

THE EARLY LIFE OF PHILIP CARPENTER

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Philip Carpenter was one of the most important figures in the nineteenth-century lantern industry. His importance is uncontested among lantern scholars, with Mervyn Heard claiming that his Copper-Plate transfer process revolutionised slide production and Laurent Mannoni arguing that Carpenter was the first to perfect the mass production of slides.¹ Both are correct with regards to the significance of Carpenter's manufacturing and retail innovations, but we should be wary of crediting him with industrialising slide production. His transfer technique cannot be considered a form of mass reproduction because the slides were still assembled in a handicraft style and required substantial input from painters. Carpenter occupies a key position in the histories of slide production given by Hermann Hecht and Francisco Javier Frutos, although he receives only a few paragraphs from each.² Hecht and Frutos agree that Carpenter's transfer technique was a key innovation, but place him in a longer history of slide production. Hecht is correct to emphasise that the transfer process was about accuracy of image rather than reproducibility, as it was not until lithography was developed that automatic reproduction of slides became possible.

Carpenter is the subject of articles by John Barnes, Trevor Beattie, David Henry, Herman Bollaert and Lester Smith, which present various facts about his career and the commercial practices of the later Carpenter & Westley.³ Stuart Talbot's article on Carpenter's microscope manufacture offers information from the perspective of his work as a microscope maker, as does R.H. Nuttall's article on the Microcosm exhibition and Alison Morrison-Low's book *Making Scientific Instruments in the Industrial Revolution*.⁴ These authors approach Carpenter as an instrument manufacturer and reveal sources not known to lantern scholars. Barnes and Beattie both note that little is known about Carpenter himself, but I have uncovered new information on his early life. This information is based on new sources that shed light on Carpenter's family background, business premises and the beginnings of his career in Birmingham.

By 1808 Philip Carpenter was working as an optician on Inge Street in Birmingham.⁵ In 1813 he moved to Bath Row.⁶ In 1817 he became sole manufacturer of David Brewster's Kaleidoscope, which proved a considerable success.⁷ By 1819 he was installed at 111 New Street (in addition to the property at Bath Row) and from 1821 he was manufacturing the Improved Phantasmagoria Lantern and Copper-Plate Sliders. I follow Carpenter's own date for the release of the Phantasmagoria Lantern, the first set of Copper-Plate Sliders and original explanatory text. He says in the 1823 edition of *Elements of*



Slipping slide of a Lion, 1826-1833, (Lester Smith Collection)



Slipping slide of a bleeding nun, 1826-1833, (Lester Smith Collection)

Zoology that they were released 'about two years ago' and that he had invented the lantern 'some time before'.⁸ An advertisement in the *Liverpool Mercury* shows that they were, at the latest, on sale by April 1822, along with a greatly expanded range of slides.⁹ His output of slides and equipment increased over the next few years, until his business expanded in 1826 to include 24 Regent Street in London, in addition to the Bath Row and New Street premises in Birmingham.

Until now, almost nothing was known about Carpenter's early life. We know of his sister Mary, proprietor of Carpenter & Westley after Philip's death, and there is reference to his younger sister Sarah in the 1850 census.¹⁰ I have uncovered evidence that reveals two brothers. Dr Lant Carpenter was a Unitarian minister whose children, Mary, William, Russell and Philip, were well known as reformers and scholars. The younger Mary Carpenter was a notable educational and penal reformer. She founded a reformatory school in Bristol and was a key contributor to debates on education and poverty.¹¹ William Benjamin Carpenter was a scientist and physician, Philip Pearsall Carpenter was a Presbyterian minister and naturalist, and Russell Lant Carpenter was biographer to Philip Pearsall, his father Lant and his aunt Mary.¹²

