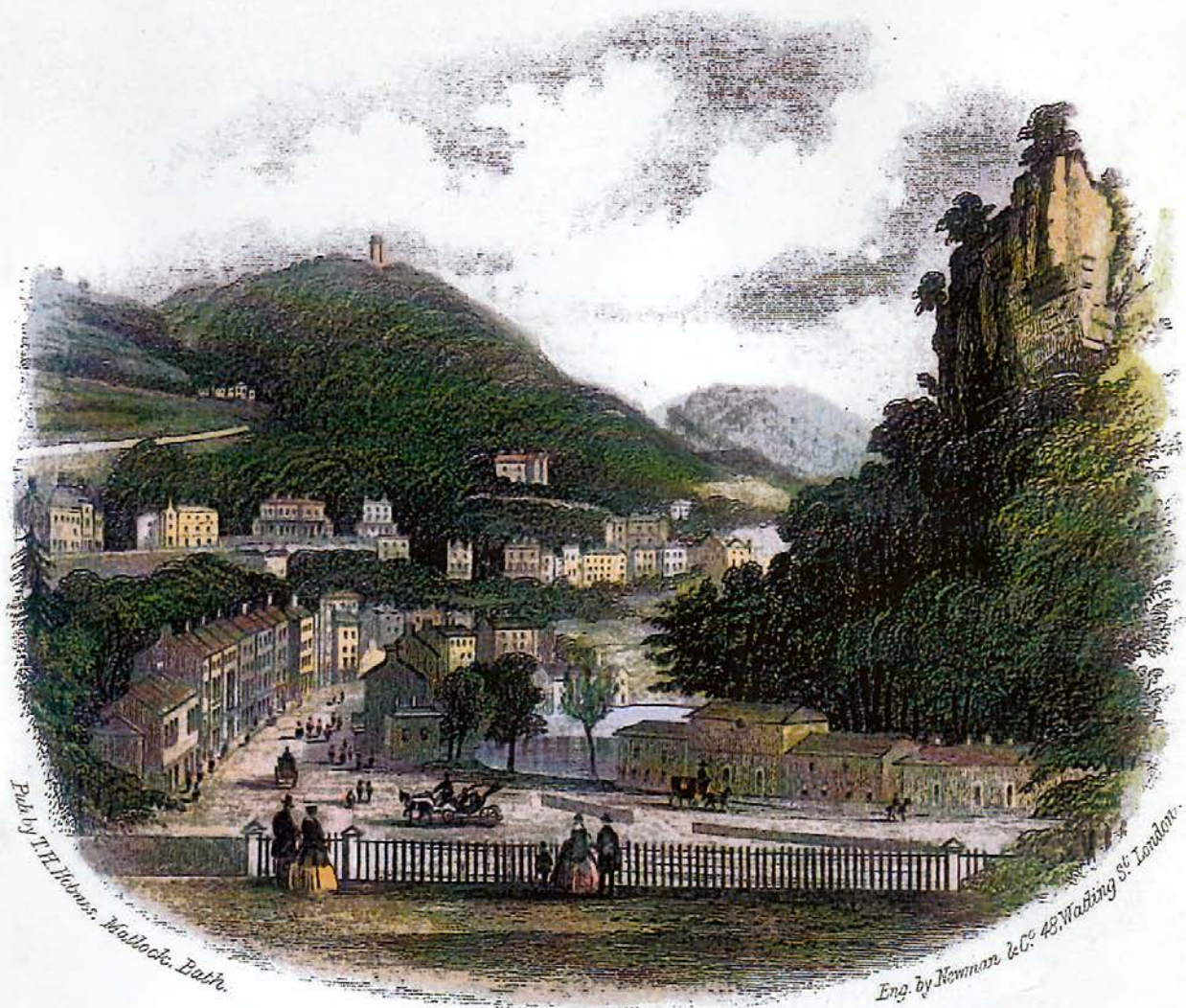


Vol 20

DERBYSHIRE MISCELLANY



Matlock Bath from the Old Bath Terrace.

**The Local History Bulletin
of the
Derbyshire Archaeological Society**

Volume 20

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THOMAS SMITH OF DERBY (1721-1767)

PIONEER OF ENGLISH LANDSCAPE ART

(By Trevor Brighton)

Derby in the 18th century was a modest county and market town which made considerable contributions to the advancement of science and art in England. In the field of science were John Flamsteed, the Astronomer Royal, John Whitehurst, Clockmaker and geologist, George Sorocold, engineer, and various members of the Lunar Society.

Derby also produced a remarkable sequence of artists - Thomas Smith, painter and engraver, John Raphael Smith his younger son, mezzotinter and Joseph Wright, ARA, painter. Of these Wright has been well written about and exhibited and a recent study also covered the work of John Raphael Smith.¹ However Thomas Smith has been largely overlooked and has received neither a monograph nor an exhibition of his work.²

Details of his early life are minimal and we cannot be absolutely certain that he was born in Derby. Derby parish registers reveal three Thomas Smiths who were baptised at Friargate Presbyterian Church in 1720, at All Saints in 1721 and at St Werburgh's in 1724. Along with others, the present writer accepts the year 1721 as that of the artist's birth.

We know little of his early education and training. His name does not appear in the Register of Derby School, nor does that of his first son, Thomas Correggio. However, the name of his younger son, John Raphael is recorded. Edward Edwards, writing in 1808, tells us that Smith was a self-taught painter and was one of the first artists who explored and displayed the beautiful scenes of his native country.³ However, we can now question or qualify the assertion that he was self-taught. Like his two sons and Joseph Wright later, he must have gone to London to receive some training. It was there that Smith met the person who figured so prominently in his working life - the celebrated Huguenot engraver, Francois Vivares (1709-1780). Vivares was born near Montpellier in France and eventually came, via Geneva and Paris, to settle in the growing Huguenot community of artists and craftsmen in London. He was twelve years older than Thomas Smith and had engraved the works of various continental masters including highly acclaimed landscapes after Claude and the Poussins. He must have encouraged and guided the young Derby artist in his early essays in landscape painting.

Two of these early paintings by Smith now hang in Pickford's House in Derby and probably date from the late 1730s. They depict rural riverside scenes and are Flemish in style and feeling with some resemblance to the work of Jan Siberechts (1627-c.1697) who worked at Chatsworth, Wollaton and other aristocratic seats. Smith was probably captivated by Flemish prints; there is no evidence that he ever studied abroad.

Vivares was working with Smith in London and Derby as early as 1743 when he began to cut plates of Smith's landscapes. Indeed, by the time of Smith's death in 1767, Vivares had engraved more of his landscapes than any other printmaker. It is indicative of Vivares's influence upon the young artist that the sales of the latter's extensive collection of prints, paintings and drawings following his death listed no less than a hundred illustrations by the Huguenot.

Whilst staying in Derby, Vivares accompanied Smith on his painting tour of the Peak as he did in later years into the Yorkshire Dales and Lake District. George Vertue, *'the father of English art history'*, tells us that in 1745 that they were joint *'undertakers'*, or publishers, of *'14 Views done in Derby of Dunnington Cliffe, Anchor Church (p6), Hopping Mill Ware [weir] and Lym[e] Park'*.⁴ The *'14 Views'* included the eight views of the Peak District (Dovedale p5) published in 1743 and the prospects of Chatsworth (p6) and Haddon Hall (p7) published in the following year.

During his stay in Derby Vivares had his infant son baptised at All Saints church on 4th September 1744. The boy was named Thomas, presumably after Thomas Smith who was probably his godfather.

The Smith-Vivares relationship was obviously more than a pupil-teacher association. They were close friends and business partners and enjoyed going on sketching tours together. Indeed they appear together in a number of prints they produced. Thomas Smith was a keen angler and in his prospect of Monsal Dale (p7) he, with the rod,

and Vivares, with the net, are portrayed catching brown trout below the waterfall.

By late 1745 Vivares had returned to London perhaps prompted by the arrival in Derby of the Young Pretender's invading army. The partnership between Vivares nevertheless remained intact and they undertook further excursions to the wilder and little-known parts of England. Smith was captivated by the natural, unspoilt features of these landscapes - rocks and rivers, cataracts and caves.

Thus he began to divert the attention of the grand tourists away from the Roman campagna as captured by Claude or Salvator Rosa's startling vistas of the Alps and Appenines. He loved the peace and solitude as he sketched Derbyshire's rivers - the Noe and the Wye, the Dove and the Manifold, the Derwent and the Trent. He enjoyed the contemplation associated with angling as he painted Kirkstall Abbey (p8) on the Aire and Fountains Abbey on the Skell or laid down his brush and pencil to wade with his rod into the pool at the foot of High Force (p8) on the Tees. The poet Thomas Gray, author of the celebrated '*Elegy in an English churchyard*' admired Smith's work, collected his prints and followed in his footsteps. Thus we find him visiting Gordale Scar in 1769 and rejoicing to find that '*at the alehouse where I dined at Malham*', Vivares the landscape painter lodged for a week or more. Smith and Bellers had also been there [in 1751], and two prints of Gordale have been engraved by them.⁵

Smith also learned from Vivares the art of engraving and etching on copper. The former entailed cutting lines in the plate by means of a v-ended steel burin; the latter involved waxing the plate, lightly cutting through the wax with a fine needle-point and then dipping the plate in acid which would bite into the exposed copper. The cleaned plate could then be inked by the printer.

Prints from Smith's paintings could be sold for as much as ten shillings each and proved a better source of income than painting alone. Apart from Vivares, Smith co-operated with other engravers to produce prints that were issued in folios between two and eight. In 1758 he produced two imaginary landscapes entitled '*Solitude*' and '*Contemplation*' (p9), drawing on the wild Italian landscapes of Salvator Rosa and caves Smith had first painted sixteen years earlier. It is interesting that now he was engraving his own works and signs them '*Painted and published in Derby Oct. 1758 by T. Smith*'.

The theme is one of cave dwelling hermits which was close to Smith's heart. However, these prints are very rare and probably did not sell well. The vogue of creating a hermit's grotto in one's park or garden was on the wane by that date.

The first half of the eighteenth century saw a general shift in English garden design from the geometrically linear, mannerist and baroque layouts of the 17th century. Smith had published his two topographical views of Chatsworth and Haddon Hall in 1744. They record the outmoded Franco-Dutch gardens at Chatsworth and the outgrown terraces at Haddon. However, Smith's prospects of the caves and waterfalls of the Peak District and the Yorkshire Dales helped to influence the attempts to reproduce such features in parks and gardens. In 1748-9 he published views of four country estates - Viscount Tyrconnel's water gardens at Belton in Lincolnshire (p10) Lord Byron's grounds at Newstead Abbey, Sir Thomas Lyttleton's Hagley Park in Worcestershire and Virgil's Grove at William Shenstone's seat, The Leasowes, in Shropshire. The first of these at Belton revealed how the river Witham had been dammed and embellished with fanciful rockwork and pools and cascades together with a hermit in his cave!

Contrast Smith's natural scenes in the dales and country parks with his famous view of smoke, steam and activity in his prospect of the industrial site of Coalbrookdale in Shropshire which he executed for Abraham Darby III (p10). Issued as two prints in 1758, the first depicts the site of the iron works and the second the adjacent landscape with Abraham Darby III's country house. The first prospect is one of the earliest depictions of the Industrial Revolution in England and was compiled by Smith with the assistance of George Perry, the site engineer, who also contributed to the letterpress description of the scene. The print has a narrative quality beginning on the opposite side of the Coal Brook valley with a cart load of coal being driven down to the coke ovens and furnaces below the near slope of the valley and indicated by their clouds of smoke and steam. Leaving the site, in the foreground is the end product - a large casting of a boiler, on a dray drawn by six horses, on its way to a Cornish tin mine.

