printed in the Birmingham newspaper.¹¹⁶ Watt jr redrafted it to include references to a hospital (suggesting that he at least ignored Boulton's view) and to specific conditions such as consumption and cancer; the omission of the former disease was also a concern to Tom Wedgwood.¹¹⁷ Beddoes approved Watt jr's changes, commenting that 'in some respects [it was] better than my own & Mrs. Beddoes says it is much improved'.¹¹⁸ But this modified text did not appear in *Aris's Birmingham Gazette*, possibly because Watt jr may well have come to the same conclusion that Darwin did in Derby that 'no subscriptions can be got but by personal application'.¹¹⁹ Indeed Watt jr was instrumental in securing money from Boulton, the physician William Withering (1741–1799) and the Midlands gun-maker Samuel Galton (1753–1832).¹²⁰ Similarly in the Potteries, Beddoes noted that 'The Wedgwoods are pushing subscriptions with great alacrity'.¹²¹

Despite the reservations, amongst some of his key supporters, about the effectiveness of a newspaper campaign, Beddoes persevered with it. At the end of October he suggested to Giddy that 'If you had any newspaper near you, perhaps it w^d be worth while to insert such an abstract as on the other leaf'.¹²² As a result of Beddoes's efforts, in late October the Whig London evening daily paper, *The Star*, republished Beddoes's *Proposal* in its entirety,¹²³ whilst in early November the abstract announcing the project began to appear in local newspapers throughout England.¹²⁴ The final text of these insertions emphasised the general therapeutic power of the elastic fluids, but mentioned only one disease

¹¹⁵ The only surviving letter which discussed politics is Thomas Beddoes to Thomas Wedgwood, 6 March 1795, WM MS MC 35.

¹¹⁶ Thomas Beddoes to James Watt jr, 10 October 1794, LoB MS 3219/6/2/B/55; Thomas Beddoes to Thomas Wedgwood, 31 October 1794, WM MS MC 35.

¹¹⁷ See his annotation on Thomas Beddoes to Thomas Wedgwood, 31 October 1794, WM MS MC 35.

¹¹⁸ Thomas Beddoes to James Watt jr, 16 October 1794, LoB MS 3219/6/2/B/56.

¹¹⁹ Erasmus Darwin to James Watt sr, 17 November 1794, *Darwin Collected Letters*, pp.458-60.

¹²⁰ James Watt jr to Thomas Beddoes, 8 November 1794, LoB MS 3219/6/7, p.11.

¹²¹ Thomas Beddoes to James Watt jr, 16 October 1794, LoB MS 3219/6/2/B/56.

¹²² Thomas Beddoes to Davies Giddy, 31 October 1794, CRO MS DG/41/1.

¹²³ 'A Proposal Towards the Improvement of Medicine', *The Star*, 25 October 1794 and 29 October 1794, both 1c-d.

¹²⁴ Newspapers that carried these notices included: *Jackson's Oxford Journal*, 8 November 1794, 3b, *The Gloucester Journal*, 10 November 1794, 3d, *The Reading Mercury*, 10 November 1794, 3c-d (the only one which referred to *The Star*), *The Norfolk Chronicle*, 15 November 1794, 2d, *The Ipswich Journal*, 15 November 1794, 3e and *Hereford Journal*, 19 November 1794, 3e.

specifically: there was ‘good Reason to hope that Cancer, the most dreadful of human Maladies, and all other malignant Sores, may, by this Method, be disarmed of their Terror and Danger’. Furthermore, each notice directed readers to a local bank where Beddoes’s *Proposal* could be read and where subscriptions would be received.

In the meantime, Beddoes had been securing subscriptions from and the patronage of a few ‘persons of the first Rank and Science’.¹²⁵ For instance, he asked Black, his former teacher at Edinburgh University, for support. Black told Watt sr (because he did not have Beddoes’s address) that he would subscribe four or five guineas, adding that he thought Beddoes should have little trouble raising the money quickly, provided he stayed out of political trouble;¹²⁶ Watt thoughtfully copied the entire passage to Beddoes.¹²⁷ On the other hand James Gregory (1753–1821), the Professor of the Practice of Physic at Edinburgh University, wrote Beddoes a long letter explaining that he did not see why ‘elastic fluids shd. have more medicinal virtues than substances in a solid or aqueous form’.¹²⁸ This argument did not commend itself to Beddoes, partly because he realised that if he did not have the backing of other physicians, it would be harder to obtain support elsewhere. However, Beddoes took comfort in the London booksellers (that is, Murray and Johnson) telling him that *Considerations* was selling well and that he might have to issue a reprint.¹²⁹

Black’s name, along with those others who by 9 November¹³⁰ had agreed to support the MPI, was included in a further wave of newspaper notices published during the second half of November.¹³¹ The names were printed in the following order: the Duke and Duchess of Devonshire, Joseph Black, Erasmus Darwin, John Ewart, Jan Ingen-Housz, the Wedgwood father and sons, Richard Kirwan (1733–1812) and Samuel More (1726–1799). With the exception of More (Secretary of the Society of Arts) for whom no link has been found, Beddoes had previous strong connections to all those who agreed to support him publicly at

¹²⁵ *The Norfolk Chronicle*, 22 November 1794, 2d.

¹²⁶ Joseph Black to James Watt sr, 28 October 1794, *Black Correspondence*, 2: 737. He contributed five guineas according to Thomas Beddoes to James Watt jr, 9 November 1794, LoB MS 3219/6/2/B/57 and ‘Medical Pneumatic Institution’, *Morning Chronicle*, 19 June 1795, 1c.

¹²⁷ James Watt sr to Thomas Beddoes, 31 October 1794, LoB MS 3219/4/124/366.

¹²⁸ Quoted in Thomas Beddoes to James Watt jr, 20 November 1794, LoB MS 3219/6/2/B/58. A Manchester physician, John Ferriar (1761–1815) thought the proposed MPI ‘useless’, James Watt jr to John Ferriar, 19 December 1794, LoB MS 3219/6/7, pp.20–21.

¹²⁹ Thomas Beddoes to James Watt jr, 20 November 1794, LoB MS 3219/6/2/B/58.

¹³⁰ Thomas Beddoes to James Watt jr, 9 November 1794, LoB MS 3219/6/2/B/57.

¹³¹ *Aris’s Birmingham Gazette*, 17 November 1794, 3e; *The Norfolk Chronicle*, 22 November 1794, 2d; *The Derby Mercury*, 27 November 1794, 4b.

this period (he had stayed with the chemist Kirwan in Dublin during April 1794¹³²). No sums for individual contributions were noted, presumably because some had not yet donated and indeed Ingen-Housz, Kirwan and More appear never to have done so.

By the end of November some funds had been raised and these successes were advertised in provincial papers with names and, for the first time, sums donated. The publication, in mid-November, of the Birmingham supporters named seventeen subscribers who had contributed a total 77 guineas including ten guineas each from Watt sr, Boulton, Galton and the physician Edward Johnstone (1757–1851). Of the rest, more than half were medical doctors, gratifying Beddoes.¹³³ Indeed on this basis he began, optimistically and referencing the song of the French Revolution, ‘to think of y^e pneumatic Instⁿ scheme ça ira’.¹³⁴ By the start of December a further ten guineas had been raised from four more Birmingham subscribers, two of which (of three guineas each) were from Watt sr’s wife, Anne Watt (c.1744–1832) and Boulton’s daughter, Anne Boulton (1768–1829).¹³⁵ A week later Watt told Black that over £100 had been raised in Birmingham.¹³⁶ In Derby by the end of November Darwin had raised 33 guineas, including five of his own, ten from the Strutt family and ten from James Milnes (c.1733–1814) of Newark.¹³⁷ Taken together these two Midland subscriptions, even allowing for us not knowing how much had been collected in the Potteries, meant that by the end of 1794 not even 5% of what Beddoes needed had been collected, as illustrated in appendix 1.

From Beddoes’s point of view the great problem was London. As he told Watt jr in mid-October, he was ‘most deficient in London correspondents & wish you w^d address 2 or 3 *proposals* to some people there’; he made a similar request to Tom Wedgwood.¹³⁸ It was decided not to begin a campaign there until after Parliament re-assembled (30 December 1794)¹³⁹ since ‘public affairs will engage the whole

¹³² Thomas Beddoes to Richard Beddoes, 2 April 1794, Bodleian MS dep. c. 135/1.

¹³³ *Aris’s Birmingham Gazette*, 17 November 1794, 3e. Thomas Beddoes to James Watt jr, 20 November 1794, LoB MS 3219/6/2/B/58.

¹³⁴ Thomas Beddoes to Davies Giddy, late November 1794, CRO MS DG/42/4.

¹³⁵ *Aris’s Birmingham Gazette*, 1 December 1794, 3e.

¹³⁶ James Watt sr to Joseph Black, 8 December 1794, *Black Correspondence*, 2: 738.

¹³⁷ *The Derby Mercury*, 27 November 1794, 4b. See also Erasmus Darwin to James Watt sr, 17 November 1794 and 30 November 1794, *Darwin Collected Letters*, pp.458-60 and 460-1. The identification of Milnes given there is incorrect.

¹³⁸ Thomas Beddoes to James Watt jr, 16 October 1794, LoB MS 3219/6/2/B/56; Thomas Beddoes to Thomas Wedgwood, 7 November 1794, WM MS MC 35.

¹³⁹ Thomas Beddoes to James Watt jr, 20 November 1794, LoB MS 3219/6/2/B/58. See also James Watt sr to Joseph Black, 8 December 1794, *Black Correspondence*, 2: 738 and Thomas Beddoes to Thomas Wedgwood, 6 December 1794, WM MS MC 35.

attention of the nation'.¹⁴⁰ But the issues with London went deeper than merely timing or Beddoes's lack of contacts. Watt sr spelt out the problems bluntly to Beddoes:

Doctors in London in general condemn the practice [of pneumatic medicine] in toto & some other people are sure it must be bad 1st because you believe in Lavoisiers theory, 2^d because you have the character of a *Jacobin* 3^{dly} because they have found out from some expressions in your tracts on air that you are a *Materialist*¹⁴¹

The obvious strategy to overcome the opposition implied by these problems was to secure the support of some prominent individuals. Key to this was the Duchess of Devonshire. Although her correspondence with Beddoes has not survived, it is apparent that they were in contact both about specifics and the general strategy of the campaign. For example, Tom Wedgwood thought that it would be undesirable to have individuals make large subscriptions, presumably because that might discourage other contributors. Beddoes told him that Devonshire concurred and that she and her husband 'will pursue the same idea', though Wedgwood wanted it confirmed whether the Duke would contribute the £100 he had intended.¹⁴² Beddoes replied that the Duchess would follow Wedgwood's example and contribute an (unspecified) 'sum immediately & a sum annually for 3 years'.¹⁴³ What Devonshire did not know, nor indeed did hardly anyone else, was that the Wedgwood family was willing to subscribe far more in private than they publicly announced. Through his business partner Thomas Byerley (c.1747–1810), Josiah Wedgwood sr, in what must have been one of the last acts of his life, told Beddoes that the bankers were unhappy about entering into the accounts 'two sets of sums – one for advertisement – the other not to be publicly mentioned'. Beddoes neatly sidestepped the issue by telling Tom Wedgwood that he thought the public subscription would be sufficient so that 'your generosity may well be transferred to some other object'¹⁴⁴ – the 'may' keeping open the option of a large Wedgwood donation at some point in the future.