NOTES

1. Mervyn Heard, *Phantasmagoria*, (Hastings: Projection Box) 2006: 197; Laurent Mannoni, *The Great Art of Light and Shadow*, (Exeter: University of Exeter Press) 2000 [1995]: 289-90.
2. Francisco Javier Frutos, 'From Luminous Pictures to Transparent Photographs', *Magic Lantern Gazette* 25.3, 2013: 7; Hermann Hecht, 'Decalomania', *NMLJ* 1.3, 1980: 3.
3. John Barnes, 'Philip Carpenter 1776-1833', *NMLJ* 3.2, 1984; Trevor Beattie, 'Carpenter and Westley: Their History and Artistry', *NMLJ* 11.4, 2013; David Henry, 'Carpenter and Westley', *NMLJ* 3.1, 1984; Herman Bollaert, 'Phantasmagoriae', *NMLJ* 2.3, 1983; Lester Smith, 'The Slipping Slides of Carpenter & Westley', *NMLJ* 11.3, 2012.
4. Stuart Talbot, 'The Perfectionist Projectionist', *Bulletin of the Scientific Instrument Society* 88, 2006; R.H. Nuttall, 'Philip Carpenter and the Microcosm Exhibition', *Microscopy: Journal of the Quekett Microscopical Club* 33.2, 1976; Alison Morrison-Low, *Making Scientific Instruments in the Industrial Revolution*, (Aldershot and Burlington: Ashgate), 2007: 224-5 and 235-8.
5. Samuel Timmins, *The Resources, Products and Industrial History of Birmingham*, (London: Robert Hardwick) 1866: 534; Talbot 2006: 17.
6. Lease of land on Bath Row, 1 May 1813, Birmingham Library, MS 3375/407007.
7. Talbot 2006: 17; David Brewster, *A Treatise on the Kaleidoscope*, (Edinburgh: A. Constable) 1819.
8. Philip Carpenter, Philip, *Elements of zoology*, (London: Rowland Hunter) 1823: 3.
9. *Liverpool Mercury*, 'Carpenter's New Phantasmagoria Lantern and Copper Plate Sliders', 12 April 1822: 327.
10. Beattie 2013: 8.
11. Jo Manton, *Mary Carpenter and the Children of the Streets*, (London: Heinemann) 1976.
12. 'Sketch of Dr. W.B. Carpenter', *The Popular Science Monthly*, Feb 1886: 538-44; W.H. Dall, 'Dr Philip Pearsall Carpenter', *American Naturalist* 11.8, 1877: 504-505; Philip Pearsall Carpenter, *Memoirs of the life and work of Philip Pearsall Carpenter*, (London: Kegan Paul) 1880; Lant Carpenter, *Life of the Rev. Lant Carpenter*, (Bristol: Philip and Evans) 1842; Russell Lant Carpenter, *In memory of Mary Carpenter*, (Bristol: Arrowsmith) 1878.



Lant Carpenter, (National Portrait Gallery, London)



William Benjamin Carpenter, (National Portrait Gallery, London)

Philip Carpenter's will, held in the National Archives, identifies his two sisters and his brother Lant.¹³ This connection is further corroborated by Lant's memoirs, which contain scattered references to an older brother without mentioning him by name. Lant describes his brother's death in 1833, the correct year of Philip's death, as shown by the addendum to his will and the Worship Street Burial Register, and confirms that Philip was the oldest brother.¹⁴ He gives details of some astronomy lectures he gave around 1832, 'illustrated with some beautiful magic-lantern slides, many of them movable, manufactured by his brother in London.'¹⁵ This conclusively shows Philip and Lant's fraternal relationship.

Lant says that he was the third son, but I have found few references to his second brother.¹⁶ Lant once names him as Mr T.H. Carpenter, but no other information is given.¹⁷ He is not mentioned in Lant's will, nor in Philip's, which suggests that he was dead by 1833. This may have been Thomas Carpenter, who was a compass and steel toy maker on New Canal Street in the 1820s, and who was involved in the Artisans' Library and the Brotherly Society of Birmingham, which accords with Lant's reference to his brother setting up a library.¹⁸

Lant's memoirs can be used to establish details of his brother's early life. Philip Carpenter was born at Kidderminster on 18 November 1776, four years before Lant and eleven years before his sister Mary. His parents were George Carpenter, a carpet manufacturer, and Mary Carpenter (née Hooke), daughter of Christopher Hooke, mayor of Coventry. The Carpenters were Unitarians and had farmed a small estate near Bromsgrove for generations. Lant says that his father 'proved unfortunate in business' and that this led to him leaving Kidderminster.¹⁹ It is not clear if this means bankruptcy, but as Lant was subsequently taken in and educated by a relative of his mother, it seems that this was serious enough to occasion a change in circumstances. Lant later mentions 'the embarrassed circumstances of his family, owing to depression in trade', which would suggest that his father's business problems were significant.²⁰

References elsewhere point to the family living in Birmingham, although it is not clear when they arrived there. Lant recalls anxiously awaiting a family letter from Birmingham around 1801, and says

that his family narrowly escaped being victims of rioting in Birmingham.²¹ These would have been the 1791 Priestley riots, where mobs targeted the famous Unitarian Joseph Priestley and other religious dissenters.²² This suggests that the family was present in Birmingham from at least the 1790s.