This early industrial scene still has something of the rural idyll and none of the blight and disfiguration associated with later industrial sites. The prints sold very well with an initial list of 436 subscribers to the first edition, Darby himself taking 20 sets.

Smith was now travelling widely to record striking views of the English landscape, often depicted for the first time. From Yorkshire he had entered the Lake District to the north west and to the north east he journeyed as far as Tynemouth Priory. In the 1750s he began to paint equine portraits, set in landscapes, for the hunting and racing aristocracy. This took him to Newmarket Heath. In 1755 he was in the West Country at Bristol painting two dramatic scenes of the Avon Gorge which were engraved in the following year. The one entitled '*View of St Vincent's Rock and the Hotwells*' (p11) looks inland to Bristol docks and the riverside spa called Hotwells. This last place suggests, as we shall see, that he may have visited Bristol for more than artistic reasons.

By 1761 he had published his last engravings of scenes in the Lake District at Derwentwater, Thirlmere, Windermere and Ennerdale. He again engraved the plates himself to produce the most atmospheric vistas of places rarely visited at this time. His '*View of Derwentwater from Crow Park*' (p11) was dedicated to George III and represents one of the first attempts to portray the 'sublime' in English landscape art. It was published five years after Edmund Burke's celebrated treatise '*On the Sublime and Beautiful*' and evokes feelings of awe and horror in the immensity of the lake and mountains. In 1769 Thomas Gray was drawn by Smith's engraving to visit the very spot from which Smith, with the aid of a Claude glass, encompassed this vast scene. He recorded that '*Smith judged right when he took his print of the lake from hence, for it is a gentle eminence, not too high, on the very margin of the water and commanding it from end to end, looking full into the gorge of Borrowdale*'.⁶

The Lake District views marked the zenith of Smith's achievements. Thereafter he painted little and published no further engravings. In 1767, the year of his premature death, he exhibited three landscapes in oils, along with his older son, Thomas Correggio, who presented two miniatures, at the Society of Artists in London.⁷ The last we hear of Thomas Smith is the following announcement in the *Derby Mercury* of 15th September 1767:

*Saturday 5th instant died at the Hot Wells at Bristol, painter of this town, eminent for his landskip paintings, and many valuable prints taken from them. His corpse was brought hither on Friday last and interr'd the same evening in St Alkmund's church.*⁸

Presumably this visit to Hotwells explains his earlier visit to Bristol in 1755 when he included Hotwells in his picture of the Avon gorge. It was a popular place for treating consumption, a complaint which cut short the artist's life at the age of about 46.

His wife Hannah, as his executrix, disposed of his property and advertised for sale their rather fine house in Bridgegate in the *Derby Mercury*.⁹ She sold a number of his plates to John Boydell, the principal London print seller, whilst his collection of paintings, drawings and prints were sold at two London auction houses and at Brentnall's Wine Vaults in Derby Market Place.

Smith's two sons became artists: Thomas Correggio failed as a miniature painter in London and Derby and eventually died as a gilder and decorator in Uttoxeter. John Raphael however went to London and, probably encouraged and trained by Vivares, became one of the leading mezzotinters of his day.

As for Thomas Smith, his reputation endured into the early 19th century when later editions of his prints were still in circulation and Edward Edwards could still applaud his achievements. His modesty and attachment to Derby during a short life restricted any claim to fame. He seldom signed or dated his landscapes which, in many cases, probably hang unidentified in country houses. Yet despite all this he was the first English artist to embark on painting tours throughout England. His prints sold widely in various editions and were reproduced in such journals as '*The Gentleman's Magazine*', '*The Complete English Traveller*' and '*The Modern Universal British Traveller*'. In short, he promoted tourism.

We have seen how he had an influence on the growth of landscape gardening and his choice of viewpoints, remarked upon by Thomas Gray at Crow Park overlooking Derwentwater, led to the great landscape artists of the later Romantic Movement often sitting in the same spot.

Smith was a pioneer of the 'picturesque' before the Reverend William Gilpin wrote his aesthetic treatises on the subject and he was the first English artist to portray ideas of the 'sublime' in his work as at Dovedale, Goredale Scar and the Lake District. An appreciation of his contribution to the beginnings of landscape art in England has been long overdue.

Notes and references

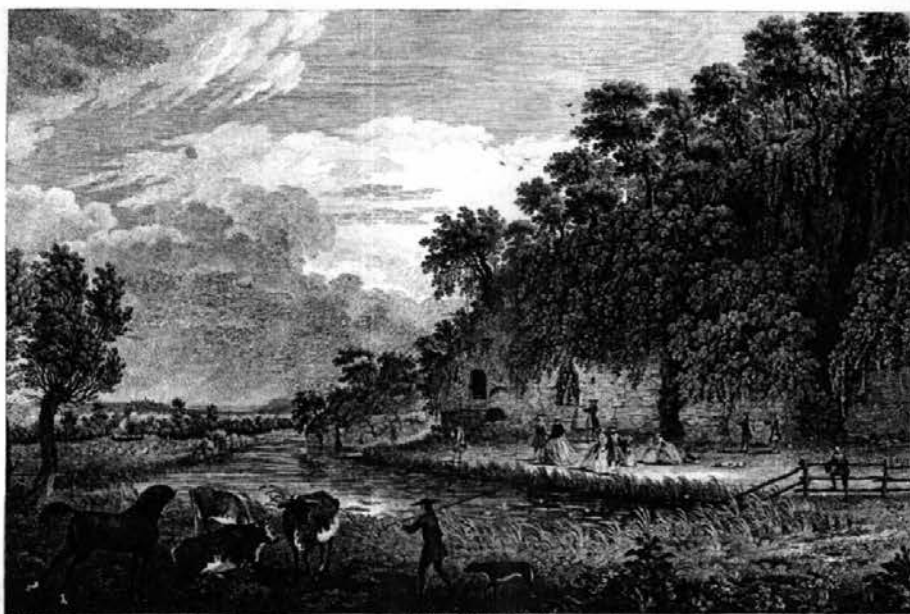
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3. Edwards, E., *Anecdotes of Painters ... intended as a continuation to the Anecdotes of Painting by the late Horace, Earl of Orford*, 1808.
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6. *Ibid.*
7. Graves, A., ed., *The Society of Artists of Great Britain 1760-1791 and the Free Society of Artists, 1761-1783*, 1907, reprinted 1969.
8. *Derby Mercury*, 15 September 1767.
9. *Ibid.*, 9 October 1767.

Acknowledgements

I would like to thank the Derbyshire Archaeological Society for supporting my research with a grant from the Pilling Award. As a result I have also written a book on Thomas Smith which includes all his known published prints and 14 colour reproductions of his paintings. It is published by the Bakewell Historical Society (£25 incl. p&p) and is available from the Society, The Old House Museum, Cunningham Place, Bakewell, DE45 1DD.

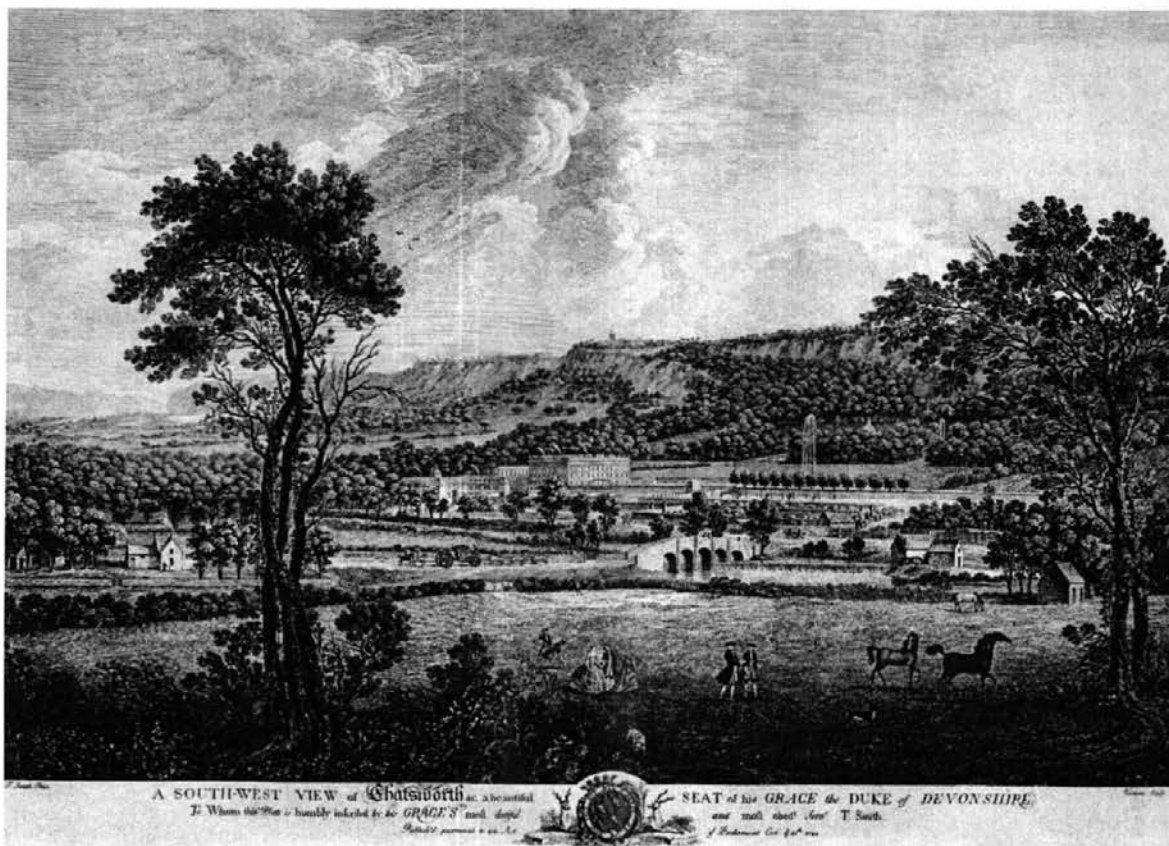


A Prospect in Dove Dale 3 miles North of Ashbourn.
Thomas Smith Pinxit et del. A Benoist Sculp
Published pursuant to an Act of Parliament
April ye 9th 1743 by T. Smith



