

Susannah Rosina Crowther (1772-1852)

Wife, Mother, Iron Founder & Engine Builder

Mike Greatbatch *Lancaster University*

Susannah Rosina, the daughter of Alexander Stewart, a senior Scottish lawyer (and member of the prestigious Writers to the Signet), married the engineer Phineas Crowther at Edinburgh on 9 November 1791. They had six children and lived at Sandgate New Road in Newcastle upon Tyne where, on 3 June 1818 Phineas died, aged fifty-eight years. Phineas Crowther is rightly recognized as one of the pioneers of steam engine design but it was his widow Susannah that sustained the engine making business for almost thirty years following his death. When Eneas Mackenzie acknowledged her subscription towards his *Historical Account of Newcastle* in 1827, he recorded her role as an iron founder ('Crowther, Mrs. founder, Ouseburn') and when, in 1841, Susannah herself recorded her profession for the census returns she chose that of 'Engine Builder'.¹ The foundry at Ouseburn Bridge was not sold until after her death in September 1852 and her life provides a rare example of a lady who eschewed the accepted role of female gentility and instead became a successful businesswoman in her own right.

Keywords: Susannah Crowther; Iron Founder; Engine Builder, Ouseburn; Newcastle upon Tyne

Phineas Crowther, Engineer

Often described as hailing from Newcastle, Phineas Crowther was in fact born in Leeds, the son of Isaac Crowther, on 15 April 1760, and baptized at St Peters, Leeds on 31 May 1760.² The record of his marriage in 1791 describes Phineas as an 'engineer at Gateshead' and some, if not most, of his work at that time appears to have been carried out in partnership with John Whinfield whose foundry was in Pipewellgate.³ There, in April 1803, 'a powerful new Patent Engine erected by Crowther and Whinfield' was in operation.⁴ The previous summer a similar patent steam engine had been installed at Whinfield's iron and brass foundry at Skinnerburn, in Newcastle. This was powerful enough to power the machinery in both a boring and turning mill and a nearby corn mill, and replaced an existing engine whose parts were

¹ Eneas Mackenzie, *Descriptive and Historical Account of the Town and County of Newcastle upon Tyne*, Volume 1 (Newcastle: Mackenzie & Dent, 1827), p. vi; 1841 Census, Northumberland All Saints, Enumeration District 14, National Archives 107/845/7.

² I am grateful to Alison Johnson of the North of England Institute of Mining and Mechanical Engineers (NEIMME) for supplying this information together with birth and baptism details of most of Phineas's children.

³ Crowther, Phineas, 29 November 1791, in Old Parish Registers, Marriages 685/1 520 105 (Edinburgh), p. 105. Accessed via <https://www.scotlandspeople.gov.uk>. I am grateful to Michael Hannon of Fenham for supplying a copy of the original register.

⁴ Advert for 'Four Twelfth Shares (Iron and Brass Foundries) in *Newcastle Courant* 30 April 1803, p. 4. The advert relates to both Skinnerburn and Pipewellgate but the wording suggests that the engine was at Pipewellgate.

offered for sale in September 1802.⁵ Crowther and Whinfield's partnership at Skinnerburn was certainly established by 1801 and lasted until 16 April 1808, by which date they traded as civil engineers under the firm of Phineas Crowther, or as Holden's *Triennial Directory* listed them, 'Cowther and Co., engineers' at Skinney Bark, Newcastle.⁶

It was probably at Skinnerburn that Phineas patented his famous steam engine design in 1800 (Patent No. 2378) that dispensed with the beam by placing the crankshaft directly above the piston and guiding the parallel motion by means of a fly-wheel. A drawing of this innovative design was included in Elijah Galloway's *History and Progress of the Steam Engine* (published 1836), where he states that 'Mr Crowther constructed several good engines on this plan, which were found to succeed very well'.⁷ In December of 1800 Phineas advertised for 'several good hands, as smiths, firemen, and benchmen' together with other skilled workers including engine and mill-wrights; his advert in the *Newcastle Courant* stipulated that for the latter, 'men that have been used to engine-work, and putting together steam-engines, will be preferred'.⁸ Not long after, the Reverend John Baillie observed that at Skinnerburn a large foundry for cast-iron, the property of Messrs Whinfield and Co., was engaged 'principally for supplying the collieries with machines, for carrying off the water from the seams of coal, and for other important purposes in this principal branch of commerce'.⁹

The market for this type of engine was the Durham and Northumberland coalfields, and such was the success of Crowther's patent that engines based on this design were still being built by the firm of Thomas Murray of Chester-le-Street when they closed in 1874, whilst one built by J. and G. Joicey of Forth Bank Foundry Newcastle in 1887 was still in use as recently as the 1950s.¹⁰ A Crowther designed vertical winding engine dating from 1855 is today preserved at Beamish Museum.¹¹ As early as 1809, the illustrator Thomas Bewick was selling prints of an etching he had made of the

⁵ *Tyne Mercury*, 7 and 21 September, and 5 October 1802, p. 1 (all).

⁶ J. Mitchell, *Directory of Newcastle and Gateshead for 1801* (Newcastle: Mitchell, 1801), pp. 41-42. This directory was published in February 1801. William Holden, *Triennial Dictionary for 1805, 1806, 1807* (London: 1805), p. 228. See *The London Gazette*, April 23-26 1808, p. 574, for the dissolution of Crowther's partnership with Whinfield at Skinnerburn.

⁷ Elijah Galloway, *History and Progress of the Steam Engine* (London: Thomas Kelly, 1836), pp. 128-129; accessed July 2020 via https://books.google.co.uk/books/about/History_and_Progress_of_the_Steam_Engine.html?id=Qq5KAAAAMAAJ&redir_esc=y

⁸ *Newcastle Courant*, 13 December 1800, p. 4.

⁹ J. Baillie, *An Impartial History of the Town and County of Newcastle upon Tyne* (Newcastle: Vint & Anderson, 1801), p. 506.