The first specific London target was Cavendish, who, with Priestley, had done so much to promote pneumatic science. Beddoes was hopeful that Cavendish would support the project,¹⁴⁵ but not being personally acquainted with him, Devonshire

¹⁴⁰ Thomas Beddoes to Thomas Wedgwood, late 1794, WM MS MC 35.

¹⁴¹ James Watt sr to Thomas Beddoes, 2 March 1795, LoB MS 3219/4/124/377.

¹⁴² Thomas Beddoes to Thomas Wedgwood, 7 November 1794, WM MS MC 35, annotated by Wedgwood.

¹⁴³ Thomas Beddoes to Thomas Wedgwood, 16 November 1794, WM MS MC 35.

¹⁴⁴ Thomas Beddoes to Thomas Wedgwood, late 1794, WM MS MC 35.

¹⁴⁵ Thomas Beddoes to Thomas Wedgwood, 7 November 1794, WM MS MC 35.

was deployed to gain the support of her distant cousin-in-law.¹⁴⁶ No evidence relating to Cavendish's reaction has been found; he did not subscribe and Watt jr thought that he was the only man 'of real Chemical knowledge' who did not support the MPI.¹⁴⁷ Next Devonshire used her considerable political influence in attempting to persuade the President of the Royal Society of London, Joseph Banks (1743–1820), to help Beddoes's project.¹⁴⁸ Banks told her that he regarded Beddoes's opposition 'to the present arrangement of the order of Society in this Country' as disqualifying him from support. However, he continued that her intervention had made him withdraw this view. Her lobbying had put Banks in a difficult position, since, as a gentleman, he clearly could not contradict her support for Beddoes on political grounds. Instead he concluded that he could not endorse the project because he believed that such medical experiments would do more harm than any conceivable good.¹⁴⁹ Devonshire challenged this response but Banks remained unmoved.¹⁵⁰ Watt sr then immediately threw his weight behind obtaining Banks's support drawing from him the request not to be lobbied any further having 'formally declined' to support Beddoes.¹⁵¹ This refusal angered Watt jr:

The fact is I suppose he [Banks] has seen Beddoes's cloven *Jacobin* foot and it is the order of the day to suppress all *Jacobin* innovations such as this is called. It is said to be the same spirit operating in a different way. Even the purity of my father's principles cannot absolve him from the contagion of the connection. I apprehend the secret committee of the Royal Society regard him [Watt sr] too as a lost sheep.¹⁵²

¹⁴⁶ Thomas Beddoes to James Watt jr, 9 November 1794, LoB MS 3219/6/2/B/57 noted Beddoes had requested her to contact Cavendish.

¹⁴⁷ James Watt jr to John Ferriar, 19 December 1794, LoB MS 3219/6/7, pp.20-1.

¹⁴⁸ Duchess of Devonshire to Joseph Banks, 26 November 1794, NHM Dawson Turner Collection, 9, f.124. This is quite a well-known story; see, for example, Trevor H. Levere, 'Dr Thomas Beddoes and the Establishment of his Pneumatic Institution: A Tale of Three Presidents', *Notes and Records of the Royal Society of London*, 1977, **32**: 41-9.

¹⁴⁹ Joseph Banks to Duchess of Devonshire, 30 November 1794, NHM Dawson Turner Collection, 9, f.125.

¹⁵⁰ Duchess of Devonshire to Joseph Banks, 1 December 1794 and Joseph Banks to Duchess of Devonshire, 2 December 1794, *Banks Scientific Correspondence*, **4**: 1290 and 1292.

¹⁵¹ James Watt sr to Joseph Banks, 7 December 1794 and Joseph Banks to James Watt sr, 10 December 1794, *Banks Scientific Correspondence*, **4**: 1295 and 1296. See also Hills, *James Watt*, p.158.

¹⁵² James Watt jr to John Ferriar, 19 December 1794, LoB MS 3219/6/7, pp.20-21. See also James Watt jr to Thomas Beddoes, 20 December 1794, LoB MS 3219/6/7, pp.21-2.

On the positive side, the venture into London brought Beddoes the support of the physician Robert Thornton (1768-1837). Throughout 1795 and 1796 he provided numerous case histories of patients benefiting from pneumatic medicine which Beddoes published in later parts of his and Watt's *Considerations*. Thornton may have paid a price for supporting Beddoes so publicly when he was black-balled for membership of the Linnean Society in 1797.¹⁵³ The opposition in London had its effect and the campaign seems to have lost some momentum. Indeed, in the New Year, Anne Watt, wrote to her son Gregory Watt (1777–1804), studying at Glasgow University, that she did not know how the subscription was going.¹⁵⁴ Watt jr urged Beddoes that ‘applications must be made to sundry great Aristocrats’ mentioning specifically the fifth Duke of Bedford (1765–1802) – a Whig.¹⁵⁵ Beddoes had already started doing this the previous month, suggesting some communication problems between the interested parties. He had written to Priestley's and Ingen-Housz's old patron at Bowood, now the Marquis of Lansdowne, who, after strong input from Boulton, agreed to subscribe thirty guineas to the MPI.¹⁵⁶ Around the same time Beddoes also gained the support of the second Earl of Dartmouth (1731–1801) who contributed ten guineas¹⁵⁷ and whose name appeared on a list of subscribers that he sent Tom Wedgwood in early December.¹⁵⁸

By mid-February, according to Beddoes, between five and six hundred pounds had been subscribed,¹⁵⁹ though nothing, apart from the publication of the *Proposals* in *The Star*, had so far appeared in the London papers. Beddoes, still confident however, told the Birmingham printer, Thomas Pearson (c.1761-1801), that ‘the business of the Pneumatic Institution ... will succeed’ but added a caveat ‘unless public disasters shall jumble & confound all things’.¹⁶⁰ The political situation made him ‘apprehensive that the Pn^c Instⁿ will be defeated by public disasters’.¹⁶¹ By the end of March Anne Watt had come to the view ‘that the scheme of a pneumatic Hospital must be given up as a subscri[ption] cannot be

¹⁵³ Thomas Marsham to James Smith, 20 July 1797, Linnean Society MS JES/ADD/63.

¹⁵⁴ Anne Watt to Gregory Watt, January 1795, LoB MS 3219/7/1/20.

¹⁵⁵ James Watt jr to Thomas Beddoes, 2 January 1795, LoB MS 3219/6/7, p.23.

¹⁵⁶ Marquis of Lansdowne to Matthew Boulton, 6 December 1795, LoB MS 3782/12/39/332. ‘Medical Pneumatic Institution’, *Morning Chronicle*, 19 June 1795, 1c.

¹⁵⁷ ‘Medical Pneumatic Institution’, *Morning Chronicle*, 19 June 1795, 1c.

¹⁵⁸ Thomas Beddoes to Thomas Wedgwood, 6 December 1794, WM MS MC 35.

¹⁵⁹ Thomas Beddoes to Davies Giddy, 12 February 1795, CRO MS DG/42/36. He provided the same figure three weeks later in Thomas Beddoes to Thomas Wedgwood, 6 March 1795, WM MS MC 35.

¹⁶⁰ Thomas Beddoes to Thomas Pearson, 18 February 1795, LoB MS 3219/4/27/12.

¹⁶¹ Thomas Beddoes to Thomas Wedgwood, 6 March 1795, WM MS MC 35.

got sufficient for the Establishment of such a thing’, attributing, in part, the problem to ‘Dr Bed[d]oes Democratic principals [sic]’.¹⁶²

One way of tackling this problem is illustrated by an article on the MPI in *The Newcastle Courant* published in April 1795. Here Beddoes’s name was slipped in among a number of other physicians working on pneumatic medicine. When the subscription for the MPI was discussed, reference was made only to its trustees. Lansdowne and Dartmouth were listed as having donated along with others such as White, James Currie (1756–1805), Alexander Monro (1733–1813), Thomas Percival (1740–1804), David Dundas (1749–1826), and Walter Farquhar (1738–1819). Furthermore, the article detailed the names and amounts of the nineteen men in the Berwick area who in total contributed twenty one and a half guineas.¹⁶³ On the other hand *The Staffordshire Advertiser* had no problem reporting at the end of May that the MPI was ‘proposed by Dr. Beddoes’ making no reference to anyone else other than the generous donations of twenty-five guineas each made by the late Josiah Wedgwood (he died on 3 January 1795) and his three sons, while his widow Sarah Wedgwood (1734–1815) and one of his daughters provided five guineas apiece.¹⁶⁴

During March and April even Beddoes recognised the slowness of the subscriptions, although he supposed that 700 guineas had been raised thus far.¹⁶⁵ He attributed his tardiness to the prevalence of ‘Typhus [in Bristol which] increased the sufferings of the poor to such a degree, as to make every exertion necessary for their relief’.¹⁶⁶ Another possible reason for Beddoes’s loss of focus on the campaign during the early part of the year might be attributed to preparing a second edition of his and Watt’s *Considerations*. Published towards the end of April,¹⁶⁷ it took up some time due to including a number of case histories. In an attempt to revitalise the campaign, in his letters to Tom Wedgwood during the second half of March and early April, Beddoes proposed the idea of publishing, at their joint risk, a pamphlet to render pneumatic medicine popular. This would have illustrations provided by artists at the Wedgwood pottery in Etruria and be

¹⁶² Anne Watt to Gregory Watt, 30 March 1795, LoB MS 3219/7/1/22.

¹⁶³ ‘Medical Pneumatic Institution’, *The Newcastle Courant*, 4 April 1795, 1c.