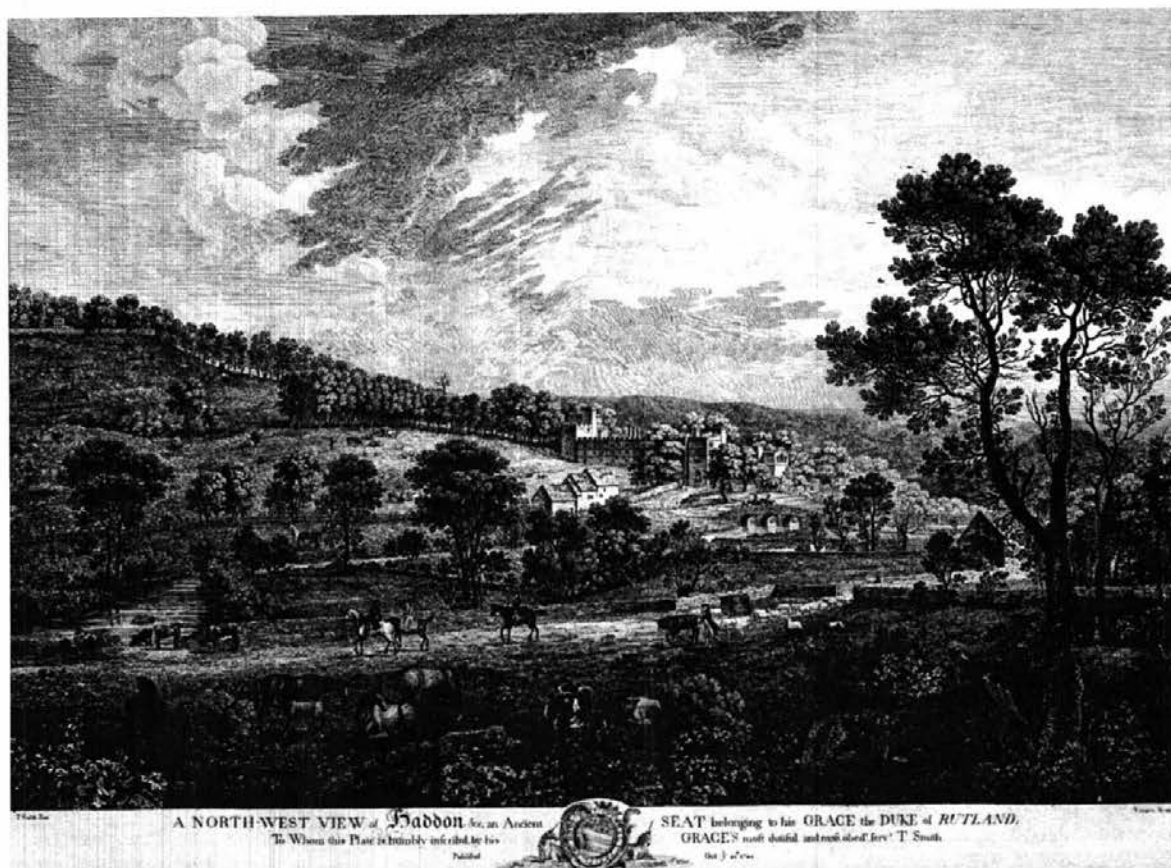
A View of Anchor Church
A small town situated here by habitation of an Anchorite; 'tis a large Cavern in ye face of a beautiful Rock, situate on ye River Trent (four miles south of Derby) near Foremark, ye seat of Sir Robt Burdett Bart, whose property it is, and to whom this Plate is dedicated by his most humble and obedt. servt. T. Smith.
T. Smith pinx. F. Vivares sculp.

A view of Anchor Church So-called from its having been ye habitation of an Anchorite; 'tis a large Cavern in ye face of a beautiful Rock, situate on ye River Trent (four miles south of Derby) near Foremark, ye seat of Sir Robt Burdett Bart, whose property it is, and to whom this Plate is dedicated by his most humble and obedt. servt. T. Smith.
 T. Smith pinx. F. Vivares sculp.
 Pub'd Aug 25 1745

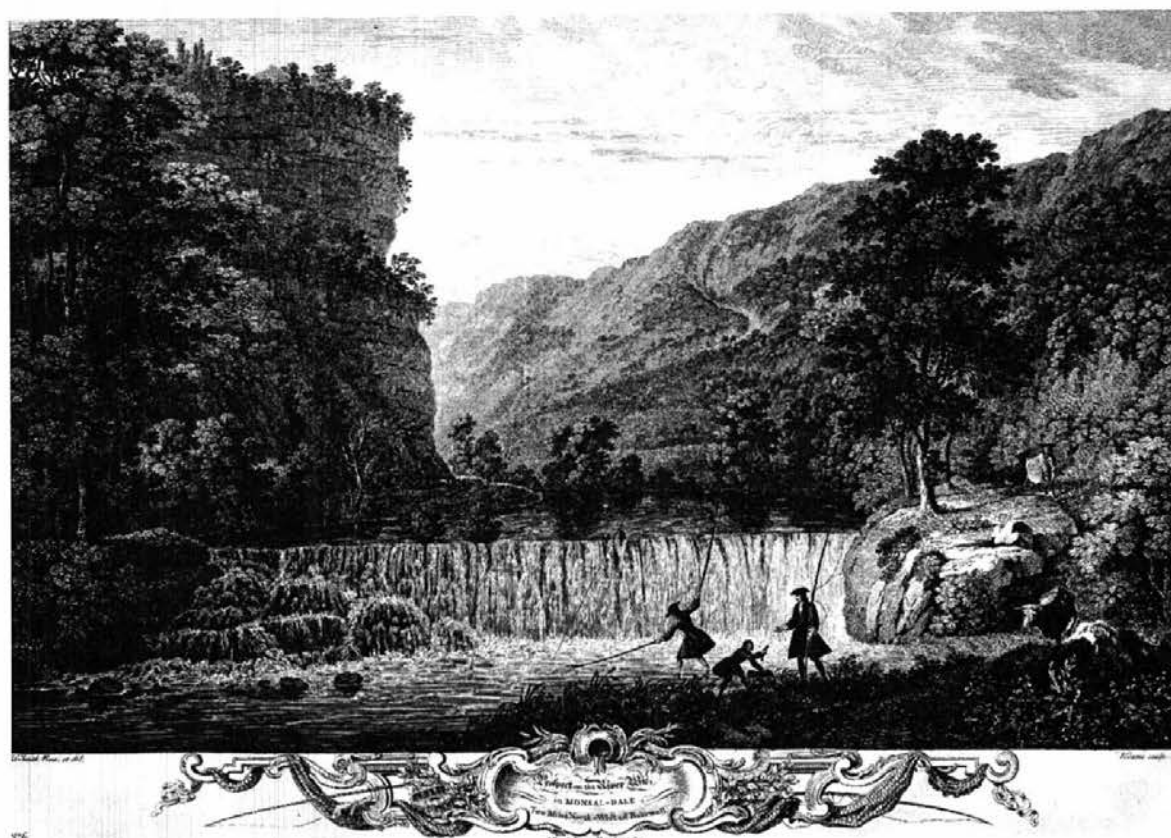


A South-west View of Chatsworth
T. Whom this Plate is humbly dedicated to the GRACE'S most obligd.
Believe me to be Sir A.
SEAT of his GRACE the DUKE of DEVONSHIRE
and much about Servt. T. Smith.
J. Baskin del. G. G. G. G.

A south-west view of Chatsworth, etc.
 that beautiful seat of his Grace the Duke of Devonshire.
 T. Smith Vivares Sculp. 1744



A NORTH-WEST VIEW of Haddon Hall, etc.
An Ancient SEAT belonging to his GRACE the DUKE of RUTLAND
To Whom this plate is inscrib'd by his GRACE's most dutiful and most obed't serv't T. Smith



A Prospect of the River Wie, In Monsal Dale, two miles below Buxton.
T. Smith pinx. et del. Vivares Sculp
Publish'd March 25 1743



The South East View of Kirkstall Abbey, two miles from Leeds in Yorkshire, it was founded AD 1147 by H. Lacy of Pontifract, for Monks of the Cistercian Order. Its belongs to ye Rt. Hon the Earl of Cardigan. To whom this Plate is humbly inscribed by his Lordships most Obedt. Servt. T. Smith
 Tho. Smith pinx: F. Vivares sculp.
 published according to Act of Parliament Jan 15 1747



The High Force. This Cataract is on the River Teese which divides the COUNTIES of YORK and DURHAM; it falls down a Rock of Granite about 23 yards into a Large Circular Bason; the South side belongs to Ld. Carlisle, and Geo. Bowes Esqr., the North to Lord Barnard, to whom this view is inscribed by their most obedt. Servt. Thomas Smith.
 Tho: Smith pinx J. Mason sculp.
 Publish'd Decr. 1751



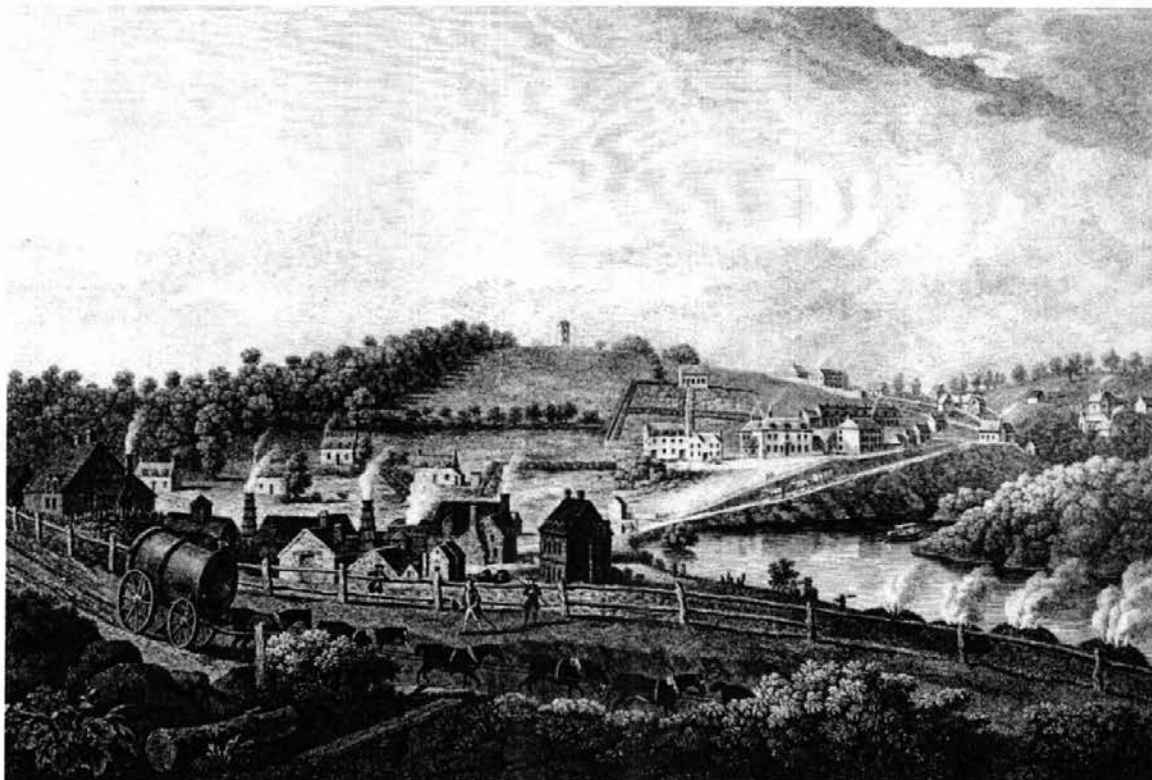
Solitude.
 Painted and Published at Derby, Oct. 1758
 by T. Smith.



Contemplation.
 Contemplation
 Painted and Published at Derby, Oct. 1758
 by T. Smith.