¹⁰ G. M. Watkins, 'The Vertical Winding Engines of Durham', *Transactions of the Newcomen Society*, volume 29, 1953, Issue 1, p. 205 (Taylor & Francis Online Publishing, 2014), accessed July 2020 via <https://www.tandfonline.com/doi/abs/10.1179/tns.1953.017?journalCode=yhet19>

¹¹ Its operation can be viewed via YouTube; accessed July 2020. <https://www.youtube.com/watch?v=fjmOwn-N6b8>

heading to the King's Letters Patent granted to Phineas, a copy of which is today preserved in the British Museum.¹²

In addition to his patent vertical engine, Crowther also secured lasting fame for the locomotive engine that he built in 1814 at a cost of £483 to designs by William and Edward Chapman of Durham for use on the Lambton colliery wagon-way between Bourn Moor and Peshaw. This six-ton engine was mounted on eight wheels in two groups of four, using bogies to reduce the wheel loadings and thereby the wear on the rails.¹³ Trials were first carried out on 21 December 1814, when the engine drew eighteen loaded coal wagons (weight about 54 tons) up a gentle ascent at a rate of almost four miles an hour.¹⁴

The earliest association of Crowther with the Ouseburn is an advert in September 1798 for 'several smiths, real good hands at the fire and vice' in which applicants are invited to apply to Phineas at Ouseburn in Newcastle.¹⁵ Given that Phineas didn't secure premises at the Ouseburn until 1803, this advert may have been placed on behalf of James Glynn who, in 1799, secured a 21-year lease on virtually all the land adjoining the west side of the Ouseburn between Ouseburn Bridge and the Glasshouse Bridge.¹⁶ Glynn was the son of a Morpeth freeholder and was closely associated with the foundry at Skinnerburn from at least 1791 until his departure for Ouseburn in 1799.¹⁷

The Ouseburn flows into the Tyne to the east of Newcastle and the ability of keels to navigate its lower reaches had transformed the district into what John Baillie described in 1801 as having 'the appearance of a large town'.¹⁸ As Newcastle's principal industrial suburb, the Ouseburn both amazed and appalled contemporary observers throughout the nineteenth century, and some impression of its character can be gained from the observation of the young doctor Thomas Giordani Wright who, in the 1820s, recorded the following impression: 'Here then we go a sort of jog trot to Ouseburn a sort of outskirts Village where your every faculty is put in instant requisition. After crossing the bridge your nose is assailed by a combination of all the odours that can render smell disagreeable, and till your taste shares the sensation. A steam mill and iron foundry vapour on the one hand and lime kilns on the other, with a tripe shop in the van and a general receptacle for manure at the rear, all lend their aid toward this delectable perfume. Nor do your ears enjoy a greater repose; the

¹² https://www.britishmuseum.org/collection/object/P_2017-7045-1; accessed August 2020.

¹³ W. R. Rennison, 'William Chapman', in *A Biographical Dictionary of Civil Engineers in Great Britain and Ireland*, Volume 1 (London: Thomas Telford, 2002), p.127.

¹⁴ *Perthshire Courier*, 5 January 1815, p. 3.

¹⁵ *Newcastle Courant*, 8 September 1798, p. 4.

¹⁶ For James Glynn at Ouseburn see Calendar of the Common Council Book (Newcastle), meeting held 11 November 1799, Tyne and Wear Archives and Museums (TWAM) 589/17, f.2.

¹⁷ For Glynn's father Joseph, at Morpeth, see *Newcastle Courant*, 4 July 1789, p. 3 (new-built dwelling house to let), and for Glynn at the Skinnerburn Foundry see the *Newcastle Courant*, 17 September 1791, p.4, and 25 February 1792, p.1

¹⁸ Baillie, *An Impartial History*, p. 145.

combined powers of a dozen or two of hammers upon the melodious tones of a steam engine boilers from three forges in close contiguity afford a delicious and harmonious treat¹⁹