¹⁶⁴ *The Staffordshire Advertiser*, 30 May 1795, 3c. This report is a bit misleading in that the Wedgwoods, father and sons, each subscribed ten guineas immediately to be followed by three annual instalments of five guineas. Thomas Beddoes to James Watt jr, 9 November 1794, LoB MS 3219/6/2/B/57. It was reported correctly in ‘Medical Pneumatic Institution’, *Morning Chronicle*, 19 June 1795, 1c.

¹⁶⁵ Thomas Beddoes to James Watt jr, 23 April 1795, LoB MS 3219/6/2/B/59.

¹⁶⁶ Reported in Thomas Henry to James Watt sr, 16 April 1795, LoB MS 3219/4/27/27.

¹⁶⁷ Thomas Beddoes to James Watt jr, 23 April 1795, LoB MS 3219/6/2/B/59.

intended ‘for readers of fashion ... print[ed]... on elegant paper’; nothing came of this scheme.¹⁶⁸

Towards the end of the following month, Beddoes returned to the campaign telling Watt jr that he would be sending the list of subscribers to the newspapers.¹⁶⁹ This he did at the start of June and it was published a fortnight later in a couple of London papers. This listed the value of 146 individual subscriptions (though neither Galton nor Withering were included, nor, with one exception, were any of the Berwick subscriptions) totalling £689 17s, not far short of Beddoes’s April estimate.¹⁷⁰ That Beddoes waited until nearly the end of parliamentary session (27 June) before finally seeking subscriptions in London, suggests that he did not hold out much expectation of further donations after the experiences with Cavendish and Banks.

In August 1795, with, it appears, little further activity, Beddoes announced that the amount of money received now stood at £735 16s (about £45 more than in June) and then listed a further eighteen subscribers bringing the total to £780 13s 6d. Beddoes also announced he would be publishing a further part of *Considerations* including a list of all the subscribers.¹⁷¹ Mostly comprising a large number of case histories, Beddoes published these names at the end of part three of his and Watt sr’s *Considerations*, dated 14 September 1795. This listed, without the individual sums, 191 separate subscribers, though once again, for reasons unknown, Galton and Withering were omitted. Such slips doubtless account for the discrepancy between the known donations of all but twelve on this list (totalling 721½ guineas or £757 11s 6d) with the amount of ‘Between eight and nine hundred Pounds’ that Beddoes claimed had been received;¹⁷² he soon admitted that the total was towards the lower end of the range.¹⁷³

By the end of 1795, after a year’s fundraising, Beddoes was nowhere near his original target of £3,000 to £4,000. Assuming the total donated was then around £820, the average donation would have been just over four guineas. Of this sum about £400 (or around half) came from just twenty-nine individuals contributing

¹⁶⁸ Thomas Beddoes to Thomas Wedgwood, 17 March 1795, 27 March 1795, 1 April 1795, WM MS MC 35. The quotation is from the middle letter.

¹⁶⁹ Thomas Beddoes to James Watt jr, 20 May 1795, LoB MS 3219/4/27/18.

¹⁷⁰ ‘Medical Pneumatic Institution’, *Morning Chronicle*, 19 June 1795, 1c and *Courier and Evening Gazette*, 19 June 1795, 1a, dated Clifton, 5 June 1795.

¹⁷¹ ‘Medical Pneumatic Institution’, *The Star*, 20 August 1795, 2a. These calculations exclude a couple of instances of double counting by Beddoes.

¹⁷² Thomas Beddoes and James Watt, *Considerations on ... Factitious Airs*, part 3 (London, 1795), pp.111-12.

¹⁷³ Thomas Beddoes, *Outline of a Plan for determining the Medicinal Powers of Factitious Airs* (Clifton, 1795), p.6.

ten guineas or more as illustrated in appendix 1. The average size of the remaining 156 known donations was therefore a little over two guineas. The number of subscribers, as well as the money raised, might have provided Beddoes with some confidence that he had some support on which to build further efforts. However, looking at the 197 people (appendix 3) known to have donated and the summary data relating to them (table 1), a somewhat different picture emerges.

Table 1: Summary data of MPI subscribers at the end of 1795	Subscription amount known and unknown	Subscription amount known
Number of subscribers	197	184
Women	17	17
Institutional or anonymous	5	3
Number whose age is known	135	123
Average age	44	44
Known geographical location	145	132
Warwickshire, Berwick, Shropshire, Lancashire, London	80	74
Edinburgh, Derbyshire, Staffordshire, Yorkshire, Bristol, Worcestershire	45	36
Rest of British Isles (15 counties)	20	18
Medics	69	62
MDs	45	42
Edinburgh MDs	20	20
FRSL, 1795	18	16
FRSL, later	9	6
FRSE, 1795	13	11
FRSE, later	2	1
MPs sitting	2	2
MPs before or later	6	6
Peers	2	2

Though Beddoes may not have recognised that saturation point had been reached, it would not have been lost on him that to achieve even his minimum target of £3,000 he would need at least 400 further subscribers (or twice the number he had already obtained after more than a year) to each donate five guineas. Such thoughts doubtless prompted him to write an *Outline of a Plan for Determining The Medicinal Powers of Factitious Airs*, dated 5 November 1795, where he admitted that ‘the attempt to procure contributions has met with inconsiderable success’. Nevertheless, he ‘deem[ed] it right to make another effort towards augmenting the fund’ before deciding to alter the use of what had already been raised.¹⁷⁴ To this end he then reprinted verbatim his *Proposal* of September 1794

¹⁷⁴ Beddoes, *Plan*, p.6.

(with the aim of starting work in May 1796¹⁷⁵) followed by a summary of the work in pneumatic medicine that had been undertaken by other physicians in Britain as well as elsewhere in Europe and the United States.

It was at this point that Beddoes returned to the political fray.¹⁷⁶ At the start of 1795 the twenty-two-year-old Samuel Coleridge (1772–1834), a failed soldier and former Cambridge undergraduate, but also an aspiring poet and philosopher, settled in Bristol. He was a democrat, who had publicly toasted Priestley,¹⁷⁷ and it is noticeable that it was only after the start of his acquaintance with Coleridge that Beddoes re-entered radical public politics. The immediate occasion for this was in consequence of the attack by a mob, protesting at the war and bread prices, on the carriage of the King, George III (1738–1820), on his way to open Parliament on 29 October 1795. The government took the opportunity presented by this incident to enact two bills severely curtailing the rights of free speech and assembly. Introduced into Parliament on 4 November they became law on 18 December. At a public meeting held on 17 November in Bristol to approve a loyal address for the King's safety, an amendment was added asking for the return of peace in support of which Coleridge reportedly made an elegant, pathetic and sublime speech.¹⁷⁸ To no effect however, as the chairman refused to accept the amendment. The same day Beddoes wrote a short pamphlet against the 'Gagging Bills' as they were called, framed in terms of a defence of the Bill of Rights.¹⁷⁹ He then helped organise a protest meeting¹⁸⁰ for 20 November where both he and Coleridge spoke.¹⁸¹ The same day Beddoes produced a short postscript to his pamphlet.¹⁸² Watt sr, who disagreed entirely with Beddoes about the Gagging Acts,¹⁸³ was not impressed, asking him: 'Why will you *waste* your time in working against P[itt]. & G[renville].? You will do more hurt to Pneumatics than you can possibly do good to the nation – amend your ways'.¹⁸⁴ Nearly a month later Beddoes responded as one might expect a late Enlightenment figure to do,

¹⁷⁵ Beddoes, *Plan*, p.13.

¹⁷⁶ Johnston, *Unusual Suspects*, pp.103-6.

¹⁷⁷ Samuel Coleridge to Henry Martin, 22 July 1794, in Earl Leslie Griggs, ed., *Collected Letters of Samuel Taylor Coleridge, Volume 1, 1785-1800* (Oxford, 1956), letter 52.

¹⁷⁸ 'Bristol', *The Star*, 23 November 1795, 1c-d republished in Lewis Patton and Peter Mann, eds., *The Collected Works of Samuel Taylor Coleridge. Lectures 1795 On Politics and Religion* (London, 1971), pp.359-62, speech description on p.361.

¹⁷⁹ Thomas Beddoes, *A Word in Defence of The Bill of Rights, against the Gagging Bills* (Bristol, 1795).

¹⁸⁰ Thomas Beddoes, *Essay on the Public Merits of Mr. Pitt* (London, 1796), p.9.

¹⁸¹ 'Bristol', *The Star*, 23 November 1795, 1d, republished in *Coleridge Lectures 1795*, pp.362-3.

¹⁸² Thomas Beddoes, *Postscript to the Defence of The Bill of Rights* (Bristol, 1795), republished in *Coleridge Lectures 1795*, pp.381-4.

¹⁸³ James Watt sr to Thomas Beddoes, 29 December 1795, LoB MS 3219/4/124/425.

¹⁸⁴ James Watt sr to Thomas Beddoes, 28 November 1795, LoB MS 3219/4/124/414.

by telling Watt sr that he knew ‘very well that my politics have been very injurious to the airs’ but ‘as every stroke aimed at liberty, equally threatens science, morals & humanity, it requires great self denial to look on patiently & silently, when such great interests are at stake’.¹⁸⁵

In addition to possibly being inspired to action by Coleridge, another motive for Beddoes’s return to public politics may have been his frustration at the slowness of obtaining financial support for the MPI, thus preventing its establishment. The lack of subscriptions he believed to be due to the ‘peculiar circumstances of the country’,¹⁸⁶ especially the way increasing taxation to pay for the war reduced the money that individuals possessed.¹⁸⁷ Therefore, with nothing to lose, early in 1796 he followed up his attacks on the Gagging Acts with a short tract on relieving the scarcity of food.¹⁸⁸ And towards the end of June published a substantial 200 page pamphlet entitled, with heavy irony, *An Essay on the Public Merits of Mr Pitt*.¹⁸⁹ Both of these were favourably reviewed in Coleridge’s new, but short-lived newspaper or journal *The Watchman*, published every eight days.¹⁹⁰ Beddoes had thus spectacularly ignored Black’s advice, conveyed to him nearly two years previously by Watt sr, that if he wanted the money for the MPI he needed to steer clear of politics; it is no surprise that Black thought the *Essay* a ‘foolish conceit’.¹⁹¹

Despite Black’s prediction, the resurgence of Beddoes’s political activism and the economic situation, subscriptions for the MPI continued to be made. By the middle of 1796, Beddoes had raised ‘I suppose £1300 or 1400’ which he regarded as ‘a tolerable sum’.¹⁹² This figure had been reached during the first half of 1796 by some high level lobbying to persuade particularly wealthy individuals to subscribe. The key figures here were, once again, Devonshire, but also Hare, who

¹⁸⁵ Thomas Beddoes to James Watt sr, 26 December 1795, LoB MS 3219/4/28/23.