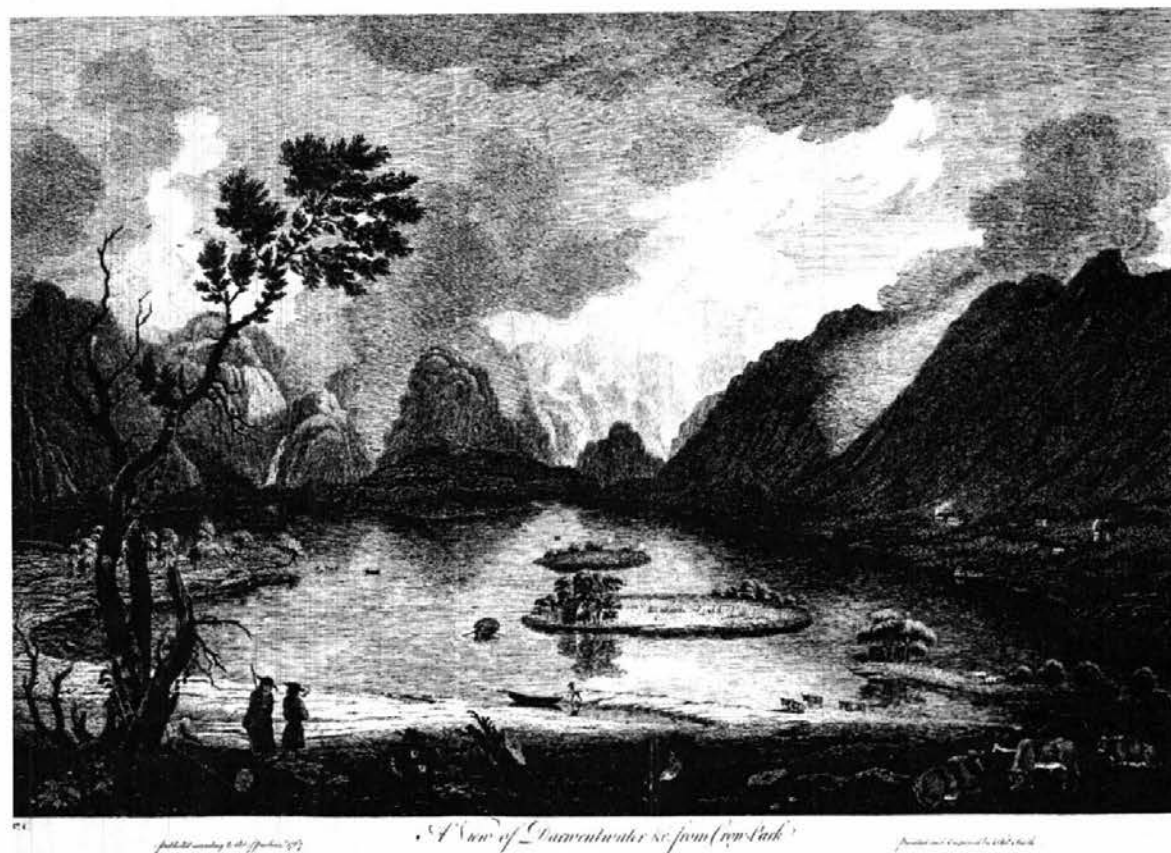
A View of the New Waterworks etc. at Belton in Lincolnshire, belonging to the Rt. honble. The Lord Visct. Tyrconnel.
To whom the plate is inscribed by his Lordships most dutiful and most bu'ble Servt. T. Smith
T. Smith pin: F. Vivares sculp.
Published 1748



A View of the Upper Works at Coalbrook Dale in the County of Salop
F. Vivares Sculp.
Designed and Published by G. Perry and T. Smith 1758, according to the Act of Parliament



A View of St. Vincent's Rock and the Hot Wells near Bristol
T. Smith pinx. F. Vivares sculp.
1757



A View of Darwent water etc. from Crow Park
Painted and Engraved by Thos Smith
London 1761

THE HARRISONS OF BRIDGE GATE, DERBY WHITESMITHS AND ENGINEERS PART I: WILLIAM HARRISON 1755-1819

(by Joan D'Arcy)

Introduction

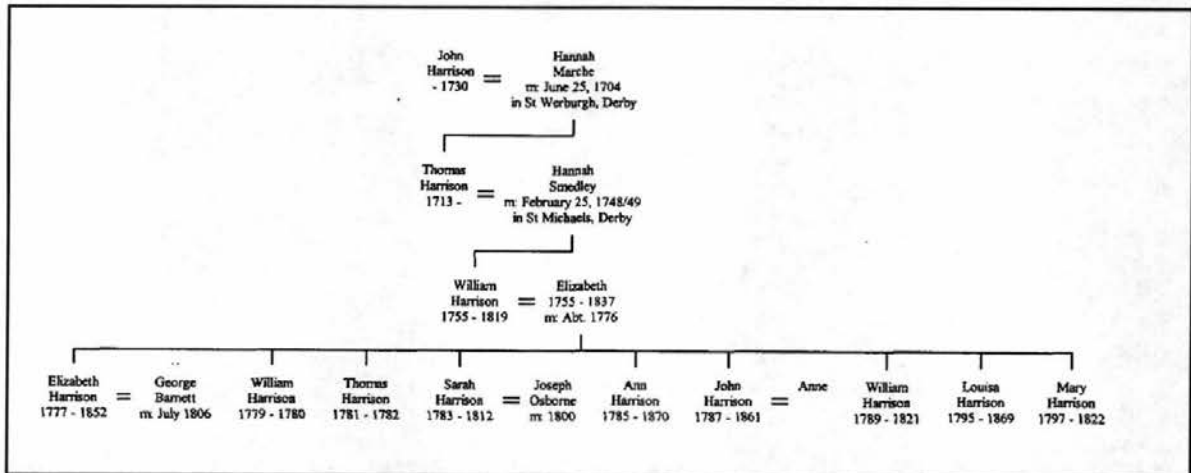
William Harrison and his son John were whitesmiths and engineers who lived and worked in Bridge Gate, Derby between 1776 and 1851. This article covers the work of William. His son John, who is better known, will be the subject of a later article. According to dictionary definitions whitesmiths were craftsmen, working in the manufacture and finishing of a wide range of metals such as tin, brass and pewter, and although they might use a hearth to heat and help shape their raw materials, they tended to work with cold metals. However the Harrisons, although not founders, also worked in wrought and cast iron and described themselves as engineers, building and maintaining machinery and experimenting with new ideas.

The town of Derby was an ideal centre for their enterprise as technology there was already well advanced. The great water wheel of The Silk Mill built by the Lombe brothers in 1717 beside the River Derwent was a wonder of the age and the mill is widely regarded as the world's first factory. In 1734 slitting and rolling mills were erected by the Derwent to prepare iron for various uses and copper sheathing for the navy. Coal and iron ores were found and processed close by and there was a workforce skilled in manufacture.

Starting Out

William was the third son of Thomas and Hannah Harrison of St. Werburgh's parish, an 'old' Derby family, his ancestors having been settled in the town for several generations, as shown in the family tree. He was baptised on 4 May 1755 and was 64 years old at the time of his burial at St. Alkmund's church on 27 August 1819.¹

William Harrison, whitesmith: family tree



William came from a long line of artisans and tradesmen and his name first appears as a whitesmith on 24 April 1776. The entry, in a borough chamberlain's account book, is for a single item, so perhaps he had been required to produce a test or 'apprentice' piece as proof of his ability.

*P^d William Harrison whitesmith for two Hooks and two Stays etc. for a Garden
Door belonging to the Houses on St. Mary's Bridge by Receipt.*

2s 8d²

He was 21 years of age and would have completed a seven year apprenticeship. Where he served his apprenticeship is not known but Derby was a centre of excellence in metalworking and had been home for some years to Robert Bakewell, the renowned blacksmith. William would have been baptised at St. Werburgh's in a font for which Bakewell made an elaborately decorated cover in 1718. One of Bakewell's apprentices, Benjamin Yates (c1709-1778), set up his workshop in St. Werburgh's parish, close to the church yard. If not apprenticed

there, he may have served under George Hardy, the whitesmith whom he replaces in the borough accounts at this time.³

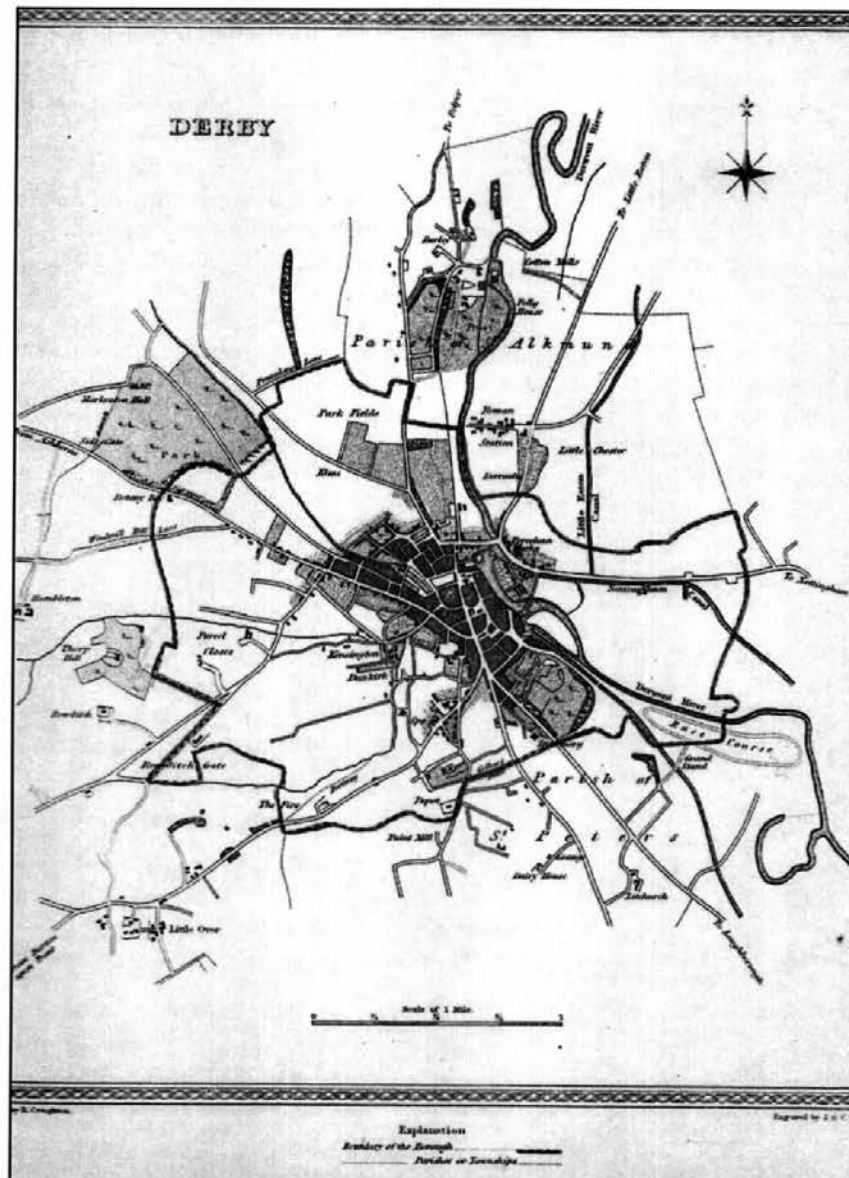
In 1776 he also married Elizabeth, precisely when and where has not been found. They had settled in St. Alkmund's parish by April 1777 when their first child, a daughter Elizabeth, was baptised, possibly living in a tenement. By 1791, if not earlier, and with a steadily growing family, as shown in the family tree, he had moved into a property in Bridge Gate.⁴ This was to be William's residence and workplace until his death and, as there were several persons named William Harrison in Derby at that time, he was often identified by the appellation '*of Bridge Gate*'. Numbered in advertisements as Nos 46-47, later renumbered as Nos 51-52, it stood until the street was demolished in 1970-1 to make way for the inner ring road so the premises can now only be identified from maps and photographs.⁵ The property stood on the north side of Bridge Gate; a 19th century photograph (Fig 1) shows the street frontage from St. Mary's Bridge. There was an arched access from Bridge Gate into the yard. Map 1, drawn c1815, shows a building in the yard which would have contained a tool shop, fitting shop and a forge.⁶ The buildings fronting the street would have housed offices and a shop. Borough bills show that much of the Harrison trade was in ironmongery, selling nails and screws by weight and tools and utensils such as scrapers and metal buckets. In 1791 William described himself in the Universal Directory, as a 'Whitesmith & Ironmonger' so ironmongery was an important part of his trade.⁷



Map 1 and Fig 1: 46-47 Bridge Gate.⁸

The Borough of Derby

Some of William's employment was for the borough. Derby was an ancient borough, established in Saxon times and granted a market charter and the right to govern itself in the 12th century. At the time of William's birth it was in many ways a typical market town of moderate size. During his lifetime, which virtually spanned the reign of George III, its population trebled, the most rapid expansion occurring between 1801, when a census count recorded 10,832 persons, and 1821 when 17,423 persons lived within the borough.⁹ The borough boundary incorporated the town centre and areas of open land on all sides, about 1877 acres. The parish population was greater as parish lands extended into townships and chapelries outside the borough boundary (see Map 2).