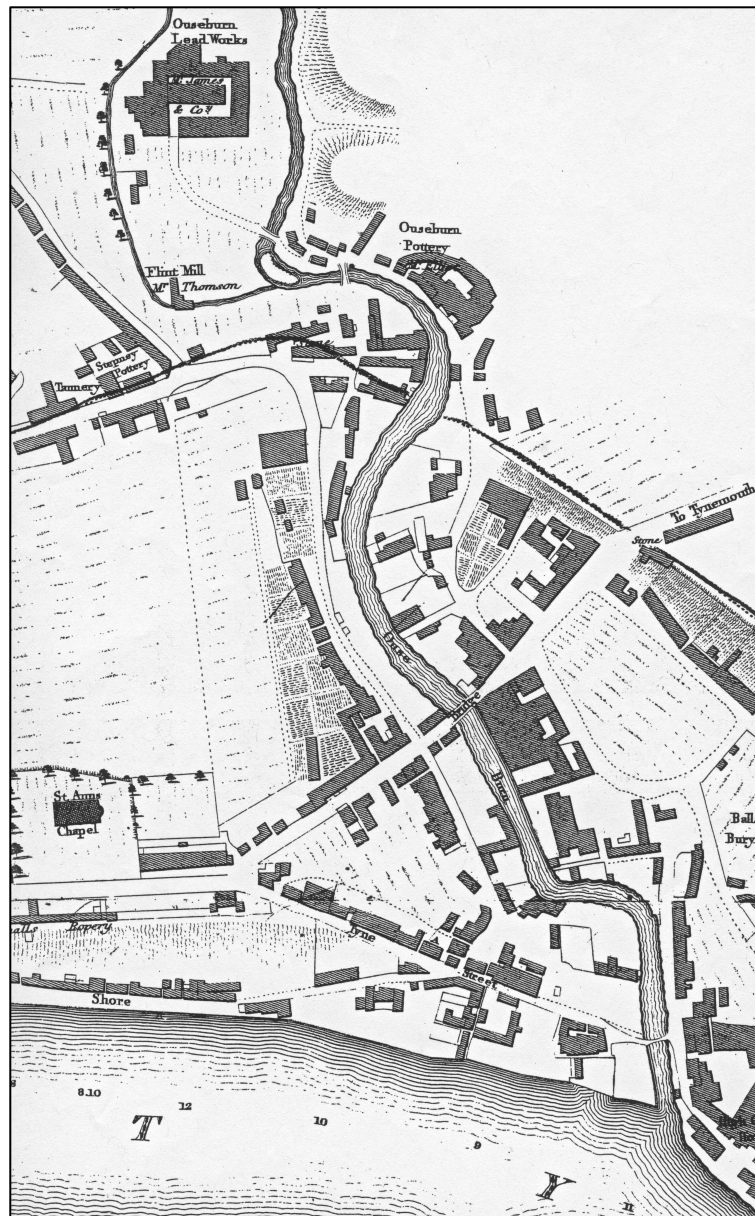


Figure 1. The Ouseburn area as depicted in John Wood's plan of Newcastle and Gateshead, 1827. Reproduced from Newcastle City Library, Local Studies Collection.

It was in this heady industrial firmament that Phineas established a foundry and engine works at Ouseburn Bridge in 1803 on a site immediately east of the bridge, on the north side of the Shields turnpike. The site had many advantages, being well served by keels navigating the Ouseburn with the tide, and good road access for horse-drawn wagons. It was located in Newcastle's rapidly developing industrial suburb where older firms were converting from water power to steam power (flint and flour mills) and new industries based on lead paint, flax spinning, earthenware, colour and oil manufacture were setting-up and in need of the very latest in steam powered

¹⁹ Thomas Giordani Wright, *Diary of a Doctor*, edited by Alastair Johnson (Newcastle: Libraries & Information Service, 1998), p. 23.

machinery. Furthermore, the site acquired by Phineas had previously been occupied (since 1795) by the engine builder Humphrey Jeffreys, and contained buildings and machinery in situ that gave Phineas a head start in the engine making business. This included a boring mill and a stationary steam engine, in addition to a steam powered corn mill.²⁰

Crowther and Morris, Iron-founders

At the time of her husband's death in 1818, Susannah Crowther was in her mid-forties with five children; Sabina aged about seven years, John (10), Phineas (12), Elizabeth (17), and Margaret who in 1836 married William Pearson (a druggist) at All Saints Church. Margaret died at Egremont, near Liverpool, in January 1845 but other than this little else about her can be confirmed.²¹ Another daughter called Elizabeth was born in March 1794 and presumably died before her namesake was born in 1801.

As Phineas's widow, and after a marriage of almost twenty years, it would be surprising if Susannah had failed to acquire a good grounding in the business of iron founding. Irrespective of her commitments as a mother, Sandgate New Road was within walking distance of the foundry and engine works at Ouseburn Bridge, so the practical workings of the business shouldn't have been a mystery to her; quite the opposite in fact. Widows often inherited their late husband's business, especially if there were family members or business associates that she could trust to oversee the transition between closure of her husband's affairs and the establishment of new partnerships to continue the business. In Susannah's case, the obvious candidate as trusted business associate was James Glynn.

Glynn, together with a Gateshead raff merchant called Rewcastle and a Newcastle attorney called Chater, are the gentlemen who advertised the business premises at Ouseburn shortly after Crowther's death, with James Glynn on hand to show the premises to prospective takers. Adverts detailing the premises, to be let, appeared in newspapers published in Newcastle (23 June), Durham (4 July), and Leeds (6 July 1818) and all included the information that the business was in rude health, the premises having 'a blowing cylinder attached to a foundry *at full work*, which has a good air furnace', and there was a 12-horsepower engine working a boring mill, 'with turning apparatus of every description'. Furthermore, 'nearly the whole of the materials for a 30-horse engine' were available for sale.²² The following summer the materials for a double power 16-horse steam engine for pumping water, together with a barrel, a windbore, and some pumps were also advertised for sale, though by then the premises were under the management of Messrs Crowther and Morris.²³

²⁰ Details of Jeffrey's acquisition of the leasehold are recorded in TWAM 589/16, f.313, meeting held 18 June 1795. His sale of the premises, including details of his colliery winding engines is in the *Newcastle Courant*, 2 April 1803, p.1.

²¹ *Newcastle Journal*, 20 February 1836, p. 3 and *Durham Chronicle*, 17 January 1845, p. 3 for Margaret's marriage and death, wherein she is simply referred to as the third daughter of the late Phineas Crowther, civil engineer.

²² *Tyne Mercury*, 23 June 1818, p. 1, *Durham County Advertiser*, 4 July 1818, p. 1, and *Leeds Intelligencer*, 6 July 1818, p. 1; my italics.

²³ *Newcastle Courant*, 10 and 17 July 1819, p. 3 (both). This sounds like a fire-engine apparatus, an essential piece of kit at a foundry where wooden buildings and furnaces stood in close proximity.