¹⁸⁶ Thomas Beddoes to Davies Giddy, 31 July 1796, CRO MS DG/42/33.

¹⁸⁷ This is implied in Thomas Beddoes to Davies Giddy, 23 April 1796, CRO MS DG/42/23 and explicitly in Thomas Beddoes to Davies Giddy, 31 July 1796, CRO MS DG/42/33.

¹⁸⁸ Thomas Beddoes, *A Letter to the Right Hon. William Pitt, on the means of relieving the Present Scarcity and preventing the diseases that arise from meagre food* (London, 1796).

¹⁸⁹ Beddoes, *Merits*, again published by Johnson. Thomas Beddoes to Davies Giddy, 29 June 1796, CRO MS DG/42/20 complained that Johnson had not advertised it. The only, and very brief, advert that I have found is in *The Morning Chronicle*, 26 September 1796, 1c.

¹⁹⁰ Beddoes, *Present Scarcity* was reviewed in *The Watchman*, 17 March 1796 and the review of *Merits* was the first article in the issue of 5 May 1796. The texts were republished in Lewis Patton, ed., *The Collected Works of Samuel Taylor Coleridge. The Watchman* (London, 1970), pp.100-3 and 305-13.

¹⁹¹ Joseph Black to James Watt sr, 28 July 1796, *Black Correspondence*, 2: 763.

¹⁹² Thomas Beddoes to Davies Giddy, 31 July 1796, CRO MS DG/42/33.

like Devonshire, ‘disapproved & disliked Beddoes violence & politics’.¹⁹³ Nevertheless his previous medical experience with Beddoes led him to overlook these issues and he joined in the campaign to raise money for the MPI. Closely connected to the Devonshire House circle, Hare (who donated fifty guineas) concentrated mainly on his Whig contacts. By the end of May he had secured fifty guineas from the fourth Earl Fitzwilliam (1748–1833), fifty pounds from the third Earl of Egremont (1751–1837), and, finally, from the Duke of Devonshire, fifty guineas¹⁹⁴ – the delay doubtless reflecting the tensions in his marriage. One piece of lobbying that was not successful was that neither Devonshire, nor Hare, could persuade her brother, the second Earl Spencer (1758–1834), to contribute.¹⁹⁵ Nevertheless, they were successful in a few other cases including fifty pounds from the radical MP Samuel Whitbread (1764–1815), twenty guineas each from the fourth Duke of Marlborough (1739–1817) and the second Marquis of Hertford (1743–1822) and twenty-six pounds from Godfrey Webster (1749–1800). Together with Lambton’s fifty pounds, all this made a total of £437 15s¹⁹⁶ and eventually around £500 was raised by ‘Mr Hare’s great subscribers’.¹⁹⁷

In a letter to *The Star*, written in mid-June, but not published for a month, Beddoes affirmed that the project ‘will certainly at length be set on foot’ and, referring obliquely to Hare’s and Devonshire’s efforts, stated that some hundreds of pounds had been raised further to that already reported.¹⁹⁸ In August Beddoes announced in various newspapers these further subscriptions. First published in *The Star* on 15 August 1796 and in other papers in the ensuing weeks,¹⁹⁹ he hoped ‘some decisive knowledge may be procured for 1500l’ and that this would be speedily made up by members of the wealthy public. He did not, however, mention the total raised thus far, but it would have been just short of £1,300, roughly what he had told Giddy at the end of July.

For the next few months evidence is scarce, although Beddoes prepared for publication the fourth and fifth parts of his and Watt’s *Considerations*, the former containing many more case histories. Although given a 1796 imprint, it was first advertised in mid-February 1797.²⁰⁰ Furthermore, Beddoes continued engaging

¹⁹³ Duchess of Devonshire to Earl Spencer, 30 May 1796, BL MS add 75923 (no foliation).

¹⁹⁴ *Ibid.*

¹⁹⁵ *Ibid.*

¹⁹⁶ ‘Medical Pneumatic Institution’, *The Star*, 19 August 1796, 1c.

¹⁹⁷ Thomas Beddoes to James Watt sr, 29 May 1797, LoB MS 3219/4/29/13.

¹⁹⁸ Thomas Beddoes, ‘To the editor’, 13 June 1796, *The Star*, 13 July 1796, 4a. A similar letter was published in *The Morning Chronicle*, 23 July 1796, 3b.

¹⁹⁹ *The Star*, 15 August 1796, 1a; *The Times*, 17 August 1796, 1a; *The Sun*, 18 August 1796, 1d; *The Morning Chronicle*, 30 August 1796, 1b; *The Times*, 31 August 1796, 2a.

²⁰⁰ Beddoes and Watt, *Considerations*, parts 4 and 5, advertised in *The Morning Chronicle*, 13 February 1797, 2a and *The Star*, 14 February 1797, 1a. See also Thomas Beddoes to

in political activism, drafting, at the end of April, a petition to the King ‘praying him to dismiss his present Ministers’. This was presented and approved at a meeting of Bristol citizens on 26 April, held in the Guildhall and chaired by John Wedgwood,²⁰¹ who now lived north of Clifton having purchased Cote House in mid-1796 for £16,000.²⁰² Such activities would account for the paucity of references to developing the MPI. Nevertheless, in mid-January 1797 Beddoes had told Watt sr that he intended ‘no idea of further delay in the pneumatic Instⁿ’ and discussed the kind of person who should be appointed to assist in the MPI; one of the criteria was that he must have ‘the genius of experiment’.²⁰³ Watt sr suggested that Black or the chemistry lecturer at Glasgow University, Robert Cleghorn (c.1755–1821), might be approached to ‘recommend ... a young chemical surgeon’ and pointing out that ‘Young Irvine ... now at Edⁿ ... is said to be clever’.²⁰⁴ Later in the year a member of Tom Wedgwood’s circle, the mathematician and natural philosopher John Leslie (1766–1832), sounded him out about the appointment, but admitted that he lacked medical knowledge.²⁰⁵ There is no evidence that Beddoes pursued any of these suggestions.

In April Tom Wedgwood broke the impasse of finding sufficient funds for the MPI and contributed the enormous sum of £500 towards the subscription²⁰⁶ and Beddoes thought that he might eventually add a further two or three hundred pounds.²⁰⁷ Quite what prompted Wedgwood, now very wealthy after his father’s death, to this munificent act of generosity is not clear, although he may just have been honouring the family promise to ensure that the project happened. He was

James Watt, 18 January 1797, LoB MS 3219/4/29/12, which suggested that Beddoes already had a printed copy in his possession.

²⁰¹ ‘Bristol Meeting’, *The London Evening Post*, 27-29 April 1797, 3c. Josiah Wedgwood jr was involved in a similar move in Staffordshire, Josiah Wedgwood jr to James Watt jr, 3 June 1797, LoB MS 3219/6/2/W/181.

²⁰² *Bristol Mercury*, 4 July 1796, 3e.

²⁰³ Thomas Beddoes to James Watt sr, 18 January 1797, LoB MS 3219/4/29/12.

²⁰⁴ James Watt sr to Thomas Beddoes, 23 January 1797, LoB MS 3219/4/124/505. William Irvine (1776–1811), later an army physician, was then completing his medical studies at Edinburgh University.

²⁰⁵ John Leslie to Tom Wedgwood, 19 July 1797, WM MS E1-258.

²⁰⁶ Wedgwood’s donation was reported in the April issue of *The Monthly Magazine*, 1797, 3: 302 from where, presumably, *The Morning Chronicle*, 5 May 1797, 3b obtained the story. See also Thomas Beddoes to James Watt sr, 26 May 1797, LoB MS 3219/4/29/13.

²⁰⁷ Thomas Beddoes to James Watt sr, 30 May 1797, LoB MS 3219/4/29/14. Following Stock, *Beddoes*, p.154, Stansfield, *Beddoes*, p.159, Jay, *Atmosphere*, p.156, Levere, ‘Collaborations’, p.214 and Johnston, *Unusual Suspects*, p.101 all asserted that the sum was £1,000. This exaggeration might be due to Wedgwood providing Beddoes in 1801 with a further £150 (WM MS 17639-95) and the following year an additional £400 specifically for the MPI (WM MS 28509-40).

also ill²⁰⁸ which may have provided a motive, but it should also be noted that he used his wealth to provide significant financial support for more than a dozen members of his circle, including, with his brother Josiah Wedgwood jr, a lifetime annuity of £150 to Coleridge.²⁰⁹ With the total subscribed now around £1,800, Beddoes would have seen that the practical realisation of his project was near. Indeed since his medical practice had been so profitable he decided to personally devote one or two hundred pounds annually to the MPI.²¹⁰ However including this personal support would only just have substantiated Beddoes's claim to the American physician Samuel Mitchill (1764–1831) that he had 'between 2 and £3000 for my Pneumatic Hospital, which I shall establish forthwith'.²¹¹

Now that establishing the MPI had nearly become a practical proposition, other issues came to the fore. Not all subscribers thought Bristol the obvious location for the MPI. This was Hare's view but he did want Beddoes to be involved in its running.²¹² Beddoes took this issue sufficiently seriously to consider moving to London in the winter for that purpose, but only if he could maintain the same lucrative income there as in Bristol.²¹³ But his correspondence betrayed no sense of urgency. Watt sr suggested establishing a committee, a proposal that Beddoes supported,²¹⁴ and indeed by the end of July it existed, though its membership is not known suggesting a lack of effectiveness. Beddoes throughout the latter part of 1797 ascribed the delay in establishing the MPI to finding a suitable Superintendent, noting in October, that despite 'many applications' he was 'disappointed' at not yet having found one.²¹⁵

But one does have to wonder about the extent of Beddoes's commitment to the practical realisation of the plan, as opposed to promoting an idea. For instance during the summer of 1797, Beddoes proposed that a course of 'Lectures on Anatomy, and the Preservation of Health' should be delivered by two Bristol surgeons, Francis Cheyne Bowles (1771–1807) and Richard Smith (1773–1843).²¹⁶ Beddoes arranged that the cost of the lectures would be underwritten to

²⁰⁸ See Erasmus Darwin to Thomas Wedgwood, 27 March 1797, *Darwin Collected Letters*, p.511.