:Map 2: Derby showing the borough boundary c1835.¹⁰

The town was governed, according to a revised Charter of 1682-3, by a Mayor, nine aldermen from whom the Mayor was chosen, and 28 nominated burgesses. They assembled as the Common Hall, the 18th century equivalent of a present day town council, and recorded 'Proceedings', mainly the regulation of themselves, in Minute books of which one only, from 1802 to 1830, has survived. Lists of Burgesses were also maintained and several lists, somewhat damaged and not fully decipherable, came to light and were transcribed in the 1980s. They record that William was sworn in as a burgess on 21 October 1776.¹¹ It was a privileged position as explained by William Woolley, an early 18th century compiler of historical records:

The whole number is about 700 and are all such whose fathers were burgesses when they were born, or who have served an apprenticeship to free burgers have the right to demand their Burgess Oath. The Common Hall doth also sell and give the Burgess-ship and have also the power of taking it away and disenfranchising any for misdemeanours. The poor burgesses, though they have no land, are entitled to a horse gate and a cow gate in several large pastures ... as also the right of common in several meadows.¹²

It was a desirable position for a man in trade as burgesses paid no tolls on goods 'passing or repassing through the town, or laid up there at Nungreen or any other place, which other persons in the town are liable to'.

Burgess rights also gave a man the right to vote. Derby had sent two members to Parliament since 1295 and as James Pilkington, writing in 1789, tells us, *'The election of members in parliament is vested in the freemen and sworn burgesses'*.¹³ A non-burgess could apply to become a freeman and a generous 'gift' could 'oil the wheels'. John Whitehurst, a skilled clock and instrument maker, an incomer from Congleton, obtained this status in 1734 with the gift of a turret clock for the recently rebuilt Town Hall. He subsequently maintained the clock, presenting an annual bill of £1 to the Chamberlain for this service.¹⁴

When an election was called the names of those with the right to vote were published in Poll Books, votes were openly declared and the electors' choice of candidates were entered against their name. Elections were not always contested, candidates sometimes being returned by agreement and in Derby dominated by the Whig Dukes of Devonshire, High Stewards of the town. William was sworn in too late to vote in the hotly disputed election of 1775 when a Whig victory was overturned in Parliament for improper practices. Subsequent elections went uncontested until 1831 so William never had a chance to exercise his right to vote.¹⁵ However, his strong Tory beliefs found an outlet in the formation of the Loyal True Blue Club in 1812. This association was recalled in the *'Reminiscences'* of Alfred Wallis, for many years editor of the *Derby Mercury*. His memories of Derby, often second hand, were serialised in the *Derbyshire Advertiser*, and in reflecting upon his own family he relates that William was one of the 12 founding members of the Loyal True Blue Club, a patriotic Tory club founded to counter Jacobin influences as the Napoleonic War dragged on, stultifying trade with Europe and giving rise to Luddism at home. The founders were described by Henry Inglis, editor of the short lived *Derbyshire Courier*, as 'artisans', a charge which Wallis refuted:

They were men of substance, mostly freeholders and freemen of the borough and several of them respectable inn-keepers. My grandfather, the actual founder of the club, was the principal coach proprietor in Derby ... George Wallis, his nephew, the first secretary, was a maltster and coach proprietor ... and William Harrison (the only one who could properly be styled an "artisan") was an engineer and boiler-maker in Bridge-gate upon a large scale of business.

In two years the Club had attracted almost 200 members, including many county families: Wallis instanced Lord Scarsdale and the Curzons of Kedleston, Wilmots, Everys, Fitzherberts, Sitwells and even cotton magnate Sir Richard Arkwright, while the *Derby Mercury* reported speeches by Sir George Crewe of Calke and F.N. Mundy. In addition to flag waving processions and huge celebratory dinners they set up a benevolent fund 'to assist the loyal poor in distress'.¹⁶ By October 1814 W. Harrison was secretary, most probably William's son as he still held the post in 1821 after his father's death. These were invaluable contacts from which John, his elder son and heir, would greatly benefit.

Working for the Borough

The town council may have been undemocratic but it was not reactionary: Derby was open to new ideas and its willingness to embrace invention and new enterprises would give William many openings for expansion but at first much of his employment was routine maintenance work. Chamberlain's accounts show that he commenced regular employment for the borough in 1779 and from this time on until his death he presented annual or occasionally biennial bills. It was not a good year to start up a business as in March 1779 John and Christopher Heath's bankruptcy was announced in the *London Gazette*.¹⁷ The blow was all the greater as both had served as Mayors, John in 1763-4 and Christopher in 1774-5 when, on his presentation, as reported in the *Derby Mercury*: *'an elegant Entertainment will be given at the George Inn to the gentlemen of the Corporation, and many other gentlemen of the Town and neighbourhood'*.¹⁸

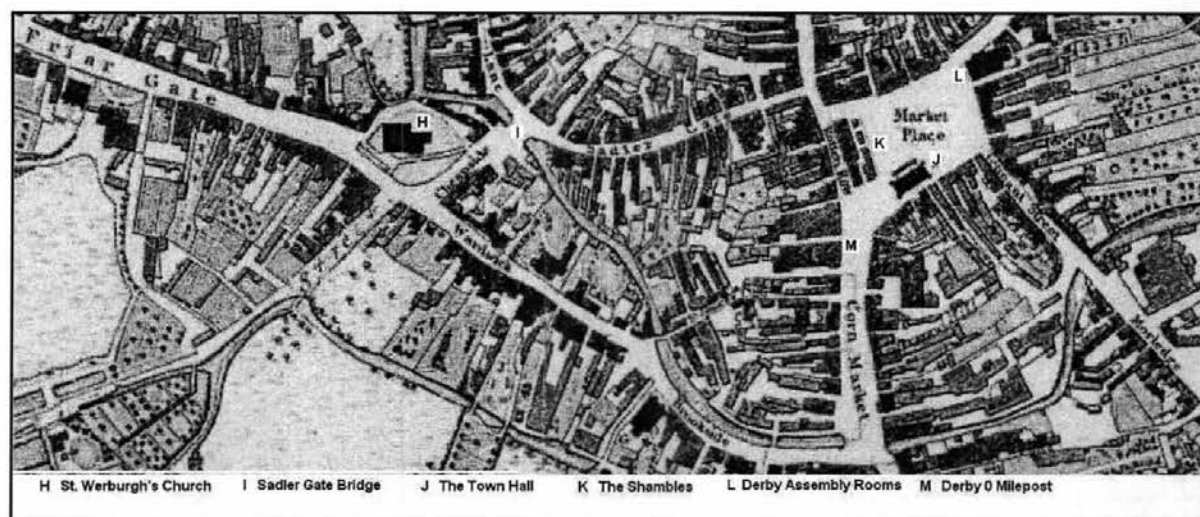
More seriously, the 'gentlemen of the Corporation' had invested two sums of £1250 and £900 in the bank, which had been paying 3% interest. Mary Ann Denby best expresses the effect in a letter to her brother William:

*Our town is filled with moanings and complaints by the failure of Messrs. John and Christopher Heath, bankers, who have involved the whole town and country in ruin. It is about a month since they stopped, and it has laid open such a scene as would never have been thought on.*¹⁹

For once this was no exaggeration. A meeting called in Derby at the George Inn on 5 April was packed with local gentry. The *Derby Mercury* listed many: *'Edward Sacheverell Pole, Esq; Francis Ashby, Esq; Thomas Borrow, Esq; Samuel Crompton jun. Esq; the Rev. Mr. Cotton, the Rev. Mr. Le Hunt, Mr. Wilmot, jnr. of Spondon, Mr. Allsopp, Mr. Meynell ... and many other Gentlemen ...'*. It was not until May 1780 that a first dividend was paid and the Trustees were forced to announce:

As the number of creditors is exceedingly great, so that it is not possible to pay the whole on one day; to prevent Disappointment, and the great Confusion that would attend too many coming together, Circular Letters will be sent to every Creditor, to inform him on which Day he must come to receive his Dividend. Every Creditor must attend himself, or send a Letter of Attorney.¹⁹

While the borough was recovering as well as it could from its losses, William claimed every farthing, keeping carefully dated accounts and recording the nature of each job. His work took him round the town and two maps particularly well describe its topography as William would have known it. One, a survey by Peter Perez Burdett, was published early in his life, in 1767, and the other, the result of the partnership of John Chatterton and John Thomas Swanwick, in 1819. Chatterton appeared before Common Hall in 1813 with a draft of the map and a request for patronage. He was voted £105 towards the costs and in December 1815 William put up '2 Stay Hooks to hang a Map on'. Map 3 shows a compact town lying alongside the River Derwent with a single bridging point, St. Mary's Bridge. Streets radiate out from a Market Place which contained the Town or Guild Hall, a fashionable Assembly Rooms newly built in 1763-64, and a Shambles, or Butchery.²⁰



Map 3: The Market Place as drawn by Chatterton and Swanwick.

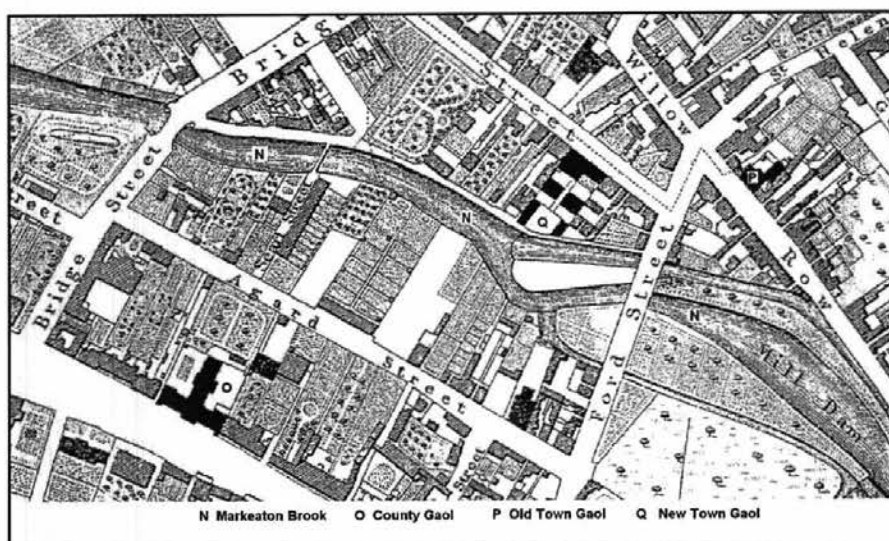
William was responsible for everyday maintenance at the Town Hall. Built in the 1730s, it needed constant upkeep and he repaired doors and windows, working alongside the Borough carpenter, Charles Finney. In 1800 to quell disturbances in the town occasioned by the economic distress of the war with France, the military were brought in and in 1802 Common Hall decided that *'The room in Common Yard be used by the military as a Guard Room and a room under the town hall be annexed as a lock up or watch house'*. In 1805, as the population continued to grow, it was decided that the town needed to enlist eight further Constables and that a room under the Town Hall used for stamping skins be converted into a Watch House for their use. In 1807 one room was converted into a Public Office for general police business and another into the town clerk's office on the grounds that in an expanding town greater organisation was needed.²¹ William maintained all of these and the Watch Boxes which were scattered about the town for the use of the Constables on duty. In 1809 a Round House was built, presumably a one night Lock-up, typically circular with a conical roof, no window and a heavy door. One at Ticknall, which still stands, was built in the same year. Where Derby's Lock-up was situated is not known, but it was substantially built. William provided *'Plates to cover the door of the new Round House - 23½lb at 8d'*, a total cost of 15s 6d, and *'three bands & 3 screws & hooks for ditto to hang the Door at 19s'*.²¹ One of his more difficult tasks must have been the maintenance of the borough gaol on Willow Row. Lock repairs were a constant necessity as was the replacement of window bars and strengthening of doors:

<i>4 bars for a cellar window at the Town Gaol</i>	<i>27½ lb at 4d</i>	<i>9s 2d</i>
<i>To 7 window bars Turned at each end</i>	<i>70 lb at 6d</i>	<i>£1 15s 0d</i>
<i>To a man half day putting on etc</i>		<i>2s 3d</i>
<i>Also fixing gaol door²²</i>		

Conditions there were so poor that Common Hall decided to build a new gaol together with a House of Correction. In 1813 plans were exhibited and funding was to be found by selling off some small parcels of

land.²³ John Welch was appointed builder and building began on a piece of land backing onto Markeaton brook, far from ideal as the brook was prone to flood. '19 June Thos Cope 2 Days & a quarter to Digging foundation and building up fence walls at new Borough gaol'.²⁴ It took two years to complete and the total bill was almost £800. William provided the iron work and Charles Finney the carpentry. The ground plan of the new gaol is marked on Chatterton and Swanwick's map. R. Simpson, in a *History of Derby* (1826), gives an extract from the Report of the Society for the Improvement of Prison Discipline in May 1823 which describes the building:

*The Borough Gaol consists of the Gaoler's house which fronts the street, into which all the windows look: behind the house are two small yards; the first about 30 feet by 18 feet; the second about 18 feet by 15 feet ... The first yard is intended for male prisoners of all descriptions. Connected by one door in this yard, are, one cell calculated to hold about three prisoners, and up stairs three small rooms for debtors: another door opens into a day room with a large cell, which might hold six or eight prisoners. There is a pump in this yard. The second yard is behind the first, and therefore considerably removed from the Gaoler's house. It was separated from the first yard about six years ago by a partition wall, previous to which time the male and female prisoners were together. Connected with this yard is one cell not fit to hold more than three or four persons, and is intended for vagrants; and a small room above it for women.'*²⁵



Map 4 : The new borough gaol c1815.

One of William's duties was to 'iron' prisoners, that is to make shackles, a combination of iron rings, bars and chains, and fit them on to legs and arms. It was not usual practice for 'Irons' to be placed on prisoners in the borough gaol and according to Simpson most prisoners were there for debt, petty thefts, assaults, disturbances, bastardy, and for being disorderly during apprenticeships, while more serious offenders were referred to the county court and imprisoned in the county gaol on Friar Gate. However it did sometimes happen. William received 1s for each leg that was 'ironed', sometimes apparently as a punishment.

8 Sept 1798	Ironing a man for passing bad money
29 Jan 1814	Ironing a man for stealing lead.
12 Aug 1815	3 leg Irons for Prisoners
	Ironing man on both legs for Picking Pockets
	Rivets for Ditto
16 Feb 1818	Taking the irons off two men
	Putting Ditto heavier on. ²⁶

The bills reveal an intrepid side to his nature, not only in the 'ironing' of prisoners but in his annual meetings with the common pastures bull. Every summer the burgesses claimed their common rights and took the Town bull into the New Pastures. William's task was to see that it was secured:

18 June 1809	A pair of Chains, 2 Loops and pins for the Bull in New Pasture - paid for help etc to put ditto on and fixing on etc	4s 6d
--------------	--	-------

Not all his work for the borough was routine maintenance. Every year he would cut a die for the seal of the incoming Mayor, chosen annually on Michaelmas day. In September 1797 he supplied 'The Mayor's Seal for Dry measure' at a cost of 6s.²⁷ Ten years later the price had risen to 10s 6d and eventually 12s. Sometimes the bill included a simple drawing, as in 1809-10, the Mayor then being John Crompton for whom he cut *IC*.²⁸

MD

Some part of his work was for the Paving and Lighting Committee, established under an Act of Parliament in 1792. Soon after it had been set up, having replied to an advertisement for 70 new lamps, William was employed to bring more light to the town's sparsely lit streets.

*Mr. Richardson under Mr. Handford surveyor to light as many lamps as may be necessary in those parts of the Town where repairs are going forward till such time as the general lighting of the Town commences ... That Mr. Harrison be employed to make as many new Lamp Irons as will be wanted for the additional number of Lamps to be lighted this year.*²⁹

A bequest in 1738 had provided money for 80 oil lamps and one to three year contracts were advertised for lighting the lamps and keeping them in repair. By 1808 there were 280 lamps, the number increasing to 420 in 1818. A Paving and Lighting ledger for 1809-1813 shows that William supplied many of the cast iron lamp posts or 'Lamp Irons' and wall mountings.³⁰ In 1812 he presented a detailed three page bill for £27 9s 6d, accompanied by another from Judd & Sons 'for freight of 4 crates of lamps':

56 Lamp Irons at 5s each.

2 Cramp'd Lamp Irons 1 for Mr Boams Wall the other Mr Strutts ditto'

Self and Man fixing the Lamp Irons up at Dr Fox's Mr Locketts & Mr Cromptons ¼ day 6s 9d.

The bill included cast iron street furniture:

*Drilling four holes in 4 cast iron posts for the railings top of Bridggate and cramps for the stone top of Bridge Gate under the rails.*³¹

He was present at a meeting in 1810 when it was first suggested that gas lighting be introduced but it was not until May 1819 that the proposal was taken further and by the time the decision was made William was dead.³²

The Water Engine

It would be some years before William would call himself an engineer, but he took on a project which required a sound understanding of mechanics almost as soon as he had started up in business. In 1698 the borough had leased to George Sorocold, a highly ingenious engineer, a small island, or Byflatt at the bottom of St. Michael's Lane, at a point where water from the Derwent could be channelled from the back of a weir. Here he set up a small building which housed a 'water engine'. This lifted water from the river and sent it to a cistern at the top of St. Michael's church tower from where it was pumped through four miles of elm pipe to conduits and taps, placed at intervals throughout the town. The pumps were powered by waterwheels which rose and fell according to the level of the river. William Hutton wrote of St. Michael's, 'Perhaps this is the most useful church in Derby, though preached in but once a month'.³³ The 'water engine' was the first such engine to be constructed outside London and of some age by the time William took it over from 'Mr. Bradley' in 1779.

*Chamberlains Accounts: 1780 5 June Received a Yrs Rent for the Water Engine to Lady Day
£3 3 0d.*³⁴

The borough perhaps felt that William lacked sufficient experience as a guide was commissioned from Charles Lakin, Derby surveyor, who produced a small book, 'The Engineer Guide to the Suffs and Pipes in the town of Derby in the Streets and Lanes from the Engine to Different parts of the town'.³⁵ The rental of 3 guineas had been fixed by deed of lease for 99 years and took no account of inflation. The income, according to the terms of the lease, was shared between three parties, one being the borough on whose land the engine stood.³⁶ Between 1807 and 1815 sums amounting to £598 19s 7¼d were paid to the Paving and Lighting Committee. What percentage William took from the profits is not known. A typical customer paid only a few pence but industrial concerns paid considerably more. Derby Crown China was a regular user. Their bill in 1788 was £12:

*pd. Mr. Wm. Harrison for ½ Yrs. Rent due to the proprietors of Derby
Waterworks at Mich last*

*£6 0s 0d*³⁷

The Coal Machine

William took on another venture which required a mechanical understanding in 1786, when he obtained the rental of the town's 'coal machine':

*Chamberlains Accounts: 1787 24 Oct Rec of Wm Harrison one year
& a half & for Coal machine*

£15.³⁸

The 'coal machine' or weighing machine, was set up on a 'rough patch of land' at the foot of Bridge Gate in 1743 by 'iron man' Robert Bakewell and Francis Moore, a joiner, to weigh coals and other commodities coming into Derby and liable to pay a toll.³⁹ William took over from 'Mr. Simmons' who had held the contract at a rent of £6 a year in 1786. Only one reference has been found to the way it operated:

1787 Derby Old Machine - Directed to Fisher - Note from William Harrison - half a Hundred in each Ton is allowed for Drafts etc'.⁴⁰

When plans to rebuild St. Mary's Bridge were drawn up, the weighing machine had to be moved as it stood in the path of the proposed new alignment. In 1790 Thomas Crayne, borough chamberlain and clerk of works, estimated that it would cost £14 0s 0d to dismantle and reassemble the weighing machine though the final cost was £40: it is presumed that William carried out this work but no bill has been found.

For takeing doen the woodwork of the Building and the Machinery of the Weighing Engine and fixing the same again upon the present plan. Makeing the roof ready for lathing and the Engine ready for weighing, the whole to be done in as Substantial a Manner as the Materials will admit⁴¹

Bridges

Samuel and Nathaniel Buck's *The East Prospect of Derby* gives us a view of the 'old' seven arched bridge though Woolley tells us that it had 'nine arches well built of stone'.⁴² The narrowness of the bridge was a major issue and calls from the growing number of industrialists who were setting up in Derby were answered by a traffic survey in 1787-8 which found a need for a new bridge. A Commission was set up obtain an Act of Parliament and to raise money by canvassing subscriptions as it was beyond the town's means to build one out of its own funds. With Thomas Harrison of Chester selected as architect, one of several applicants who presented estimates of about £300 for their services, and plans approved for a three arched bridge, excavation for the pier foundations began in 1789.⁴³ There was an immediate problem as the ground on the east bank proved to be unstable. A file amongst the St Mary's Bridge papers includes several bills for money spent on solving the problem.⁴⁴ One payment from the Committee of St. Mary's Bridge to Sam. Lister and John Stanley, the stone masons, dated 15 to 24 April 1790, concerns 'extra work in the East Pier'.