The Carpenters' Unitarianism would have been an important influence on their careers as scientists, artisans and reformers and can provide context to the early stages of Philip's career. In the late eighteenth and early nineteenth century Birmingham was a centre of nonconformism. It did not have a municipal charter until 1834, which meant that Birmingham was not subject to the Clarendon Code, which restricted the settlement and freedom of religious dissenters.²³ This meant that the family settled among a sizeable community of Unitarians, which could have supported the early careers of the young Carpenters. Lant suggests that Thomas and Philip were involved in local philanthropic and mechanics' societies in the 1790s, which were heavily nonconformist.

It is not clear how Philip trained as an optician. He states in *Companion to the Microcosm* that he had worked as a manufacturing optician in Birmingham for thirty years.²⁴ Dating back from his 1826 move to London, this means he would have started work around 1796. It is possible that he was apprenticed to William Carpenter, who is listed under the same Inge Street address as Philip in 1808.²⁵ Morrison-Low says that Philip claimed to have been trained in London, but provides no source for this.²⁶ Lant notes that Thomas opened an Artisans' Library (likely the library on Bristol Street) a little before 1796; so it may be that Philip was already part of local engineers' and artisans' groups.²⁷ Thomas was in his late teens in 1796 and it is reasonable to expect that other members of the family would have been involved in similar undertakings. The library was conceived as a way of '[adding] to the sources of improvement possessed by the labouring classes', and later merged with the Mechanics' Library.²⁸ It is clear that Thomas was involved in the philanthropic and mechanical societies of the 1790s. It seems probable that his older brother Philip was also part of this world.



Artisan's Library, (Reproduced by permission of the Library of Birmingham)

13. Will of Philip Carpenter, 18 May 1833, National Archives, PROB 11/1815/261.

14. L. Carpenter 1843: 407; Will of Reverend Lant Carpenter, 1 June 1840, National Archives, PROB 11/1929/2; Burial Register for Worship Street, London, 1787-1837, National Archives, RG 4/4515.

15. L. Carpenter 1842: 363.

16. L. Carpenter 1842: 7.

17. L. Carpenter 1842: 18.

18. Gloria Clifton, *Directory of British Scientific Instrument Makers*, (London: Zwemmer) 1995: 49; E.G.R. Taylor, *The Mathematical Practitioners of Hanoverian England*, (London: Cambridge University Press) 1966: 444; William Matthews, *An Historical Sketch of the Origins, Progress and Present State of Gas-Lighting*, (London: Rowland Hunter) 1827: xxii-xxiii; L. Carpenter 1842: 18; In the absence of further evidence I will refer to the second brother as Thomas, who seems the most likely person on record. I do accept, however, that this is by no means conclusive.

19. L. Carpenter 1842: 9.

20. L. Carpenter 1842: 51.

21. L. Carpenter 1842: 81, 38.

22. Chris Upton, *A History of Birmingham*, (Stroud: Phillimore) 1993: 50-7; Michael R. Watts, *The Dissenters*, (Oxford: Clarendon Press) 1978: 482-90.

23. Eric Hopkins *Birmingham: The First Manufacturing Town in the World*, (London: Weidenfeld and Nicolson) 1989: 4, 136; Stuart Andrews, *Unitarian Radicalism: Political Rhetoric*, (Basingstoke: Palgrave Macmillan) 2003: 1-10.

24. Philip Carpenter, *A Companion to the Microcosm*, (London: W. Glindon) 1827; Nuttall 1976: 62.

25. Clifton 1995: 49; This is not one of Philip's brothers. No further information is available about William Carpenter, so it is difficult to speculate further.

26. Morrison-Low 2007: 237.

27. L. Carpenter 1842: 18.

28. *ibid.*

Philip's father was not an apparatus maker, yet it is not surprising that his son should enter a scientific discipline given the Unitarians' commitment to rational enquiry. The Birmingham Unitarians possessed a keen entrepreneurial spirit. Peter Jones examines debates on the entrepreneurial impulse present within the 'rational Christianity' of Birmingham dissenters, but stresses that dissenters were not uniquely industrious among the population.²⁹ Dissenters were drawn to Birmingham by its relative freedom of worship, but they were also drawn by the commercial opportunity of its expanding industries. Carpenter's Unitarianism helps to explain why instrument manufacture was an attractive profession. The existence of a supportive Unitarian community, and active mechanical and artisans' societies, may also suggest clues to his early career, and how he trained and set up a workshop in Inge Street.