²⁰⁹ Listed in WM MS 28509-40. For Coleridge see David V. Erdman, 'Coleridge, Wordsworth, and the Wedgwood Fund', *Bulletin of the New York Public Library*, 1956, **9**: 425-43, 487-507.

²¹⁰ Thomas Beddoes to James Watt sr, 30 May 1797, LoB MS 3219/4/29/14.

²¹¹ Thomas Beddoes to Samuel Mitchill, 15 June 1797, *The Medical Repository*, 1797, **1**: 259.

²¹² Thomas Beddoes to James Watt sr, 26 May 1797, LoB MS 3219/4/29/13.

²¹³ Thomas Beddoes to James Watt sr, mid-June 1797, LoB MS 3219/4/29/16.

²¹⁴ Thomas Beddoes to James Watt sr, 30 May 1797, LoB MS 3219/4/29/14.

²¹⁵ Thomas Beddoes to Thomas Girdlestone, 25 July 1797, private possession; Thomas Beddoes to James Watt sr, 24 October 1797, LoB MS 3219/4/29/23.

²¹⁶ Thomas Beddoes to Thomas Wedgwood, 3 August 1797, WM MS MC 35.

the sum of £50 by among others, Lansdowne, Watt jr and Thomas Wedgwood.²¹⁷ Beddoes told Watt sr that the opening lecture, written by him, would be delivered by Bowles on 17 November at 7pm at the Red Lodge ‘unless this Buonaparte should knock’.²¹⁸ Come the evening of the lecture, Beddoes, despite previous requests, had not supplied the text, so Bowles went to Clifton where he found Beddoes completing the manuscript.²¹⁹ It was not until eight that Bowles reappeared, after running the mile from Clifton (fortunately downhill). He read the lecture from Beddoes’s physician’s scrawl ‘breathless & in a profuse sweat’, but gave up about three quarters of the way through to be greeted by ‘A mixture of applause & dissatisfaction’.²²⁰ Beddoes did have the decency to provide a written apology, adding that the problems with the lecture’s delivery were of ‘no consequence’²²¹ as it would shortly be published. It appeared as a seventy-page pamphlet dated the following day and dedicated to the underwriters ‘and particularly Thomas Wedgwood’.²²²

Further evidence that Beddoes had to some extent become disengaged with establishing the MPI is provided by Watt jr’s suggestion that Beddoes deliver thirty chemical lectures between March and May 1798. Wedgwood had been happy with the anatomy lectures, but thought that these additional lectures would ‘retard the Pn^c Instⁿ’.²²³ It probably did, since the lectures, delivered by Beddoes and a couple of assistants, again in the Red Lodge, proved so popular that a fund was started to construct a 200 seat fully equipped lecture room in Berkeley Square. By the start of June £800 or £900 had been raised with more in

²¹⁷ A copy of the prospectus for this course, dated 8 October 1797, is in BRO MS 35893/36/d(i), p.588bis and ‘A Brief View of the Subjects Comprehended in the Anatomical Lectures’ is in BRO MS 35893/36/e(i), p.398bis. For the underwriting see BRO MS 35893/36/d(i), p.528. These documents are contained in volumes that are part of a number of scrap books compiled by Smith documenting, through his own written accounts, newspaper clippings, lecture notices and the like, the lives of people connected with the Bristol infirmary. The pagination of the volumes is somewhat irregular.

²¹⁸ Thomas Beddoes to James Watt sr, 13 November 1797, LoB MS 3219/4/29/25.

²¹⁹ BRO MS 35893/36/d(i), p.532.

²²⁰ *Ibid.*, p.530.

²²¹ *Ibid.*

²²² Thomas Beddoes, *A lecture introductory to a course of popular instruction on the constitution and management of the human body* (Bristol, 1797).

²²³ Thomas Beddoes to James Watt jr, late-December 1797, LoB MS 3219/6/2/B/61. For Watt jr’s role see Thomas Beddoes to James Watt jr, 9 March 1798, LoB MS 3219/6/2/B/68 and Anna Beddoes to James Watt jr, 10 April 1798, LoB MS 3219/6/2/B/70. See also Thomas Beddoes to James Watt sr, 21 April 1798, LoB MS 3219/4/29/30. A copy of the printed flyer for the lectures, dated 11 December 1797, is in BRO MS 35893/36/e(i), p.398bis.

prospect.²²⁴ Because of roofline restrictions, permission to build was refused and when they sought to convert a building on the Green, the Dean and Chapter of the cathedral also refused on the grounds of the involvement of ‘that Jacobin Beddoes’.²²⁵

Another matter that could potentially have diverted Beddoes’s attention from both the MPI and the lecture courses, occurred just before Christmas 1797, when, at the insistence of Lady Anne Lambton (1772–1832),²²⁶ Beddoes was on point of joining her to visit her husband William Lambton in Italy.²²⁷ However, news of his death in Pisa on 30 November reached England right at the end of December²²⁸ thus obviating the need to go Italy. That Beddoes even contemplated such an extended journey and the effort he put into the lectures, suggests that the MPI was not always his main priority. Early in 1798, Beddoes proposed a further delay by suggesting that he ‘take a medical tour in [the] summer & then ... establish the Pn^c Instⁿ’.²²⁹ Exactly a month later he wrote about beginning it early in the following winter;²³⁰ thereafter his surviving letters are silent on the subject for more than three months.

Beddoes’s attention may have re-focussed on the MPI in consequence of Lambton’s death, since he bequeathed £300 towards the subscription.²³¹ Furthermore, his widow and her children’s guardians agreed that Beddoes should be asked to educate the two older boys, John George Lambton (1792–1840), aged six, and William Lambton (1793–1866), aged five, for which he would be paid

²²⁴ Thomas Beddoes to Davis Giddy, 1 June 1798, CRO MS DG/42/37. See also Thomas Beddoes to James Watt sr, 27 May 1798, LoB MS 3219/4/29/31 and BRO MS 35893/36/d(i), pp.534-6.

²²⁵ BRO MS 35893/36/d(i), p.536.

²²⁶ She was titled by virtue of being the daughter of an Earl.

²²⁷ Thomas Beddoes to James Watt jr, 23 December 1797, LoB MS 3219/6/2/B/62; Anna Beddoes to James Watt jr, 25 December 1795, LoB MS 3219/6/2/B/63.

²²⁸ The earliest report appears to be in *Lloyd’s Evening Post*, 25-27 December 1797, 628b. Thomas Beddoes to James Watt jr, late-December 1797, LoB MS 3219/6/2/B/61. Reid, *Durham*, 1: 36.

²²⁹ Thomas Beddoes to James Watt, jr, 25 January 1798, LoB MS 3219/4/29/27.

²³⁰ Thomas Beddoes to James Watt, jr, 25 February 1798, LoB MS 3219/6/2/B/65. See also Thomas Beddoes to Davies Giddy, 21 March 1798, CRO MS DG/42/28.

²³¹ Thomas Beddoes to James Watt sr, 15 July 1798, LoB MS 3219/4/29/32. Thomas Beddoes to Samuel Whitbread, 17 October 1798, BALAS MS W/1/4620 wrote that the bequest was £350, but he might have combined it with Lambton’s earlier donation.

several hundred pounds a year.²³² In August 1798 Beddoes visited Lambton Park and returned with the boys to Bristol at the end of the month.²³³

In the meantime, Beddoes had finally found someone whom he regarded as suitable to be Superintendent of the MPI. Whilst staying in Penzance during the winter of 1797/8 Gregory Watt and Tom Wedgwood had formed a friendship with an apprentice apothecary, the nineteen-year-old Humphry Davy, also known to Davis Giddy. Their personal recommendations, especially those of Watt and Giddy, together with some of Davy's scientific writings,²³⁴ convinced Beddoes, without meeting him, that he was the right person for the MPI, telling Watt sr

I have been corresponding lately with Humphry Davy of Penzance, concerning whom apply to Gregory – I think him most admirably qualified to be the superintendent. I have read the acc^t of some expt^s of his; & he appears to me to have uncommon talents for philosophical investigations. He has besides entered with ardour into the career of chemical philosophy. Giddy entertains the same high opinion of his talents.²³⁵

On this basis Davy was appointed Superintendent of the MPI, travelling to Bristol in October 1798 to take up his new role. Davy did not disappoint. Ten days after his arrival Beddoes wrote Whitbread a 'begging letter', not mentioning his earlier donation, but asking for £1,000 to supply the deficiency between what had been obtained and what Beddoes thought necessary. He added that he had 'met with a young man qualified beyond my most sanguine hopes to act as Superintendent. I propose that it sh^d be under his management & my own occasional inspection. I think to set it on foot immediately'.²³⁶ Beddoes effectively entrusted Davy with the task of spending the money that he and others had taken so long to raise. He arranged for Davy to meet some of the MPI's major backers. He quickly visited Hare and immediately afterwards began negotiations resulting in the acquisition of a house in Dowry Square for the MPI. A couple of weeks later he travelled to

²³² The letters from Thomas Beddoes to Thomas Wilkinson (one of the trustees of the Lambton children) from 1798 to 1801 in Lambton Park MS refer frequently to payments to Beddoes of (usually) around £300 tranches for the boys' education. These payments may be the source for the statement that seems first to have appeared in John Davy, *Fragmentary Remains, Literary and Scientific of Sir Humphry Davy, Bart.* (London, 1857), p.18, that Lambton gave £1,500 for the MPI. This was repeated in Meteyard, *Englishmen*, p.84 and Fullmer, *Davy*, p.108 while Jay, *Atmosphere*, p.159, asserted that this sum came from Lambton's widow. No contemporary evidence for this payment has been found.

²³³ Thomas Beddoes to Davies Giddy, 30 August 1798, CRO MS DG/42/31.

²³⁴ Later published as Humphry Davy, 'An Essay on Heat, Light, and the Combinations of Light', in Thomas Beddoes, ed., *Contributions to physical and medical knowledge, principally from the West of England* (Bristol, 1799), pp.5-147.

²³⁵ Thomas Beddoes to James Watt sr, 15 July 1798, LoB MS 3219/4/29/32.

²³⁶ Thomas Beddoes to Samuel Whitbread, 17 October 1798, BALAS MS W/1/4620.