The problem was tackled by means of wooden piles, each a hefty 12 in. sq. which, as William's bill for ironwork shows, (Fig 2 overleaf) were fitted into metal 'pile shoes' and hammered into the ground, the wood protected from the hammer blows by a metal sheet or 'tup'. Although the bills are only indicative they suggest that the piles (William provided shoes for 103) were used to create a water tight building area on the river bed from which the water could be extracted by pumps, allowing the workmen to dig down to a firm foundation upon which the pier could be built. One bill claimed payment for a team of labourers who had spent the equivalent of 173 days at 1s 9d a day at the work.⁴⁵

This was not the only work William did for the Bridge Commissioners as he was paid £39 7s 0d in July 1793, possibly for the weighing machine but perhaps for some other iron work, the lamp standards on the bridge for example for which no bill has been found.⁴⁶ Other buildings which stood on the proposed new alignment were an old Rope Walk and the house of Mr. Deveril, a miller. A replacement for this was built in 1789 on the east bank which still stands as The Bridge Inn.⁴⁷ William supplied the kitchen range, yet another string to his bow:

*10 Mar - Barr & 3 links to Lay in a Chimney for a house for Mr. Deveril 43½ lb at 4d 4s 5d
20 Mar - 2 Lotts of fire bars 12½ lb at 3d 3s 1½d*

When the old bridge and three small houses which stood on it were demolished, the 'bricks, stones, timber and other materials' were advertised for auction at the Fox and Owl Inn on Bridge Gate. Why William bought this lot can only be conjectured but a note about the auction survives amongst the Canal Company papers and at the foot, after the Conditions of Sale which included a deposit of £2, is added 'Mr. Wm Harrison £28. 0. 0 Last bidder at same. Received £3. 3. 3 on acct'.⁴⁸ The bridge had been scheduled to open in 1792 but further problems set it back two years and the date carved into the west pier is 1794. The total cost was well over

estimate of £3500-£4000 and the need for further subscriptions was advertised in the local press.⁴⁹

1790 Commissioners for St. Mary's Bridge		
To Wm. Harrison		
April 15	Nails for the top	1 lb 6
	putting the hoops on do	1 lb 2
	12 pile shoes	1 lb 13 8
	Nails	3 at 6 in 1 6
	a pair	6 6
16	hooping a mass	6 4
	2 screws & 3 washers for the top	1 4
	Double ten	6 4
17	36 pile shoes	13 1 at 2 3 8
	Nails	4 6
22	a plate & nails for the top	1 0
	2 ferrets	0 2
	Double ten	6 4
	21 Double bottom for the pumps	2 0
	51 pile shoes	18 0 at 2 3 0 8
	Nails	1 lb at 6 in 7 0
23	6 pile shoes	2 1
		7 16 0

Fig 2: William Harrison's bill for £7 4s 0d for the ironwork.. (courtesy of DLSL)

William had to provide the borough with 'pile shoes' for bridge repair on several occasions as the Markeaton Brook, a tributary of the Derwent, ran through the central streets of Derby and was crossed, in Woolley's day (c1712), by 'eight or nine' bridges, some of timber construction and others in stone. During the 18th century timber was gradually replaced by stone but even a stone bridge could be destabilised when the brook was in flood. In 1787-8 Sadler Gate Bridge was rebuilt but only ten years later, after a severe flood, William was providing 28 pile shoes and a hoop for its repair. In addition he made a gate out of old railings.⁵⁰

9 July	Making a Gate of old pallisadoes for the Sadler Gate Bridge	9s
	A lock to ditto	3s 1d
	Self hanging ½ day	2s 6d

The Derby Canal

Soon after St. Mary's Bridge was built, William obtained a contract with the Derby Canal Company. The River Derwent had been made navigable to the Trent by Act of Parliament in 1719 but the river was subject to the vagaries of weather and in 1793 the Derby Canal Company was set up by another Act. A cut from Derby to the Trent was planned, with a junction to the Erewash canal. Plans also included a three mile branch canal heading north out of Derby to Little Eaton and from Little Eaton a tramroad was to be laid to convey coal and other heavy commodities to Derby from mines and quarries to the north. With Benjamin Outram as engineer, the first section from the Erewash to Derby, together with the Little Eaton branch, was opened in 1795. The canal was fully opened in 1796 with the completion of the line south from Derby to Swarkestone where the route crossed the Trent & Mersey Canal on the level and dropped down through four locks to the River Trent. The Act had included authority for the Company to buy out the River Derwent Navigation and this was done.

A set of Minute Books in Derby Local Studies Library make numerous references to 'Mr. Harrison' who is not

however the subject of this essay as he was a Derby solicitor and an agent for the Company. In lists of 'Bills to be paid' are entries for 'William Harrison', a neat social distinction. From 1798 until his death he worked for the Company, receiving sums ranging from £1 to over £55. These payments confirm that he was employed but the nature of the work is not given. However, a letter from his sons John and William when tendering for the contract after their father's death, explains some of the work:

Gentlemen

In reply to your request we beg to say we will engage to do all the Iron work for the Company on the following terms. Viz. Lock Gate plates T's and L's Breast plates Collars Gang nails and spikes at 4^d per lb. Screw Bolts above one pound weight each and all other work whatever 6^d per pound. The whole of the best iron and as good work as can be made ...

One other opportunity for employment came from the weighing machines set up by the canal at the east end of St. Mary's Bridge and at Cockpit Hill, on the Morledge, something that William was well qualified to build and maintain. Once built they were offered to rent and William Harrison and Joseph Hudson obtained a year's contract for the first at £30 a year. The Cockpit Hill machine was let to Joseph Eley, a blacksmith.⁵¹ In 1802 William reported:

that he had seen the state of the Machine on Cockpit Hill and that coal cannot be accurately weighed thereon and that it will inevitably break down as long as the Table works only upon three Centers and the other Centre is gauled and spoiled and that all the wood work is rotten and will not bear the Centres.

Repairs were ordered and in 1806 Eley gave up the machine.⁵² Williams' report suggests that the platform was made of wood, perhaps mahogany, and not dissimilar to the cart weighing machine of Birmingham inventor John Wyatt in 1741. William had a better solution:

I William Harrison having this day attended the Committee and having proposed to erect a weighing machine at Little Eaton for a sum not to exceed Eighty pounds upon a new construction by introducing Iron work instead of wood and to agreeing to guarantee the improved principle of this new machine to answer equally with machine of the old construction for the term of seven years and if any of the Cast Iron or wrought Iron work should fail that time he agrees to replace it at his own expence Ordered that the weighing machine upon this construction be made as soon as possible and that Mr Walsh be applied to for an estimate of the Expence of the building for this machine.⁵³

After some delay the machine was installed in mid 1809. William did not claim this as his own invention but he was in the van of new technology and looking for engineering solutions to problems and new ways of using iron. He received almost £90 from the Company that year and was making a steady income from his 'iron work'.⁵⁴

The new Bridge and Canal increased Derby's attraction to industrial entrepreneurs and leading the way was William Strutt from Belper who built a large fireproof cotton spinning mill in the town and came to dominate its political and social life. Strutt was a driving force behind both projects. As a Unitarian, he was on the opposite side of religious and political beliefs to William but the latter's expertise in metalcraft may have brought them together in a working relationship, evidence for which is still being sought.

Derby Crown China

William did however have dealings with William Duesbury at Derby Crown China. The potworks had been set up on the far side of the Derwent, by the side of the Nottingham Road and only a short distance from St. Mary's Bridge, by William Duesbury and partners in 1756-7. It was at about the same time that Josiah Wedgwood set up his potworks in Burslem, Stoke on Trent and both enterprises were experimental and surrounded in secrecy. This secrecy was maintained by William Duesbury II who succeeded his father in 1786 and who obliged his workforce to swear oaths not to impart any secret knowledge to the outside world.⁵⁵

When William first became involved with the Duesburys is not known but, as previously stated, there were contacts through the payment of bills for use of the weighing machine and water supply. William probably also provided many of the blades and tools needed in the shaping and finishing processes. The evidence is slender: an envelope addressed to 'Mr. Harisone Edge Tool Maker Bridge Gate' in 1794 enclosing a letter from Duesbury II's younger brother James asking William to act as an intermediary, James having become estranged from his

brother through unruly and often drunken behaviour. The letter, which must have been passed on as it is amongst the Duesbury papers, suggests a more personal relationship. It begins:

You will excuse me being so troublesom in Pestring You with Letter after Letter But you rote in Your Letter to me that you wold be over in a Day or tue ...

William was also in some way involved in trials carried out by Duesbury in 1790, but the secrecy surrounding these trials and the partial correspondence make it impossible to do more than hazard a guess that they related to the firing process. Letters from the Foulghams, ironsmiths of Nottingham, to Duesbury II in January 1790 refer to William and come with a set of diagrams. Perhaps the desire for secrecy accounts for the approach to ironsmiths in Nottingham rather than Derby:

... we suppose what you want is a Box of Cast Mettle for a Screw to Act in - which we make Very Often for the Whitesmiths in this Town. And Probably May have done for Mr. Harrison of Derby.

You must get a Pattern turned of wood Such a Size as will admit of Mettle Sufficient Round the Screw to hold it fast which Mr. Harrison Can inform You -

*You then say Something of a Cylinder you want Please to let us know the Size & thickness You wish to have it ...*⁵⁶

Some extra light may be thrown on this from an oath sworn by the kiln men in November of the same year which refers to the construction and use of a machine invented by Duesbury, intended to exhibit the contraction of earthen bodys when heated. However the evidence is flimsy and there are other possibilities. An oath sworn by Thomas Mason on 22 December 1792 promised: *'To use my utmost caution at all times to prevent the knowledge transpiring that I am imploy'd to use a stop watch to make observations of Work done in Mr. Duesbury's manufactory ...'* A note on the reverse refers to a visit by 'Mr. Fox' who asked 'how have you got on ...' and on being told that a flint had broken and asking 'Where is it broke' was told 'The outside the Flint down to the Cylinder (meaning the Castmettle Cylinder that enclos'd the Flint) ...'.⁵⁷

Whatever their dealings with Duesbury, Joseph Lygo, his London agent, wrote from London in July 1795:

*... items sent by the waggon ... I have had two bills for payment which you have not advised me of one was for 4l. 6. 8 in favour of W. Harrison and the other for 20. 6. 0 in favr of J. Fox.*⁵⁸

A word needs to be said of James Fox (1760-1835). Fox came from Staffordshire to Derby in the service of Rev Thomas Gisborne who, realising that he had a special skill in building machines, helped him to establish a small enterprise on the east bank of the Derwent a few yards from the Bridge Inn.. He first built a machine for the burgeoning lace industry and began to build steam engines to designs of Boulton and Watt. As his enterprise grew he also built planing machines, boring, turning and screw-cutting lathes and a machine for cutting and dividing wheels. William was 'on the doorstep' and no doubt he soon became one of Fox's customers.⁵⁹

Dr. Erasmus Darwin

Dr. Erasmus Darwin (1731-1802) came to live in Derby in 1781, setting up house and medical practise at No 3 Full Street, backing onto the Derwent. He founded the Derby Philosophical Society in 1783 and his radical political beliefs were far removed from William's patriotic toryism. Darwin was a scientific thinker whereas William was a practical mechanic but it was the latter's skill as a whitesmith that brought the two together in a medical experiment to rectify curvature of the spine in young women. He describes his purpose in *Zoonomia*, written in four volumes between 1794-96.

*Another great cause of injury to the shape of young ladies is from the pressure of stays, or other tight bandages, which at the same time cause other diseases by changing the form or situation of the internal parts. If a hard part of the stays, even a knot of the thread, with which they are sewed together, is pressed hard upon one side more than the other, the child bends from the side most painful, and thus occasions a curvature of the spine. To counteract this effect such stays, as have fewest hard parts, and especially such as can be daily or weekly turned, are preferable to others.*⁶⁰

One solution he put forward was a kind of metal headpiece to be worn whilst sleeping. He called this a 'steel bow' and confessed 'This bow I have not yet had opportunity to make use of, but it may be had from Mr. Harrison, whitesmith, Bridge-gate, Derby'. Fig 3 shows this most uncomfortable piece of apparatus and it seems very unlikely that any young lady would be prevailed upon to use it. However it illustrates William's ability to

improvise and he may have been of use to Darwin in other ways, now lost to us.



Fig 3: Erasmus Darwin's 'bow'.

As Darwin lived by the Derwent he would have had an interest in William's maintenance of various flood gates along the river. One, close to St. Mary's Bridge is referred to in 1743 and was probably the work of George Sorocold.