The few records that we have of Stephen Robinson Morris tell us little except that he lived close to the foundry at the Folly House, the property of John Dryden who also owned the adjacent Phoenix Pottery. When advertised for sale in 1825, Stephen Morris is identified as the occupant together with his under-tenants as the Folly House was by then two dwellings under one roof.²⁴ The dwelling that Morris occupied is sometimes referred to as Ouseburn Cottage, and on contemporary maps the grounds are shown as formal gardens.²⁵

Morris's status as an iron founder appears to derive wholly from his partnership with Susannah Crowther, suggesting that his contribution may well have been financial rather than expertise in the iron trade. The premises were obviously not let to Morris (or anyone else), as Susannah appears to have retained a controlling influence. When Morris's credit ran out in late 1827, the claims against his estate were handled separately from any charged to the firm of Crowther and Morris, the latter being dealt with by Susannah's attorney Thomas Chater.²⁶ The partnership with Morris was dissolved on 6 December 1827, and the business henceforth carried on by Susannah.²⁷

It was during her partnership with Morris that Susannah took measures to find a tenant for the corn mill that Phineas had acquired from Jeffreys in 1803. When advertised to let in summer 1819 and again in March 1824, it was described as steam powered with three pairs of stones, a dressing cylinder and shelling mill, with 'a well accustomed retail shop attached to the premises'.²⁸ The mill stood in the south-east corner of Crowther's site, hard-up against the Shields turnpike rising up the bank from the east end of Ouseburn Bridge. A plan of the area dating from c1830 labels these buildings as a Flour Mill, whilst the large yard extending northwards along the Ouseburn is labeled 'Foundry Crowther'.²⁹

Advertised again to let, in October 1826, the mill finally appears to have been occupied by John Etherington as it was his stock of 200 bolls of wheat and a large quantity of flour that were destroyed by fire on the night of 1 April 1828. This fire originated with timber attached to the engine of the mill, 'and the whole of the building being of wood, such was the rapidity of the flames, that by 11 o'clock all was a mass of burning ruins'. Because of its situation at the foot of the bank rising up to Byker Bar, this was a two-storey building with the lower floor occupied by part of the iron foundry. It was reported that Anthony Clapham's soap works on the opposite (south) side of the Shields turnpike was in danger of catching fire, 'but was saved by the exertions of persons on the roof with buckets of water, and the playing of the

²⁴ *Newcastle Courant*, 8 January 1825, p. 1.

²⁵ William Parson and William White, *History, Directory, and Gazetteer of Durham and Northumberland*, Volume 1 (Leeds: Baines and Son, 1827), p. 59.

²⁶ For Morris's insolvency see *Newcastle Courant*, 22 December 1827, p. 4. Thomas Chater, attorney, 36 Pilgrim Street; Parson and White (1827), p. 18.

²⁷ *Tyne Mercury*, 1 January 1828, p. 3, and *Newcastle Courant*, 12 January 1828, p. 1.

²⁸ *Newcastle Courant*, 15-29 May, p. 1 (p. 3 for 22 May) and 5-12 June 1819, p. 3 and 13 March 1824, p. 3.

²⁹ Plan of Proposed Waggonway from Jesmond to the River Tyne, NEIMME, Watson 28/23. This plan also labels Scott & Co.'s raff yard adjoining Crowther on the north side, a business not recorded before 1829 or after 1831.

engines'. The flour mill and the adjoining retail shop were both totally destroyed, and whilst Etherington was comprehensively insured the stock 'of the poor man who rented the shop' was not.³⁰

13, Ridley Villas

Despite Morris's insolvency and the subsequent dissolution of the partnership, by 1827 Susannah Crowther was living at Ridley Villas, described by Mackenzie in that year as 'neat, well-built houses' that had 'lately been erected. Each house has a garden in front, with necessary offices and garden-ground behind'.³¹ It is quite possible that Susannah was the first occupant of house number 13 because Thomas Oliver's survey shows the terrace consisting of just seventeen houses in 1830; see Figure 2.³²

An advert for one of these houses in February 1831 described the property as consisting of 'back and front parlour and kitchen on the ground floor, four bed rooms, garret, cellar, with a small garden in front, as well as the back part of the house, with an excellent pump'.³³ In the same year, Thomas Oliver described the ground at the back of these houses as 'good kitchen gardens'.³⁴ With a good supply of water and fresh vegetables, open fields to the north and east, and a plantation directly to the south (at least until the latter was developed for more houses in summer 1837), these properties were amongst Newcastle's most desirable residences, particularly amongst the town's upwardly mobile manufacturing families. Susannah's neighbours at Ridley Villas in 1827 included Ralph Gibson (a customs warehouse keeper), George Beldon (book-keeper), James Lunn (insurance broker), a retired draper called Hugh Spencer, simply referred to as 'gentleman' in contemporary directories, and John Beckington, the owner of a large steam powered flour mill at the Ouseburn.³⁵

³⁰ *Newcastle Courant*, 5 April 1828, p. 4. John Etherington continued in business as a miller, selling two pairs of stones at his steam mill in March 1829 and in March 1833 secured a 21-year lease on his premises at Ouseburn from Newcastle Corporation; *Newcastle Courant*, 7 March 1829, p. 1, and 'Rent Roll of Property belonging to the Corporation of Newcastle upon Tyne, October 1836', p. 7. Newcastle Corporation Minutes 1836-43, Library Collection of the Society of Antiquaries of Newcastle upon Tyne (SANT), Acc.5.

³¹ Mackenzie, *Descriptive and Historical Account*, Volume 1, p. 188.

³² Thomas Oliver, *Plan of the Town & County of Newcastle upon Tyne and the Borough of Gateshead* (Newcastle: Thomas Oliver, 1830).

³³ 'A Convenient Dwelling House To be Let', *Newcastle Courant*, 5 February 1831, p. 4.

³⁴ Thomas Oliver, *A New Picture of Newcastle upon Tyne, or an Historical and Descriptive View*, (Newcastle: Thomas Oliver, 1831), p. 105.

³⁵ All are listed in Parson and White (1827), including Mrs Susan Crowther on page 22. Ridley Villas was built on land owned by Sir Matthew White Ridley and the five owners (leaseholders) in 1831 (one of whom was Susannah's landlord) included the shipbuilder Robert Gothard as well as Ralph Gibson and John Beckington; Thomas Oliver, *Reference to a Plan of Newcastle upon Tyne*, (Newcastle: Thomas Oliver, 1831), p. 32.