Birmingham to see Watt sr and Keir.²³⁷ As a result of Davy's activities, in March 1799 *The Bristol Gazette* carried an advert announcing the opening of the 'New Medical Institution' which would be attended, presumably daily, between 11am and 1pm by Beddoes and Davy.²³⁸

Beddoes believed that the MPI was 'perhaps, the first example, since the origin of civil society, of an extensive scheme of pure scientific medical investigation'.²³⁹ And, until his departure for the Royal Institution in early 1801, Davy did make the MPI into a significant research site in chemistry, medicine and early electricity, implementing Beddoes's general idea for an institution devoted to medical and scientific research. It is noticeable that the MPI did not long survive after Davy left, turning instead into a more conventional hospital.²⁴⁰ The effects of both Davy's presence and absence suggests that once the money had been raised, Beddoes decided that his own role in the MPI would be limited, a continuation, perhaps, of previous indications that he was no longer wholly committed to the project. In his move to London, Davy brought the fund-raising experience, the popular lecturing and the research ethos associated with the MPI to the Royal Institution, the latter being something that had never been intended or even envisaged by its founders.²⁴¹ It is perhaps here, despite the reduction in his commitment, that the transformative and enduring legacy of Beddoes's efforts in establishing the MPI should be sought. This transformation was profoundly affected by Beddoes's responses to events in France, to the actions of the supporters of Pitt's Tory government in suppressing and punishing political dissent and to the long war waged by Britain against Republican and later Imperial France. At one level it is extraordinary in the face of such unremitting hostility that Beddoes, maintaining his Enlightenment values, achieved anything at all by way of public support. But the war and the associated political repression brought into being many features of the modern British state, from income tax to the census. It should therefore scarcely come as a surprise that the practice of science would also be affected fundamentally by the conflict and politics of the time.

²³⁷ Humphry Davy to Grace Davy, 11 October 1798, RI MS HD/26/A/1.

²³⁸ *The Bristol Gazette*, 21 March 1799, 3c.

²³⁹ Thomas Beddoes, *Notice of Some Observations made at the Medical Pneumatic Institution* (Bristol, 1799), p.4.

²⁴⁰ Mary E. Fissell, *Patients, Power, and the Poor in Eighteenth Century Bristol* (Cambridge, 1991), pp.118-19.

²⁴¹ Frank A.J.L. James, 'Introduction' in Frank A.J.L. James, ed., *The Common Purposes of Life': Science and Society at the Royal Institution of Great Britain* (Aldershot, 2002), pp.1-16, p.8.

Appendix 3. MPI Subscribers to the end of 1796

Publication of subscription and its amount: **a** *Aris's Birmingham Gazette*, 17, 24 November and 1 December 1794, 3e; **b** *The Norfolk Chronicle*, 22 November 1794, 2d; **c** *The Derby Mercury*, 27 November 1794, 4b; **d** *The Newcastle Courant*, 4 April 1795 1c; **e** *The Staffordshire Advertiser*, 30 May 1795, 3c; **f** *The Courier and Evening Gazette*, 19 June 1795, 1a; **g** *The Star*, 20 August 1795, 2a; **h** Beddoes and Watt, *Considerations*, part 3, pp.111-12 (October 1795); **i** *The Times*, 31 August 1796.

Source abbreviations: AC = *Alumni Cantabrigienses*; AO = *Alumni Oxonienses*; GM = *Gentleman's Magazine*; HP = *History of Parliament*; MM = *Monthly Magazine*; ODNB = *Oxford Dictionary of National Biography* (u b d f h s, under brother, daughter, father, husband, son); SM = *Scots Magazine*; TNA = The National Archives; Wallis = *Eighteenth Century Medics*.

Other abbreviations: FRSE = Fellow of the Royal Society of Edinburgh; FRSL = Fellow of the Royal Society of London; g = guinea; n/k = not known; YoB = Year of Birth; YoD = Year of Death

Name	YoB	YoD	Geographical Location	Notes	Source	#
Abergavenny Book Club			Monmouthshire.			n/k
John Alderson	1757	1829	Yorkshire, Hull	MD, Aberdeen.	ODNB.	f 2g
Disney Alexander	1769	1844	Yorkshire, Wakefield.	MD. Methodist.	Wallis.	f 2g
Matthew Anstice						f 1g
Thomas Armstrong	1762c	1829	London, St Marylebone.	Surgeon.	GM, 1830, 100 (1): 90.	g 1g
A. Aspinal						f 2g
William Banks						f 5g

Name	YoB	YoD	Geographical Location	Notes	Source	#
Rev Dr Thomas Barnes	1747	1810	Lancashire, Warrington.		ODNB.	f 1g
Benjamin Bell	1749	1806	Scotland, Edinburgh.	FRSE, 1783. Surgeon.	ODNB.	n/k
John Bell	1763	1820	Scotland, Edinburgh.	Surgeon.	ODNB.	n/k
Joseph Black	1728	1799	Scotland, Edinburgh.	FRSE, 1783. MD, Edinburgh, 1754. Edinburgh Professor.	ODNB.	f 5g
Alexander Blair	1737c	1815	London, Portland Place.	Industrialist. Soap manufacturer. Non-conformist.	ODNBud.	f 10g
Anne Boulton	1768	1829	Warwickshire, Birmingham.	Matthew Boulton's daughter.	ODNBuf.	af 3g
Matthew Boulton	1728	1809	Warwickshire, Birmingham.	FRSL, 1785. FRSE, 1784. Industrialist.	ODNB.	af 10g
Matthew Robinson Boulton	1770	1842	Warwickshire, Birmingham.	Industrialist. Matthew Boulton's son.	ODNBuf.	af 3g
Henry Bowles	1765	1804	Hampshire, Winchester.	MD, Edinburgh, 1790. Army doctor; died at Gibraltar.	<i>Munk's Roll of the Royal College of Physicians.</i>	g 1g
Joseph Brandreth	1746	1815	Lancashire, Liverpool.	MD, Edinburgh, 1770. Liverpool Infirmary.	ODNB.	f 3g

Name	YoB	YoD	Geographical Location	Notes	Source	#
Thomas Gunter Brown	1756	1834		Army officer on half-pay.	J.P.T. Bury and J.C. Barry, eds., <i>An Englishman in Paris: 1803. The Journal of Bertie Greatheed</i> , London, 1953, p.111.	f 2g
Patrick Brydone	1736	1818	Berwick, Lennel House.	FRSL, 1773. FRSE, 1783. Traveller and writer.	ODNB.	d 1g
Rev Calcott						f 2g
William Campbell	1766c	1812	Berwick.	MD.	SM, 1812, 74 : 319.	d 1g
Joseph Camplin	1750c	1836	Lancashire, Liverpool. Gloucestershire connection via wife.	MD, Edinburgh, 1775. Liverpool Infirmary.	Burial index.	f 3g
Walter William Capper	1772	1834	Warwickshire, Birmingham.	Hardware merchant. High Bailiff of Birmingham.	<i>Gardener's Magazine</i> , 1835, 11 : 56.	f 5g
John Carmichael		1811	Warwickshire, Birmingham.	MD, Edinburgh.	GM, 1811, 81 (1): 94.	af 2g
Georgiana Cavendish, <i>née</i> Spencer, Duchess of Devonshire	1757	1806	London.	Whig aristocrat.	ODNB.	f 10g
William Cavendish, 5 th Duke of Devonshire (1764)	1748	1811	London.	Whig aristocrat.	ODNB.	i 50g

Name	YoB	YoD	Geographical Location	Notes	Source	#
William Chambers		1804	Worcester.	MD. Worcester Infirmary.	GM, 1804, 74 (2): 884.	f 1g
William Clayfield	1772	1837	Bristol.		GM, 1837, 7 : 455.	f 3g
Charles Boothby Clopton, <i>ne</i> Skrymsher	1740	1800	London.		GM, 1800, 70 : 800.	i 50g
John Clunie		1819	Berwick.	Corn merchant.	SM, 1819, 83 : 585.	d 1g
William Coates			Bristol.	Surgeon. Known to Southey.		f 2g
Edward Coleman	1766	1839	London.	FRSL, 1831. Veterinary professor.	GM, 1839, 12 : 211.	n/k
Mrs Congreve						g 2g
John Constable		1830	Berwick.		TNA will.	d 1g
Astley Paston Cooper	1768	1841	London.	FRSL, 1802. Surgeon. Lecturer. 1 st Bt (1821).	ODNB.	n/k
John Cox				MD, Edinburgh.	Wallis.	g 10g
Peter Crompton	1760?	1833	Derby and Liverpool.	MD, Leiden, 1785. Friend of Thelwell, Coleridge etc.	ODNBus.	cf 2g
James Currie	1756	1805	Lancashire, Liverpool.	FRSL, 1792. MD, Glasgow, 1780. Liverpool Infirmary.	ODNB.	f 3g
Erasmus Darwin	1731	1802	Derby.	FRSL, 1761. MD, Cambridge, 1759.	ODNB.	cf 5g

Name	YoB	YoD	Geographical Location	Notes	Source	#
Erasmus Darwin	1759	1799	Derby.	Lawyer.	GM, 1799, 69 : 1194.	cf 1g
Robert Waring Darwin	1766	1848	Shropshire, Shrewsbury.	FRSL, 1788. MD, Leiden, 1785.	<i>Proceedings of the Royal Society of London</i> , 1849, 5 : 883.	f 5g
Davies				Surgeon.		f 1g
David Davies	1760c	1844	Bristol.	MD. St Peter's Hospital, Bristol.	GM, 1844, 21 : 330.	f 1g
John Dearman	1761	1808	Warwickshire, Birmingham.	Industrialist. Iron founder. Quaker.	GM, 1808, 78(1) : 272.	af 2g
Rev Thomas Dethick	1764c	1833	Shropshire, Oldbury.		GM, 1833, 103(2) : 552.	f 2g
Andrew Duncan	1744	1828	Scotland, Edinburgh.	FRSE, 1783. MD, St Andrews. Edinburgh Professor.	ODNB.	n/k
David Dundas	1749	1826	London.	Surgeon. Royal Sergeant. Bt 1 st (1815)	GM, 1826, 96(1) : 177.	f 2g
M.W. Earl						f 2g
Lovell Edgeworth	1775	1842	Bristol and Ireland.	FRSL, 1822. Writer.	GM, 1843, 19 : 222.	n/k
Richard Lovell Edgeworth	1744	1817	Bristol and Ireland.	FRSL, 1781. Writer and educationalist.	ODNB.	f 5g
John Ewart		1800	Somerset, Bath.	MD, Edinburgh. Bath Infirmary; died in India.	GM, 1800, 70 : 901.	f 3g