*WHEREAS the Water in the Mill Dam, near St. Mary's Bridge DERBY, was let out into the Road going to Little-Chester ... and by drawing up the Shuttle of a Flood-Gate near the said Bridge, Who will give information of the Person or Persons, who drew the same, to Thomas Bennet at the Silk-Works in DERBY aforesaid, shall receive One Guinea Reward, on Conviction.*⁸¹

During 1798 William twice repaired flood gates:⁶²

22 Apr	four screw pins for a flood gate	5½ lb at 7d	3s 2½d
15 Nov	Self & man putting in the screw at the flood Gate at Doct ^r Darwin's Close		1s 6d

Kedleston Hall

It may be that his part in setting up the Loyal True Blue Club led to his employment by Lord Curzon of Kedleston Hall. In May 1814 he was at the Hall:

'Polishing and Repairing a Brass Grate in the Egyptian Hall By taking it all inpieces, and all the Brass beading off. Polishing the steel work & setting on the Brass beading again. Some new beading & Repairing Brass work'.

The Egyptian Hall is now more usually referred to as the Marble Hall and the brass grate would be one of four, designed and installed by Robert Adam. William also worked on the kitchen fireplaces, fitting a large Cradle spit with an iron wheel and later, in December installed: '2 Iron wheels to 2 spits 4 Screw stops collars & making the spits to fit the wheels. On Christmas Eve he was back again to fit a 'New Spit with a Wheel'.

He spent several days at Kedleston in May, working in the kitchen and the Bath House. Subsequently he returned virtually every month that year, to work on fireplaces and fitting the kitchen up with utensils and tools such as a 'Large Cleaver', a fire shovel, tongs, '6 Hooks to hang meat on', and double edged choppers with bone and wooden handles. He also repaired a pump, a water cock and a fountain. Unfortunately there are no more Harrison bills until 1823, when his son John also worked at the Hall.⁶³

As seen from this postscript to an advertisement in the *Derby Mercury* for the sale of a turner's lathe William was now looking towards the local gentry for orders:

For further Particulars apply to Mr W. Harrison, Bridge-gate Derby; of whom may be had, Lathes of every description to order; - Smiths Work, for Corn Mills and all kinds of Machinery, Iron Fencing for Parks or Pleasure Grounds, Pallisades etc etc at the shortest notice. Derby August 16th 1814.

It would seem that William was successful in attracting gentry clientele as two years after his father's death, John, having taken over the business, finished a long advertisement with a postscript: 'NB - J.H. having already

fitted up some of the large Establishments in the Kingdom, he flatters himself that he shall be enabled to give satisfaction to those who please to favour him with their commands.' John may have been referring not only to kitchens and railings for 'parks and pleasure grounds' but to a more ambitious project, the heating and ventilation of houses and greenhouses.

Some 30 years or more ago, during a visit to a car wrecking yard in Nottinghamshire, Mr. Brian Palmer found a curious circular disc which he recognised to be a valve or regulator such as might be made for a hot air heating system. It was inscribed on one side, *W. Harrison Engineer Derby 1818* and on the other *J^{NO} HARRISON ENGINEER DERBY 1824*. (see Part 2, John Harrison, forthcoming). In 1810 the Derbyshire General Infirmary had been erected and heated by hot air, an invention pioneered by William Strutt in his own home, St. Helen's House. It would appear that the Harrisons had begun to embark upon a similar project of their own.



Fig 4: Regulator inscribed 'W Harrison engineer Derby 1818'.

Mileposts

One of William's last ventures, and one which would ensure that the name Harrison would still be remembered to this day, was to obtain contracts to set up cast iron mileposts along Derby's increasingly busy toll roads. A Minute Book from the Turnpike Trust which managed the road from Derby to Nottingham survives from its construction in 1759 to 1794.⁶⁴ The road was laid down from Grantham through Bottesford and Bingham to Nottingham (the 1st Division) and from 'Chapel Bar near the West End of the Town of Nottingham to St. Mary's Bridge in the Town of Derby' with a branch from 'the Guide post in the parish of Lenton to Sawley Ferry' (the 2nd Division). The Minute Book (C) covers the proceedings of the Second Division. In 1808 an advertisement was placed in the *Derby Mercury* for a contractor to keep the road clean and refers to 'milestones' implying stone markers.⁶⁵ At the General Quarter Sessions of the Peace in 1812 an order was given that '*that proper and sufficient Direction Posts be erected and set up on all the Public Roads in this County, where several Highways meet. And the Magistrates within their respective Hundreds are requested to give Orders to the several Surveyors of the Highways Accordingly*'.⁶⁶ This may have spurred some Turnpike Trusts to replace milestones with cast iron posts. The Minute Books subsequent to 1794 are missing but an account book for the Second Division survives from 1759-1842. Entries for works carried out are largely confined to the procurement of gravel and stones but on 28 August 1818 there is a single entry '*To Harrison £20*'.⁶⁷ No reason is given but this is the only time Harrison appears in the accounts while the mileposts along this road, almost all still in situ, are all inscribed 'HARRISON DERBY'.

Harrison bobbin head mileposts also once stood along the route from Derby to Burton. Only one now remains, out of place on Green Lane in Derby City Centre, almost a mile from its original site. Until it was stolen in 2005 another was still standing two miles from Burton, within Staffordshire. It was an unusual milepost because instead of the customary HARRISON DERBY down the post, the initials W H were placed horizontally above

DERBY.⁶⁸ Taken with the entry noted above, and the fact that John Harrison inscribed his mileposts J Harrison Derby, it seems reasonable to argue that the mileposts along these two roads were William's work.

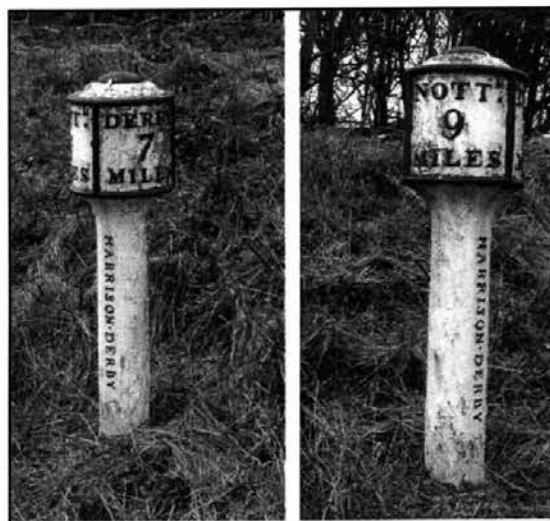


Fig 5: 'Harrison Derby' is inscribed in large capital letters on the post and the distances from Derby and Nottingham on a rounded bobbin or drum head.

One HARRISON DERBY bobbin post still stands on the Derby to London Road, at Alvaston, and several along the Derby to Duffield road. A search of surviving records has not yielded any information on these but they have clearly been cast from the same mould. From the edge of Duffield a road diverts to Wirksworth and the mileposts here are triangular with 'J. Harrison Derby' inscribed on the left base.⁶⁹ The milepost in Derby from which distances were measured - London 126 miles:- once stood where the Cornmarket abuts the Market Place and is visible in pre-1940 photographs.⁷⁰ The survival of these bobbin posts, some of the earliest cast iron mileposts in the country, is fortuitous: as the majority were removed during the Second World War to baffle potential German invaders.

The Workforce

William could not have carried on his varied business without a team of craftsmen and labourers but bills show that throughout his life he still personally carried out many tasks. He charged his customers 5s for his own service and 4s 8d for a man per day.⁷¹

1798 April 21	Self & man cleaning & oiling all the Gaol Door Locks and hinges	5s
1814 April 29	Self oiling all the prison locks	2s 6d

There are no work sheets or account books to show how much of the 4s 8d a man received. However, it was a good wage at a time when a labourer might earn 1s 6d at best. Occasionally a workman is identified by name:⁷²

1818	J. Brunt at cleaning & oiling all the Town Gaol locks fitting the doors	
	Raising them on the hooks 2½ days at 4/8	11s 8d

From 1798 to 1810 William employed Leonard Lead, a Shropshire man from a family of charcoal burners as his clerk. Lead had moved in search of work first to Staffordshire and then to Derby in about 1790. He worked for William Duesbury for a time, providing charcoal for the China works but after the opening of the Derby Canal Duesbury changed to coal fired kilns and Lead moved to potworks in Pinxton before finding new employment with William. In 1810 he took alternative employment with the Canal Company as a toll keeper.⁷³ In the same year, William took on an apprentice from Moore's charity named Benjamin Holus, son of Amy Holus, widow, a poor child of All Saints parish and the charity paid for the boy's seven year apprenticeship.⁷⁴ A concern for the welfare of the poor might have been his motive. Soon after coming to live in St Alkmund's parish, in 1782 he took a seat on the Vestry Committee and became a Trustee of the parish poor land at Little Chester. He served as an Overseer of the Poor in 1792-3 and again in 1808-9 though he was never a churchwarden.⁷⁵ The Loyal True Blue Club also had a beneficent side to its activities.

William and his sons

By 1808 John had been admitted a burgess and was working with his father.⁷⁶ When William wrote his will on 1 October 1812, seven years before his death, John was bequeathed '*all my working Tooles and implements of my business and all the stock of unmanufactured Iron of which I shall die possessed*' ... '*and also permitting my son John Harrison to hold use and occupy the workshops and buildings used in my business of a Whitesmith and also the yard in which they stand as the same hath heretofore been used by me*' ...'. John was however to pay an annual rent of £16 to his mother to whom the property was left.

The younger son, William Jnr, who like his brother became a burgess in 1810, did not follow his father's trade but a loan of £500 from his father enabled him to set himself up as a draper, in a shop on Queen Street in St. Michael's parish.⁷⁷ By 1818, if not earlier, William Jnr was keeping his father's accounts. In February 1819 his father's bill for £18 14s 0d was paid to William along with a small bill of his own.⁷⁸

His Achievement

William died a wealthy man with a prosperous business to hand on to John. In his will he valued his house with its shops, outbuildings, gardens and other houses at £1200 which sum John was to divide between his brother and four sisters within six months of his mother's death or remarriage. A codicil to his will, added in March 1819 a short time before his death, reveals that he had purchased '*of Robert Holden of Darley next Derby aforesaid Esquire A piece plot or parcel of Land or Ground situate lying and being near St Mary's Bridge in Derby aforesaid with a workshop standing thereon which I have converted into Two messuages or Tenements now occupied by John Brunt and John Dorrington*'. This he left to his wife; his main concern was to provide for his wife and his three unmarried daughters.

In 1818 the Common Hall decided to sell off more small pieces of land and William purchased one of them, a '*small warehouse and piece of ground near St. Mary's Bridge*' from the borough for £210 where he established a boiler works.⁷⁹ The ground was on the north east side of St. Mary's bridge adjacent to the Bridge Inn, at the time a private residence. It had the advantage of being close to the entrance to the Derby canal, handy for exporting heavy goods down to the Trent.

William had set up in business at a time when there were only four whitesmiths in the town with the particular advantage that he was a freeman.⁸⁰ He had lived through some difficult times of war and economic ups and downs but he had prospered through careful accounting, reliability, ingenuity and versatility. After his death his total estate was valued for probate at close to £4000. He died in August 1819 and was buried at St. Alkmund's church on 27 August.⁸⁰ He named Elizabeth, his wife, and Thomas Symons as joint executors of his will. When the will came to probate he was described by his executors as '*engineer and whitesmith*'. John took on partial responsibility for winding up the estate, claiming any monies due and paying any debts. His brother William decided to give up his drapery business and join the family concern.

Mr. WILLIAM HARRISON, DECEASED

*All Persons indebted to the Estate and Effects of the late Wm Harrison, of this Town, Engineer and Whitesmith, deceased, are requested to pay the same to Mr. Thomas Symons, one of the Executors, or to Messrs. John and William Harrison, at their Office in Bridge Gate. And all persons having any Demand upon the Estate of the said late Mr. William Harrison, are requested to send the Particulars thereof to the said Executor.*⁸¹

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