Following the riots of 1791, life in Birmingham became more difficult for nonconformists. The Anglican population subjected the dissenters to intimidation and economic boycott, the result of a mixture of patriotism, economic hardship and class antagonism towards the wealthy dissenting community.³⁰ This would have been a difficult time to start a business, but there is no evidence to show how Carpenter negotiated this climate. This hostility dissipated over first decade of the nineteenth century before the Unitarians were fully emancipated in 1813, following the removal of legal penalties for denying the trinity.³¹ This meant that Unitarians could legally settle anywhere, preach, publish and publicise their beliefs. Carpenter was already an optician by 1813, but it is doubtful that he would have been able to settle in Westminster without the reform bill.

Clues to the success of Carpenter's early business can be found in the records of solicitors Smythe, Etches and Co, which dealt with his purchase of the leasehold for Bath Row in May 1813. These show that he acquired 1041 square feet of land, to be held for 107 years at an annual cost of £13 3d. Carpenter would have also needed money for building on the land. Given his father's earlier financial difficulties, it is unlikely that his family could have financed such a project alone. If he did fund this without financial assistance, then his business at Inge Street must have been fairly successful by 1813. A second document shows that he mortgaged the Bath Row property for £500 in 1816.³² By then the estate consisted of a dwelling house, manufactory building and outbuildings.

By 1817 Carpenter had established a large trade in lenses, and his work was, according to Samuel Timmins, of sufficient quality to supply Peter Dolland, the great London optician, with telescopes.³³ If this is true, his lenses must have been of exceptional quality, given the Dollands' reputation. Talbot states that Carpenter had become the leading supplier of achromatic lenses by 1812, although it is not clear on what evidence he is basing this claim.³⁴ The figures shown by the solicitors' records and his reputation as supplier to Dolland may explain why Brewster selected Carpenter as manufacturer of the kaleidoscope. According to Talbot the kaleidoscope proved a great success: 'these became a huge money-spinner, as over two



Kaleidoscope and storage tube, 1817-1818, (National Media Museum)

hundred thousand kaleidoscopes were sold in Paris and London during three months.³⁵ The instrument became so successful that Brewster had to withdraw Carpenter's rights as sole maker in 1818 because he could not keep up with demand.



Detail of each end of the kaleidoscope, showing maker's marks stamped in brass

The Bath Row property was retained after Philip's move to New Street around 1819. New Street may have acted as a shop, as the 1816 mortgage does not mention a shop on Bath Row. It is possible that before this date part of the house and manufactory was used for retail, or that Carpenter acted primarily as a manufacturer for other opticians before opening his own shop on New Street. There is evidence to show that Carpenter produced goods for others, so it is possible that this is the case. An advert in the *Liverpool Mercury* shows that he supplied lanterns and slides to John Bywater of Liverpool.³⁶ An advert in the *Bristol Journal* says that he was supplying kaleidoscopes to Edward Bird & Son, watchmakers of Bristol.³⁷ An advert in *Elements of Zoology* says that Carpenter slides could be obtained from Joseph Cox and most opticians in London.³⁸

Juror's lists for 1817-23 show that Carpenter was living in the dwelling house on Bath Row while running the shop on New Street.³⁹

29. Peter M. Jones, *Industrial Enlightenment*, (Manchester: Manchester University Press) 2009: 174-88.

30. R.B. Rose, 'The Priestley Riots of 1791', *Past and Present* 18, 1960; Jones 2009: 18-200; Watts 1978: 482-90.

31. Watts 1978: 487-90.

32. Indenture of mortgage, 5 December 1816, Birmingham Library, MS 3375/407009.

33. Timmins 1866: 534.

34. Talbot 2006: 17.

35. *ibid.*

36. *Liverpool Mercury*, 12 April 1822: 327.

37. *Bristol Journal*, 5 September 1818.

38. Barnes 1984: 9.

39. Jury books for Warwickshire County, 1772-1824, Warwickshire County Records Office, QS/76/3.



New Street, Birmingham, from *A New and Compendious History of the County of Warwick* by William Smith, 1830, (copy from British Library)

I have found no evidence to suggest that he ever lived on New Street, nor that he ever had a shop on Bath Row. *Wrightson's New Triennial Directory* for 1823 lists his business as both Bath Row and 111 New Street, so it is most likely that he split his manufacture and retail operation across these two sites.⁴⁰ A trade card in the Library of Birmingham advertises the New Street shop with a note that Carpenter had a manufactory on Bath Row and, similarly, the *Birmingham Weekly Post* distinguishes between Carpenter's Bath Row manufactory and his New Street shop.⁴¹ The *Post* says that the New Street property was only one storey high, so it is unlikely that this was ever used as a dwelling or workshop.⁴² It would have made sense to divide business operations over the two locations as New Street was a significantly more active retail area with many more businesses and a greater passing trade than Bath Row.