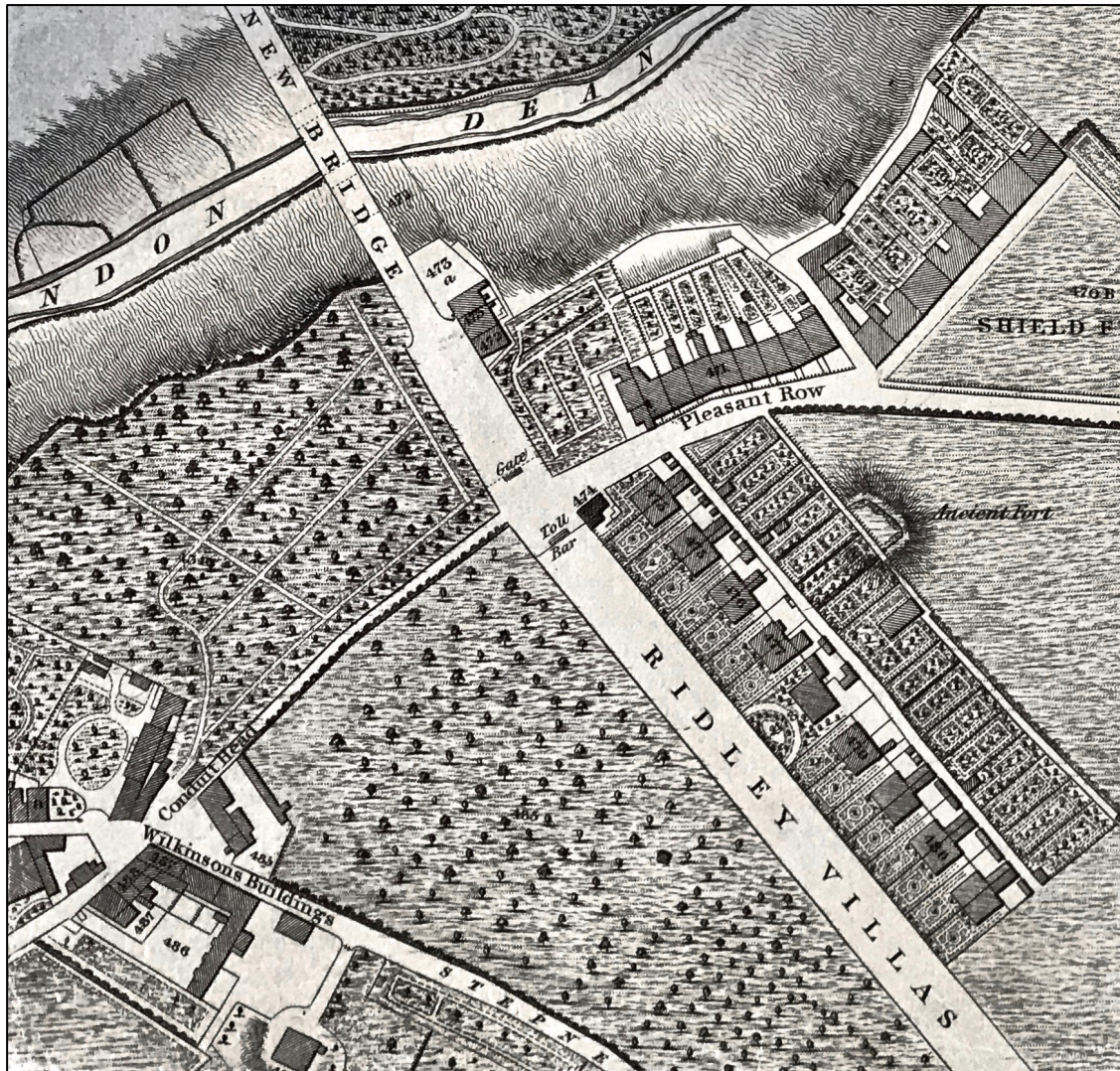


Figure 2. Ridley Villas as depicted in Thomas Oliver's survey published in 1830. Reproduced from Newcastle City Library, Local Studies Collection.

Occupants of 13, Ridley Villas on Census Night, 1841 and 1852			
1841	Name	Age	Profession, Trade, Employment
	Susan Crowther	65	Engine Builder
	Sabina Crowther	30	
	Elizabeth Thompson	40	School Mistress
	Mary Day	15	Female Servant
1851	Susanna R. Crowther	72	Owner of Houses
	Elizabeth Thompson	50	Owner of Houses
	Isabella Grey	19	House Servant

Figure 3. Source: 1841 Census, Northumberland All Saints, National Archives HO107/845/7 and 1851 Census, Northumberland All Saints, HO 107.2407.

Susannah lived at 13 Ridley Villas until her death in 1852, and consequently there are two census records that record who was living with her in 1841 and 1851; see Figure 3. Elizabeth Thompson was Susannah's daughter, and the 1851 census return confirms that she was a widow by then and probably also in 1841. The discrepancy in

Susannah's age is partly a result of the instruction to the census enumerators in 1841 to round down to the nearest term of five years anyone over fourteen year of age, giving Susannah a true age of nearer seventy rather than the 65-years recorded.³⁶ When she died in September 1852, her age was reportedly 80-years, so it's likely that she was 69-years of age in 1841.³⁷ Her recorded age in 1851 was, perhaps, a deliberate mistake on Susannah's part, and not unusual for women, especially if the person collecting the completed household schedule was a known acquaintance.

In 1851 both Susannah and her daughter Elizabeth claimed to be owners of houses, suggesting that by then the major source of Susannah's annual income derived from rents paid by tenants. This was not unusual as such property provided a more assured source of regular income for retirees, which she certainly was by 1851. In any case, Susannah had certainly owned housing in the 1820s as Crowther and Morris are recorded in the Byker rate books as occupants of houses to the value of £7 annual rental in 1826 and 1827, though from February and May of 1828 this property was recorded as unoccupied and 'late Crowther & Morris'.³⁸ This property was most likely the Stepney Buildings that is listed as Susannah's property by Parson and White in 1827, Stepney being the settlement on the west side of the Ouseburn within the Township of Byker. Its vacant status in 1828 suggests that Susannah possibly sold this property as a result of her business partner's insolvency and any claims against the firm resulting from this.