Name	YoB	YoD	Geographical Location	Notes	Source	#
Rev Thomas Exon	1749c	1821	Somerset.		MM, 1821, 52 : 275.	g 1g
Thomas Eyton	1754c	1816	Shropshire, Wellington.	Banker and Receiver General for Shropshire; committed suicide due to fraud.	AC.	f 10g
Walter Farquhar	1738	1819	London.	MD, Aberdeen, 1796. Pitt and Melville's physician. 1 st Bt (1796).	ODNB.	n/k
W. Ferriday			Shropshire name.			f 5g
Field				Surgeon.		f 1g
William Wentworth, 2 nd Earl Fitzwilliam, (1756)	1748	1833	London.	Whig aristocrat.	ODNB.	i 50g
Floyer				Surgeon.		f 2g
Matthew Forster	1730	1798	Berwick.	Retired army officer.	GM, 1798, 68 : 811.	d 1g
Samuel Fox	1765	1851	Derby.	Hosier.	GM, 1851, 35 : 569.	cf 1g
William Francis			Warwickshire, Birmingham.	Low Bailiff of Birmingham, 1805.		af 2g
Richard Forester French	1771	1843	Derby.	MD. Worked with Darwin.	Stephen Glover, <i>The History of the Country of Derby</i> , 2 volumes, Derby, 1829, 2 : 591.	cf 2g

Name	YoB	YoD	Geographical Location	Notes	Source	#
Andrew Fyfe	1752	1824	Scotland, Edinburgh.	Surgeon. Lecturer.	ODNB.	n/k
Samuel Galton jr	1753	1832	Warwickshire, Birmingham.	FRSL, 1785. Industrialist.	ODNB.	a 10g
Rev Robert Edward Garnham	1753	1802		Theologian.	GM, 1802, 72 (2): 1220-1.	f 2g
John Gell	1740c	1806		Vice-Admiral.	ODNB.	f 2g
James Gerard	1753c	1837	Lancashire, Liverpool.	MD, Edinburgh. Mayor of Liverpool, 1808-9.	<i>Liverpool Mercury</i> , 3 February 1837, 39d.	f 3g
Davies Giddy	1767	1839	Cornwall.	FRSL, 1791. FRSE, 1828. Whig. MP, 1804-1832.	ODNB.	f 5g
William Gilby	1757c	1840	Warwickshire, Yardley; Bristol, Clifton.	MD, Leiden, 1784. SPCK Member.	GM, 1840, 14 : 672	af 3g
J. Gill						f 3g
Antonio Gimbernat	1734	1816		FRSE, 1793. Spanish surgeon.	N.M. Matheson, 'Antonio de Gimbernat, 1734-1816', <i>Proceedings of the Royal Society of Medicine</i> , 1949, 42 : 407-10.	f 3g
Carlos Gimbernat	1768	1834		Spanish chemist.	Manuel Julivert, <i>Una historia de la geología en España</i> , Barcelona, 2014, pp.58-9.	f 2g

Name	YoB	YoD	Geographical Location	Notes	Source	#
James Goddington	1749c	1821	Warwickshire, Birmingham.	Banker.	W. Eliot, <i>The Parish Church of Aston-Juxta-Birmingham: Its Ancient History, and Its Modern Restoration</i> , Birmingham, 1889, p.38.	f 3g
James Greene						f 10g
Anthony Gregson	1720c	1806	Berwick, Lowlin.		<i>Newcastle Courant</i> , 5 April 1806.	d 1g
Burnet Grieve			Berwick.			d 1g
Burnet Roger Grieve	1725c	1812	Berwick.	Industrialist. Brewer.	GM, 1812, 82 (2): 419.	d 1g
T. Grigby jr						fg 2g
John Guillemard	1764	1844		FRSL, 1806. Giddy's brother-in-law.	H.G. Lyons, ' <u>John Lewis Guillemard (1764-1844)</u> ', <i>Notes and Records of the Royal Society of London</i> , 1940, 3 : 95-96.	f 10g
Thomas Hall	1747	1815	Berwick.	Major, volunteer corps. Whig. MP, 1802-1803	HP.	d 1g
William Hall		1800	Berwick, White-Hall.	FRSE, 1792.	TNA will.	d 1g
James Hall	1761	1832	Scotland, Dunglass.	FRSL, 1806. FRSE, 1784. Geologist. 4 th Bt (1776). MP, 1807-1812.	ODNB.	df 5g

Name	YoB	YoD	Geographical Location	Notes	Source	#
James Hare	1747	1804	London.	Whig. Member of Devonshire circle. MP, 1772-1774, 1781-1804.	ODNB.	i 50g
T. Hart						f 2g
T. Hawes				MD.		g 2g
Thomas Henry	1734	1816	Lancashire, Manchester.	FRSL, 1775. Apothecary. Unitarian.	ODNB.	f 1g
Hill				Surgeon.		f 5g
Thomas Hobbes	1757c	1820	Wales, Swansea.	MD.	<i>New Monthly Magazine</i> , 1820, 14 : 360.	f 5g
Benjamin Hobhouse	1757	1831	Bristol.	FRSL, 1798. Whig with dissenting tendencies. 1 st Bt (1812). MP, 1797-1818.	ODNB.	f 10g
James Home	1760	1844	Scotland, Edinburgh.	FRSE, 1787. MD, Edinburgh. Edinburgh Professor.	ODNB.	f 2g
John Humberstone	1768	1806	Warwickshire, Birmingham; Staffordshire, Tamworth.	MD, Edinburgh.	MM, 1806, 21 : 372.	af 2g
James Hutton	1726	1797	Scotland, Edinburgh.	FRSE, 1783. MD, Leiden. Geologist.	ODNB.	f 1g

Name	YoB	YoD	Geographical Location	Notes	Source	#
Jan Ingen-Housz	1730	1799	Wiltshire, Bowood.	FRSL, 1769. Natural philosopher.	ODNB.	n/k
John Jeffreys	1753c	1808	Berwick.		MM, 1808, 25 : 365.	d 1g
William Jeffreys	1745c	1826	Berwick.		GM, 1826, 96(2) : 380.	d 1g
Rev A. Johnson						f 10g
Edward Johnstone	1757	1851	Warwickshire, Birmingham.	MD, Edinburgh, 1779. Birmingham General Hospital.	ODNB.	af 10g
James Johnstone	1730	1802	Worcester.	MD, Edinburgh, 1750. Worcester Infirmary. Whig.	ODNB.	f 2g
John Johnstone	1768	1836	Worcester and Birmingham.	FRSL, 1813. MB, Oxford, 1793, MD, Oxford, 1800	ODNB.	af 5g
James Keir	1735	1820	Warwickshire, Birmingham.	FRSL, 1785. Industrial chemist.	ODNB.	af 3g
Alexander Kellock	1755c	1844	Berwick.	MD.	Death certificate.	d 1g
Richard Kirwan	1733	1812	Ireland, Dublin.	FRSL, 1780. FRSE, 1796. Chemist. MRIA, 1785.	ODNB.	n/k
Lady unknown	n/a	n/a				f 1g
William Henry Lambton	1764	1797	Durham.	Mineowner and Whig MP, 1787-1797.	HP.	i £50

Name	YoB	YoD	Geographical Location	Notes	Source	#
William Legge, Dartmouth, 2 nd Earl of (1832)	1731	1801	London.	FRSL, 1754.	ODNB.	f 10g
Mrs Lewis sr						f 1g
Isaac Liptrott	1770	1802	Derby.	MB, Cambridge, 1796.	AC.	cf 1g
J. Lloyd						f 2g
Thomas Lloyd				Captain, RN.		f 2g
J.P. Luard						f 2g
T. Male						f 2g
Manson			Berwick, Horncliff.	Major.		d 1g
R. Marsland						f 1g
Mason						g 4g
Thomas Maurice				Surgeon.		g 1g
Mead						f 1g
W. Middleditch						f 1g
Rev Dr James Andrew Milnes	1733c	1814	Nottinghamshire, Newark.		AO.	cf 10g

Name	YoB	YoD	Geographical Location	Notes	Source	#
Alexander Monro	1733	1817	Scotland, Edinburgh.	FRSE, 1783. MD, Edinburgh. Edinburgh Professor.	ODNB.	f 3g
Samuel More	1726	1799	London.	Secretary, Society of Arts.	ODNB.	n/k
Morgan						f 1g
Walter Michael Moseley	1765	1827	Shropshire, Buildwas.	Studied at Edinburgh; interested in science.	GM, 1827, 97 (2): 367-70.	f 2g
Richard Percival Moulson	1774	1826	Lancashire, Manchester.	Industrialist. Cotton spinner. Boulton and Watt connection. Unitarian. Nephew of Thomas Percival.	GM, 1826, 96 (1): 95.	f 1g
Robert Owen	1771	1857	Lancashire, Manchester.	Industrialist. Cotton spinner and philanthropist. Boulton and Watt connection	ODNB.	f 1g
Rev Dr Samuel Parr	1747	1825	Warwickshire, Hatton.		ODNB.	f 3g
Richard Pearson	1764	1836	Warwickshire, Birmingham.	MD, Edinburgh. Brother of Thomas Pearson.	ODNB.	af 2g
Thomas Aris Pearson	1761c	1801	Warwickshire, Birmingham.	Printer. Brother of Richard Pearson. Government supporter.	GM, 1801, 71 (2): 1157.	af 3g
Mrs Pease						f 2g

Name	YoB	YoD	Geographical Location	Notes	Source	#
Thomas Percival	1740	1804	Lancashire, Manchester.	FRSL, 1765. FRSE, 1787. MD, Leiden. Manchester Infirmary. Unitarian.	ODNB.	f 2g
Mrs Perkins						g 4g
Rev Perkins						g 4g
William Petty, 2 nd Earl of Shelburne (1761), 1 st Marquis of Lansdowne (1784)	1737	1805	Wiltshire, Bowood.	Former Prime Minister. MP, 1760-1761.	ODNB.	f 30g
Richard Pew	1753c	1834	Dorset, Sherborne.	Surgeon.	GM, 1834, 1: 565.	g 1g
Thomas Phillips						f 1g
H. Philpot						fg 2g
Potts			Berwick.	Captain.		d ½g
Rev William Powell						f 2g
Mrs Elizabeth Presland		1797	Shropshire links.		MM, 1797, 3: 407.	f 1g
Probyn						g 2g
Edmund Bond Prosser			Monmouthshire, Monmouth.	Surgeon.		f 1g
David Rankin			Ireland.	MD, Glasgow.		g 1g