Beattie argues that it was probably on the strength of the kaleidoscope that Carpenter opened the New Street shop.⁴³ The *Commercial Directory* and *Wrightson's New Triennial Directory* for 1818 show the other businesses located on Bath Row and New Street at the time of Carpenter's move.⁴⁴ Both directories offer scant information on Bath Row, suggesting a lack of major retail businesses. They do show some manufacturers working on the street: Edward Armfield and Son (button makers) and John Bramich (coach harness maker) in the *Commercial Directory*; William Barrs (malter), John Bramich (plater) and Samuel Hodgkinson (engineer) in *Wrightson's Directory*.

New Street is far better documented, with an array of businesses operating around Carpenter's shop. The street had not yet assumed the single-use commercial character of a modern high street, so there are manufacturers alongside merchants and other businesses. Of particular note are the ten listed attorneys, ten merchants, seven metalworkers and numerous manufacturers and sellers of clothes, fabric or fashion items.⁴⁵ It is interesting to consider the street's distribution of Birmingham's major industries. There are no gun makers on New Street at all, seven metal workers and nine manufacturers of small goods. Three of these are cutlers (all also metalworkers), three are jewellers (one also a cutler), one is a pin maker, one a needle maker, one a nail manufacturer and one a button manufacturer. Of these industries, the majority tend to be manufactures of fashionable commodities. Two of the jewellers are also silversmiths, while John Jakes the button maker is listed as dealing in gilt, plated, dipped and silver buttons. There are two toy dealers, three goods carriers and various merchants and grocers, which indicate that the street is both a site of manufacture and retail. These businesses, plus the various professional occupations listed (attorneys, surgeons, auctioneers, insurers, physicians, surveyors, etc), indicate that the street was wealthy and prestigious. W.R. Eginton, a painter on glass, and Mary Heape, a miniature painter, also worked on the street, showing that there were at least two local precedents in image manufacture. That Carpenter's business model, which centred on selling desirable commercial packages, should



Sea cave, 1826-1833, (Lester Smith Collection) (slide enhanced to show manufacturer's stamp)



Two figures in front of a castle, 1826-1833, (Lester Smith Collection)

prosper on New Street is no surprise. The commercial character of the street explains the way he developed his business and why he should choose to move to Regent Street, and not Fleet Street, the established site of the scientific instrument trade.

That Carpenter focused on consumer commodities rather than scientific equipment was appropriate in the context of the fashionable trade around New Street, and in the context of Birmingham manufacture more broadly, where successful toy and fabric trades were driven by demand for fashions in buckles, buttons and lace. Brewster's decision to use Carpenter to manufacture the kaleidoscope for a large market suggests that Carpenter had some degree of experience in this respect (perhaps selling spectacles).

Carpenter introduced his Improved Phantasmagoria Lantern and Copper-Plate Sliders in 1821, before moving to Regent Street in 1826. Much more is known about this period of his life, which provides the subject of Barnes' and Talbot's articles. I plan to make a detailed study of his business decisions in this period myself, addressing his Copper-Plate Sliders, Phantasmagoria Lantern and Microcosm exhibition. The information provided here reveals many interesting things about Carpenter's early life, his family, religious background and business premises, and should help to provide a more detailed picture of this important figure in the early nineteenth-century lantern trade. There is much more to discuss about Carpenter's manufacturing methods and his approach to retail and advertising. My research in these areas remains ongoing, and I hope to have more to report in the future.

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40. *Wrightson's New Triennial Directory of Birmingham*, (Birmingham: R. Wrightson) 1823: 27.

41. Trade card reprinted in Morrison-Low 2007: 237; *Birmingham Weekly Post*, 'The Manufacture of Magic Lanterns in Birmingham', 5 January 1895.

42. *Birmingham Weekly Post*, 'Magic Lanterns and Slides', 16 March 1895.

43. Beattie 2013: 6.

44. *Commercial Directory for 1818-19-20*, (Manchester: James Piggot) 1818; *Wrightson's New Triennial Directory of Birmingham*, (Birmingham: R. Wrightson) 1818.

45. *Commercial Directory* 1818.