Crowther and Smith, 1832-44

Ridley Villas was a short carriage drive from the foundry at Ouseburn Bridge, so well situated for Susannah's supervision of her business, and by early 1832 she had secured a new partner in the form of Joseph Smith. Smith had been an engine-wright at Heaton Main Colliery where he was responsible for the maintenance of Chapman's first locomotive that was introduced in October 1813. In 1822, Smith built an engine for the Rainton wagon-way (part of Londonderry's estate managed by John Buddle) and in 1826 he succeeded to the post of principal engineer at Hetton, before taking up the same position at South Hetton.³⁹

As an engine-wright, Smith was a much better partnership proposition than Morris had been, providing Susannah with the expertise, contacts and reputation to develop the engine building capacity at Ouseburn to serve her most important regional market, the Durham coalfield. One of the first acts of the partnership was to petition Newcastle Common Council in April 1832 for a licence to retrospectively approve structures they had erected to facilitate loading from keels in the Ouseburn. In this petition they described how 'their quay was too shallow to unload from keels coal, cinders, loam and sand, and they had built an inclined plane or tramway extending 26ft into the burn, but retractable when not in use. They had also built a coal stage

³⁶ Edward Higgs, *Making Sense of the Census*, (London: HMSO, 1991), p. 68.

³⁷ *Tyne Mercury*, 25 September 1852, p. 8.

³⁸ Byker Township Rate Book, May 1827-February 1834, TWAM 183/1/579. Note that the rate book for the years 1819 to 1826 is missing.

³⁹ I am grateful to Les Turnbull for these details of Smith's career prior to his partnership with Crowther. For more information see Les Turnbull, *Railways Before George Stephenson* (Oxford: Chapman Research Publishing, 2012), pp. 112-113. Also, Stafford M. Linsley, 'John Buddle jnr.', in *A Biographical Dictionary of Civil Engineers*, volume 1, pp. 96-97.

projecting 10ft, adjoining the battlement of Ouseburn Bridge, supported by one pile'. The coal stage was thought to be obstructive to traffic on the burn but the River Committee agreed to the licence for a fee of £2 6d. per annum.⁴⁰ Two years later, Susannah and Smith successfully secured a new 21-year lease from the Common Council for her 'messuage and quay at Ouseburn' at an annual rent of £20.⁴¹

The presence of a blowing cylinder attached to the foundry with 'a good air furnace' in 1818 confirms that the premises at Ouseburn Bridge were capable of producing large quantities of pig-iron, which was then converted into more malleable cast iron, probably on the basis of Henry Cort's puddling process, a method of removing impurities from the iron by heating in a reverberatory furnace prior to pouring the melted metal into moulds. The sand and loam was used to prevent the molten iron from adhering to the mould, especially important where a smooth clean finish was required, such as in engine parts.⁴²

The need to store quantities of these materials at the foundry resulted in a number of attempts at theft. In May 1833 the office was broken into but thieves only got away with two shillings and a case of mathematical instruments. However, on 12 April 1834, 290lbs of pig iron was stolen by Henry Daggett and Robert Kendall, former employees and consequently familiar with the foundry site. Their appearance on the morning of the robbery had attracted suspicion, and when apprehended, they took two police constables to the house of Isaac Bagnall where iron matching the description of that stolen was found wrapped in rags in the cellar. When their case came to trial, Kendall was sentenced to four months hard labour, whilst Daggett and Bagnall were sentenced to seven years transportation, with Bagnall's term reduced from eleven years in light of the Jury asking for mercy on account of his previous good character.⁴³ Henry Daggett's eldest son, Christopher, worked at the foundry from the age of eleven, carrying bricks to the moulds, making cores for small castings, and using a hand-held riddle to sift the sand to ensure a uniform surface around the mould when casting a large cylinder. He started at Crowther's foundry in 1838 and was still there in the summer of 1841.⁴⁴

The 1830s appear to have been a successful decade for the business. In May 1838 the premises at Ouseburn had a rateable value of £114 per annum, compared to the £56

⁴⁰ 'Susanna Rosina Crowther of Newcastle, widow, and Joseph Smith iron founder and civil engineer', TWAM 589/21, f.97, meeting held 12 April 1832.

⁴¹ Corporation Rent Roll, 1836, SANT, p. 6. The lease ran for 21-years from 25 March 1834.

⁴² Thomas Southcliffe Ashton, *Iron and Steel in the Industrial Revolution*, (Manchester: University Press, 1924). This is a classic history of the iron industry that provides a good overview of the process.

⁴³ *Newcastle Courant*, 1 June 1833, p. 4; *Newcastle Courant*, 5 July 1834, p. 4, and *Newcastle Journal*, 5 July 1834, p. 3. Bagnall had agreed to buy the iron for 3d. a stone but it was actually worth 7d. a stone.

⁴⁴ A riddle was a large circular frame with a wire mesh. His brother younger Thomas worked with saucer and plate moulds at Dalton's Pottery on nearby Stepney Bank. Children's Employment: Appendix to the First Report of Commissioners appointed for inquiring into the Employment and Condition of Children in Mines and Manufactories: Mines, Part 1 Evidence from Sub-Commissioners (London: House of Lords, 1842, XX (1), p. 707 and Part 2, p. 24.

per annum in April 1820 and £32 per annum in June 1805.⁴⁵ In June 1840, Crowther and Smith placed an advert for 'a steady active man, who thoroughly understands brass founding in all its departments, and is competent to undertake the management of engine castings'. This person was 'wanted immediately' suggesting that business was brisk at the time.⁴⁶ In August 1840, they advertised two new boilers for sale, 25¹/₂ feet long by 6 feet diameter, made of plate 5-8ths thick.⁴⁷