Name	YoB	YoD	Geographical Location	Notes	Source	#
William Rathbone	1757	1809	Lancashire, Liverpool.	Merchant.	ODNB.	f 10g
Richard Redfearn			Norfolk, King's Lynn.	MD, Leiden.		n/k
Joseph Reynolds	1768	1859	Shropshire, Ketley.	Industrialist. Half-brother of William Reynolds.	ODNBub.	f 10g
Richard Reynolds	1735	1816	Shropshire, Coalbrookdale.	Industrialist. Ironmaster.	ODNB.	f 10g
William Reynolds	1758	1803	Shropshire, Ketley.	Industrialist.	ODNB.	f 10g
J. Ridgeway jr						f 1g
William Roberts	1766c	1808	Gloucester.	MB. Gloucester General Infirmary. FGS.	'Brockworth Church: Monumental Inscriptions', <i>Gloucestershire Notes and Queries</i> , 1890, 4 : 577-9, p.579.	f 2g
Royal Medical Society			Scotland, Edinburgh.			f 25g
John Rutter	1762c	1838	Lancashire, Liverpool.	MD, Edinburgh.	GM, 1838, 10 : 669.	f 3g
John Butt Salt	1768	1804	Staffordshire, Lichfield and Birmingham.	MD, Edinburgh.	GM, 1804, 74 (1): 281.	f 2g
Robert Salusbury	1756	1817	Monmouthshire, Brecon.	1 st Bt (1795). MP, 1792-1812.	HP.	f 5g
William Sandford	1759	1823	Worcester.	Surgeon. Worcester Infirmary.	MM, 1823, 55 : 118.	f 2g

Name	YoB	YoD	Geographical Location	Notes	Source	#
Miss Saunders						f 1g
Robert Scott						i £20
W. Scott						f 1g
John Seward	1773	1796	Worcester.	MD. Worcester Infirmary. Friend of Southey.	AC.	f 2g
Francis Seymour-Conway, 2 nd Marquis of Hertford (1794)	1743	1822	London.	Government supporter. MP, 1766-1794.	ODNB.	i 20g
Shaftesbury Book Club			Dorset, Shaftesbury.			n/k
Adam Sibbit	1747c	1813	Berwick.	Brewer.	GM, 1813 83 (1): 394.	d ½g
Mrs A. Slaney			Shropshire name.			f 1g
Mrs Smith						f 2g
Thomas Smith	1740c	1805	Warwickshire, Birmingham.	MD, Edinburgh, 1767.	MM, 1805, 19 : 293.	af 2g
Miss Charlotte Sneyd	1754	1822	Staffordshire, Litchfield.	A sister-in-law of R.L. Edgeworth.	Edgar E. MacDonald, <i>The Education of the Heart: The Correspondence of Rachel Mordecai Lazarus and Maria Edgeworth</i> , Chapel Hill, 1977, pp.323-4.	f 5g

Name	YoB	YoD	Geographical Location	Notes	Source	#
Miss Mary Sneyd	1750	1841	Staffordshire, Litchfield.	A sister-in-law of R.L. Edgeworth.	Edgar E. MacDonald, <i>The Education of the Heart: The Correspondence of Rachel Mordecai Lazarus and Maria Edgeworth</i> , Chapel Hill, 1977, pp.323-4.	f 5g
Edward Sneyd	1755	1832	Staffordshire, Litchfield.	A brother-in-law of R.L. Edgeworth.	GM, 1832, 102 (1): 380.	f 5g
Lord Robert Spencer	1747	1831	London.	Whig aristocrat. MP, 1768-1799, 1802-1807, 1817-1820.	HP.	i 20g
George Spencer, 4 th Duke of Marlborough (1758)	1739	1817	London.	FRSL, 1786. Whig aristocrat.	ODNB.	i 20g
Rev Henry Peter Stacy	1760c	1818		FLS.	AO.	f 1g
Joseph Strutt	1765	1844	Derby.	Industrialist.	ODNB.	cf 2g
William Strutt sr	1730	1800	Derby.	Industrialist.	R.S. Fitton and A.P. Wadsworth, <i>The Strutts and the Arkwrights 1758-1830: A Study of the Early Factory System</i> , Manchester, 1958, p.2.	cf 6g
William Strutt jr	1756	1830	Derby.	FRSL, 1817. Industrialist.	ODNB.	cf 2g
John Sykes	1761c	1813	Yorkshire.	Industrialist. Iron merchant	GM, 1813 83 (1): 500.	f 2g
Joseph Sykes	1723c	1805	Yorkshire, Hull.	Industrialist. Iron merchant	GM, 1805, 75 (2): 1175.	f 5g

Name	YoB	YoD	Geographical Location	Notes	Source	#
George Templer	1755?	1819		Government supporter with HEIC and Wedgwood links. MP, 1790-1796.	HP.	f 10g
Thomas Terry	1774c	1816	Warwickshire, Birmingham.	MD, Leiden.	GM, 1816, 86(1) : 382.	af 2g
Rev Andrew Thompson			Berwick.	Dissenter.		d ½g
Richard Thompson						i 20g
William Thomson	1720c	1802	Worcester.	MD, Leiden, 1751. Worcester Infirmary.	ODNBus.	f 2g
Robert John Thornton	1768	1837	London.	MB, Cambridge.	ODNB.	f 10g
James Tobin						f 2g
Rev Joseph Townsend	1739	1816	Wiltshire, Pewsey.	Rector of Pewsey.	AC.	g 2g
Thomas Trotter	1760	1832		MD, Edinburgh. Naval doctor.	ODNB.	f 1g
William Tutin	1766c	1802	Warwickshire, Birmingham.	Industrialist. Manufacturer. Member the Old Meeting House.	Catherine Beale, <i>Memorials of the Old Meeting House and Burial Ground, Birmingham</i> , Birmingham, 1882, engraving 122.	f 2g
Rev Dr Richard Valpy	1754	1836	Berkshire, Reading.	Headmaster.	ODNB.	f 3g

Name	YoB	YoD	Geographical Location	Notes	Source	#
Benjamin Waddington	1749	1828	Monmouthshire, Llanover		ODNBud.	f 10g
William Waite		1828	Berwick, Castle-Law, near Coldstream.		<i>Blackwood's Edinburgh Magazine</i> , 1828, 26 : 809.	d 1g
George Wansey	1757c	1807	Wiltshire, Warminster.	Clothier.	Thomas Phillipps, <i>Monumental Inscriptions in the County of Wilton</i> , np, 1822, South Wilts, p.94.	n/k
Jonathan Wathen	1728c	1808	London.	Surgeon, eye.	GM, 1808, 78 (1): 93.	g 5g
Mrs Anne Watt, <i>née</i> McGrigor	1744c	1832	Warwickshire, Birmingham.	James Watt's second wife.	GM, 1832, 102 (2): 286.	af 3g
James Watt sr	1736	1819	Warwickshire, Birmingham.	FRSL, 1785. FRSE, 1784. Industrialist.	ODNB.	af 10g
James Watt jr	1769	1848	Warwickshire, Birmingham.	FRSL, 1820. Politically radical industrialist.	ODNB.	af 3g
Godfrey Webster	1749	1800	Sussex.	FRSL, 1786. Whig landowner. 4 th Bt (1780). MP, 1786-1790, 1796-1800.	ODNB.	i 25g
Mrs Elizabeth Wedgwood, <i>née</i> Allen	1764	1846	Staffordshire, Etruria.	Wife of Josiah Wedgwood II.	Barbara Wedgwood and Hensleigh Wedgwood, <i>The Wedgwood Circle, 1730-1897: Four Generations of a Family and Their Friends</i> , Don Mills, 1980, p.383.	ef 5g

Name	YoB	YoD	Geographical Location	Notes	Source	#
John Wedgwood	1766	1844	Staffordshire, Etruria.	Industrialist. Potter.	GM, 1844, 21 : 333.	ef 25g
Josiah Wedgwood sr	1730	1795	Staffordshire, Etruria.	FRSL, 1786. Industrialist. Potter.	ODNB.	ef 25g
Josiah Wedgwood jr	1769	1843	Staffordshire, Etruria.	Industrialist. Potter. MP, 1832-1835.	GM, 1843, 20 : 556.	ef 25g
Mrs Sarah Wedgwood, <i>née</i> Wedgwood	1734	1815	Staffordshire, Etruria.	Wife of Josiah Wedgwood I.	ODNBuh.	ef 5g
Miss Susannah Wedgwood (later Darwin)	1765	1817	Staffordshire, Etruria.	Eldest daughter Josiah and Sarah Wedgwood.	ODNBus.	ef 5g
Tom Wedgwood	1771	1805	Staffordshire, Etruria.	Philosopher.	ODNB.	ef 25g
Samuel Whitbread jr	1764	1815	Hertfordshire.	Whig. MP, 1790-1815.	ODNB.	i £50
Charles White	1728	1813	Lancashire, Manchester.	FRSL, 1762. Surgeon.	ODNB.	f 2g
Robert White	1738	1814	Suffolk, Bury St Edmunds.	MD, Aberdeen.	MM, 1814, 37 : 576.	f 2g
John Wilkinson	1728	1808	Wales.	Industrialist. Ironmaster.	ODNB.	f 10g
Williams						f 2g
John Winwood	1733c	1810	Bristol.	Industrialist. Ironmaster.	GM, 1810, 80(2) : 392.	f 3g

Name	YoB	YoD	Geographical Location	Notes	Source	#
Henry Christian Wise	1740c	1805	Warwickshire.	Gentleman.	GM, 1805, 75 (1): 184.	f 5g
William Withering	1741	1799	Warwickshire, Birmingham.	FRSL, 1785. MD, Edinburgh, 1766.	ODNB.	a 5g
James Woolley	1752c	1835	Warwickshire, Birmingham.	Industrialist. Banker and sword manufacturer.	GM, 1835, 4 : 445.	af 2g
George O'Brien Wyndham, 3 rd Earl of Egremont (1763)	1751	1837	Sussex, Petworth.	FRSL, 1797. Whig landowner.	ODNB.	i £50
X.Y.Z.						g 10g
Gustavus Yonge	1723	1804	Shropshire, Shifnal.	Surgeon.	AC.	g 2g
William Yonge	1748c	1827	Shropshire, Shifnal.	Surgeon.	Burial index.	g 2g