It isn't obvious how much time Joseph Smith spent at the Ouseburn site as he continued in his role as engineer at South Hetton Colliery throughout much of the 1830s. It would appear that Susannah alone managed the foundry and engine production whilst Smith served as salesman and link person to potential clients in the Durham coalfield. One of the few occasions when Smith invited enquiries to his office at Ouseburn was in June 1841 when he was seeking a colliery engine-wright.⁴⁸

In May 1841, the government commissioner John Roby Leifchild visited Crowther's foundry to gather evidence for the Royal Commission on children's employment and noted that 'several boys have been discharged from these works within a few weeks from want of employment for them'.⁴⁹ Regional trade had begun to slacken off and by summer 1842 this had developed into a slump. Orders dried up and workers were laid off, both in the coalfield and the town. On 3 August 1842, Newcastle Council debated the need for public works 'in consequence of the want of employment which at present prevails amongst mechanics and labourers'.⁵⁰

In October 1842 Susannah advertised (through Chater, her solicitor) the sale of stock and machinery 'now in the Iron Foundry at Ouseburn' that included 'two self-acting lathes, drilling, planeing, screwing, and groove cutting machines, together with a quantity of tools and other effects for foundry purposes'. The foundry premises were to be let for a term of years. The sale was to be by auction, at the premises, on 21 November but was postponed until the 5 December.⁵¹ The foundry was advertised 'to be sold or let' in May 1843 and in May 1844 the auctioneers Messrs Small and Brough advertised the sale of a 12-horsepower engine, a 6-horsepower engine, and the lathes, drills and other machinery that obviously hadn't sold in 1842.⁵²

Rayne and Burn, Ouseburn Foundry

On 9 October 1844, the partnership between Crowther and Smith was formerly dissolved, and the premises were again advertised for sale.⁵³ In May 1845, they were advertised again for sale or let, by which time Susannah had secured Messrs Rayne

⁴⁵ All Saints Rate Books, 1805-1838, TWAM 183/100, 112, and 141.

⁴⁶ *Newcastle Courant*, 5 June 1840, p. 1.

⁴⁷ *Newcastle Courant*, 14 August 1840, p. 1.

⁴⁸ *Newcastle Courant*, 18 June 1841, p. 1.

⁴⁹ Children's Employment: Appendix to the First Report of Commissioners 1842, XX (1), p. 708.

⁵⁰ Newcastle Corporation Minutes, 3 August 1842.

⁵¹ *Newcastle Courant*, 28 October to 2 December 1842, p. 6 and p. 1, and *Newcastle Journal*, 29 October to 3 December 1842, all on p. 1.

⁵² *Newcastle Courant*, 3 and 10 May 1844, p. 6 (both) and *Newcastle Journal*, 4 May (p. 2) and 11 May 1844, p. 1.

⁵³ *London Gazette*, 15 October 1844, p. 3533; *Newcastle Courant*, 11 October (p. 1) and 18 October 1844, p. 6.

and Burn of Busy Cottage as tenants, though the site appears to have been unoccupied as the adverts state that 'Messrs Rayne and Burn, the present occupants, will send a person to show the premises'.⁵⁴

Susannah Crowther's foundry wasn't the only Ouseburn iron works that failed in the trade slump of the early 1840s. Her long standing professional associate, James Glynn had died 1826 and whilst the foundry at Glasshouse Bridge had continued through his widow and sons Joseph, William and John, the business appears to have been sold to Rayne and Burn by 1843 as they are recorded as owners when a fire broke out on the night of 10 January that year.⁵⁵

Rayne and Burn continued to manufacture steam engines at the Ouseburn Bridge premises, including one of 12-horsepower advertised as 'new' for sale in 1853.⁵⁶ They also advertised timber for sale from the Ouseburn Bridge site and whilst Newcastle newspapers for this period carry various adverts on behalf of the firm, these rarely specify the site, simply citing their Ouseburn Foundry, which in the 1840s and 1850s could have been either Crowther's or Glynn's former premises.⁵⁷ Following Susannah's death in September 1852, three steam engines (from 8-12-horsepower) together with various machines for cutting and shaping iron were advertised for sale at 'the manufactory formerly occupied by Messrs Crowther and Smith', and in September 1853 the foundry premises were once again advertised for sale, including 'some of the machinery and fixed tools belonging to Mr Burn'.⁵⁸ However, by that date the engineer Robert Morrison was already close to sealing his ownership of the Ouseburn Bridge site, having advertised for an office clerk at his Ouseburn Engine Works in June 1853, and building and installing his patent steam hammer design at the Ouseburn premises the following year.⁵⁹

Conclusion

On 25 September 1852, the *Tyne Mercury* announced the death 'in Ridley Villas, on the 21st inst. aged 80, Susannah Rosina, widow of the late Mr Phineas Crowther, iron founder'.⁶⁰ That she was still, at least in some quarters, simply known as the widow of her late husband appears an injustice by 1852, especially when you consider that her tenure as iron founder and engine builder at Ouseburn lasted at least twenty-six years, more than the years Phineas spent at Skinnerburn and Ouseburn combined.

Susannah would have continued receiving royalties after 1818 as a result of her late husband's 1800 patent, thanks to the widespread adoption of Phineas's design for

⁵⁴ *Newcastle Journal*, 3 May (p. 2) and 10 and 17 May 1845, p. 1 (both); *Newcastle Courant*, 9 May (p. 6) and 16 May 1845, p. 1.

⁵⁵ *Newcastle Journal*, 14 January 1843, p.2. John Glynn is last recorded as iron founder at Ouseburn in Robson's *Commercial Directory of Durham and Newcastle*, 1841.

⁵⁶ *Newcastle Courant*, 25 March 1853, p. 1.

⁵⁷ As above, and *Newcastle Journal* and *Tyne Mercury*, 20 May 1854, p.1 (both).

⁵⁸ *Newcastle Courant*, 19 and 26 November 1852, p. 4 (both) and 9 September 1853, p. 4. Also, *Newcastle Journal*, 20 and 27 November 1852, p. 4 (both), and *Tyne Mercury*, 17 September 1853, p. 4.

⁵⁹ *Newcastle Journal*, 16 July 1853, p. 1, and 21 October 1854, p. 7.

⁶⁰ *Tyne Mercury*, 25 September 1852, p. 8.

winding engines throughout the Durham coalfield. Her premises at Ouseburn must have continued to receive enquiries and orders for this market, no doubt encouraged through her partnership with Joseph Smith of South Hetton Colliery after 1832, and by mid-century other engine builders were also supplying Crowther patented engines to the Durham coalfield. A definitive record of Crowther type engines and their installation does not appear to exist but a Crowther engine built by Thomas Murray was installed at Fortune Pit at Burnhope in 1844, and another by Richardson of Hartlepool was installed at North Pit South Hetton in 1851.⁶¹ The Ouseburn area likewise experienced significant growth in heavy industry throughout the 1820s and 1830s, an upward trajectory that only came to an end in the early 1840s.

Furthermore, throughout her career as an iron founder and engine builder, Susannah could draw on an almost continuous local supply of skilled workers. These included the engineer Hugh Joyce, who was living locally at East Ballast Hills when he married in August 1831, and who appears to have served Susannah as a site foreman by 1842.⁶² Just As James Glynn appears to have supplied professional support in the aftermath of Phineas's death, so trusted employees like Hugh Joyce and others may have provided similar support during the later years, when economic conditions and Susannah's advancing age led her to reduce her time and commitment to the business.

The Newcastle solicitor Thomas Chater was a constant presence throughout Susannah's business history, assisting with the settlement of her late husband's estate, and later dealing with the disposal of stock, machinery, and premises. He no doubt assisted in drawing-up terms of reference for Susannah's partnership agreements with Morris and Smith, and being the daughter of a leading Edinburgh attorney she must surely have possessed some knowledge and confidence in these affairs.

As a working woman Susannah would have needed support at home, especially in the 1820s when some of her children were still fairly young. How this was achieved at Sandgate New Road isn't obvious, though given the success of the business at Ouseburn Bridge, she and Phineas could probably have afforded the expense of a domestic. At Ridley Villas a live-in domestic servant is recorded in both the 1841 and 1851 census returns, and her widowed daughter Elizabeth could be relied upon to oversee all household needs, thus freeing Susannah to focus her time and energies on growing the business and securing property and other assets to sustain her in old age and retirement. In this respect she appears to have been successful, as her name appeared in lists of depositors of the Northumberland and Durham District Banking Company between 1847 and 1851.⁶³

⁶¹ 'Crowther Type Engines', *Model Engineer*, 2 December 1977; accessed via <https://www.model-engineer.co.uk/sites/7/documents/me-3574-2.pdf> in August 2020.

⁶² Marriage of 'Mr Hugh Joyce, of the Ouseburn, engineer', in *Newcastle Courant*, 27 August 1831, p. 4, and *Durham County Advertiser*, 2 September 1831, p. 6. Joyce is recorded as an engineer in the 1841 census, at East Ballast Hills; Northumberland All Saints, HO107/846/6. In the 1840s prospective buyers were directed to Joyce for access to the premises.

⁶³ *Durham Chronicle*, 12 February 1847, p. 8; *Newcastle Courant*, 15 February 1850, p. 5; *Durham Chronicle*, 14 February 1851, p. 8.

It was not unusual for a widow to inherit their late husband's business. For the early modern period, Gwendolynn Heley has demonstrated that in Newcastle in the years 1543-1642 a tradesman's widow was just as likely as the son to inherit the business, with 27% of wives and 31% of sons being the chief beneficiary in her study of Durham probate records.⁶⁴ These figures may simply reflect the age of the children at the time of their father's death, making it impossible for a son to carry on the business. This was certainly the situation for Crowther's eldest boy, Phineas, who was just twelve years old in 1818. Liz O'Donnell's study of Quaker women who were active in the Newcastle Monthly Meeting in the early nineteenth century found a number of widows that continued their late husband's businesses but these tended to be traditional female activities like dressmaking or female dominated trades like confectionary and drapery. In the early nineteenth century there was a growing trend amongst the affluent middle class to exclude wives and daughters from economic activity because a leisured wife was a symbol of their own gentility.⁶⁵ So, whilst it wasn't unusual for Susannah to inherit the foundry and engine works, it was unusual that she chose not to sell the business, nor acquire another husband, or become a junior partner but instead chose to carry on the business herself. This fact alone makes Susannah Crowther stand out as a woman in the years 1818-52.

Iron foundries were a continuous feature of the Ouseburn industrial scene throughout the nineteenth century, and the foundry at Ouseburn Bridge was still a notable landmark in 1900.⁶⁶ By then it was part of John Spencer & Sons of Newburn, manufacturing engine parts for Tyne shipbuilders. Of the various iron and engineering works that preceded it, there was only one that was owned by a woman.

© Mike Greatbatch, August 2020

Acknowledgements: I am grateful for the advice and information provided by Les Turnbull and Liz O'Donnell, both of whom also took the trouble to read a draft of this paper. The staff at Newcastle City Library have been a great help over many years and their permission to reproduce extracts from their extensive map collection is much appreciated.

Word Count: 6791 + 1587 (foot-notes) = 8,378

⁶⁴ Gwendolynn Heley, *The Material Culture of the Tradesmen of Newcastle upon Tyne 1545-1642* (Oxford: BAR Publishing, 2016), p. 19 and Table 3.3.

⁶⁵ Elizabeth A. O'Donnell, *Woman's Rights and Woman's Duties: Quaker Women in the Nineteenth Century, with special reference to Newcastle Monthly Meeting of Women Friends* (PhD, University of Sunderland, 2000), p. 26 and Appendix 1.

⁶⁶ Mike Greatbatch, 'Ouseburn in 1900', *North East History*, Volume 38 (2007).