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## EDITORIAL

### **Broseley Local History Society**

The Society was originally formed as the Wilkinson Society in 1972 and was renamed in 1997 to reflect its main purpose:

‘the research, preservation and promotion of Broseley’s unique heritage’.

Meetings are held on the first Wednesday of each month beginning at 7.30 pm, at Broseley Social Club; and annual events include a summer outing, an autumn walk and a winter dinner. Members receive a quarterly newsletter and an annual journal. The Society’s collection of artefacts is at present in storage, with some items on display at Broseley Cemetery Chapel.

The Society has a web site which contains information about Broseley, copies of the newsletter and articles from previous journals. This can be found at *www.broseley.org.uk*

### **The Journal**

The journal is published annually. The three articles in this issue represent the ongoing research of Society members and others, and we are grateful to individual contributors. Our thanks also to Steve Dewhirst for design and typesetting.

Contributions for the next issue would be welcome and should be sent to the editor, Neil Clarke, Cranleigh, Little Wenlock, TF6 5BH.

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## The Early River Severn Trade in “Broseley” Tobacco Pipes

by Peter Taylor

*The research for this paper was partly funded by a grant from the Society's Research Fund.*

The clay tobacco pipe industry of the Broseley area has long been recognised as being of national importance and has been studied by scholars since the nineteenth century. The logistics of the trade, however, has often been overlooked in favour of the study of the pipes themselves. This article will attempt to redress the balance, in some very small way.

The precise origins of the industry in the area are unknown although it was the location of the outcropping clay seams that were undoubtedly important to the earliest pipemakers. Pipeclay was easily obtained at Benthall Marsh, where it could be dug clandestinely from the roadside and was also found in the Old Park on the Willey Estate. John Weld noted in 1631 that clay suitable for making tobacco pipes was to be found in Shirlett, suggesting that the industry was already established by this date, although the earliest documented pipemaker so far identified is George Deakin. He was living at Lawleys Cross in 1640 when he was prosecuted at the Wenlock Bailiffs Court for withholding payment of £3 from his account with a Bridgnorth mercer, the debt dating back to September 1637.

It is perhaps notable that in the six hundred or so probate inventories that survive for the Gorge during the period prior to 1760, that there are no examples of a Broseley pipemaker owning a horse or the packs that would be needed to carry merchandise around the local area. It would seem that pipes were either distributed on foot or that production was sold to hawkers and pedlars. This absence of pack animals is not found in Much Wenlock inventories where husbandry was much more common and where most early pipemakers also owned horses. In 1659, the pipemaker Morris Deacon complained to the same court at Much Wenlock that he could not trust his apprentice while he “went out about his occasions” and his inventory in 1673 included two pack saddles.

The road network was essential for distributing pipes and Broseley was linked to both the river port of Bridgnorth and the medieval bridge at Buildwas, the safest place to cross the River Severn. The embryonic pipe making industry, centred just as much around Much Wenlock as

it was on Broseley, sent pipes overland to the River Severn at Bridgnorth rather than by the perilous route over Benthall Edge and down to the river below. Despite the considerable fleet of trows and barges working from the Severn Gorge, 139 were counted in 1756, the nature of the coal or limestone trade meant that these trows were not suitable for carrying other, more delicate, cargoes. These trows would sell their bulk cargo at the first opportunity before returning upstream to the Gorge for the next load as the cargo was often bought on credit.

Despite the pipe industry later consolidating around Broseley, this customary route to the river, via Much Wenlock to Bridgnorth, continued in use. There were many familial links between the trowmen of the Gorge and those of Bridgnorth and the mixture of long distance and short distance trades worked by the Bridgnorth boats would have suited the pipemakers. It also seems clear that as the market for pipes expanded beyond the immediate locality, pipes were sold or hawked to the trowmen at Bridgnorth as they were subsequently carried down-river at the trowmen's risk and never carried on the account of any known pipemaker. The constant supply of pipes passing through the town meant that Bridgnorth did not develop its own pipemaking industry with Richard Jewkes of Astley, who was made a burgess there in 1757, the earliest pipemaker so far identified.

The main surviving documentary sources for river transport are the returns sent annually by the port of Gloucester to the Exchequer. Although the city had achieved full customs status in 1580, its trade remained overshadowed by the river ports further upstream which came under its jurisdiction. Nationally, over three million voyages are recorded in the "Port Books" and the names of the masters and merchants and their cargoes are recorded in some detail. At Gloucester, these records were more fastidiously kept than at most other ports. It should be emphasised that only voyages passing through Gloucester were recorded unless they were going from Gloucester to the "open sea" – a journey from, say, Bridgnorth to Gloucester would have been regarded as a movement entirely within the "port" of Gloucester.

It should be explained that the river trows couldn't just sail wherever they wanted, whenever they liked. Any trow wishing to sail downstream from Broseley or Bridgnorth had to wait for a sufficient depth of water in the river. Heavy rainfall in the Welsh mountains could produce a sudden rise in water levels of over a foot and the

heavily laden coal trows would wait for this “fresh”. As many as 80 trows would all leave as the water rushed through the Severn Gorge. Steering would have been mainly by “sweeps”, long oars used at the stern of the vessel, or by using the very large rudders. Sail may have been used as well if the wind was in the right direction. The journey upstream had to be timed to coincide with the tides, the higher the spring tide, the further up the Severn this would be of assistance. The gradient of the river changes dramatically just upstream of Worcester and this is where the influence of the tide is lost. It is fortunate that the prevailing winds were usually south-westerlies, precisely the direction needed to sail up the Severn, however there were times when the wind was against or the trows were operating beyond the tidal limit of the river. To haul a trow up-river against the current was achieved by physically dragging the vessel, not, as in the late nineteenth century with the use of horses on specially made tow-paths, but by the physical exertions of teams of men called bow haulers working from the river bank.

In the nineteenth century, trows were often worked “by thirds” and this is a system which may well have been in place during earlier centuries. A third of the freight income would have been retained by the owner of the vessel. The other two thirds went to the master, from which he had to engage and feed the crew. This left the master with around a third for himself although a trowman could increase his earnings by owning a share of the vessel or by commercial dealings on his own account. While the higher value cargoes were beyond their means, trowmen certainly dealt in the more petty commodities. A reference in the Parliamentary Rolls of 1411 to trowmen of the region of Bewdley and the “County of Salop” forming “a confederation for their own private profit” shows a desire to control trade on the river and a Watermen’s Guild is recorded as being in existence by 1701 at Bridgnorth. As no records survive it is impossible to gauge the effectiveness of any collective action or when the guild itself ceased to exist.

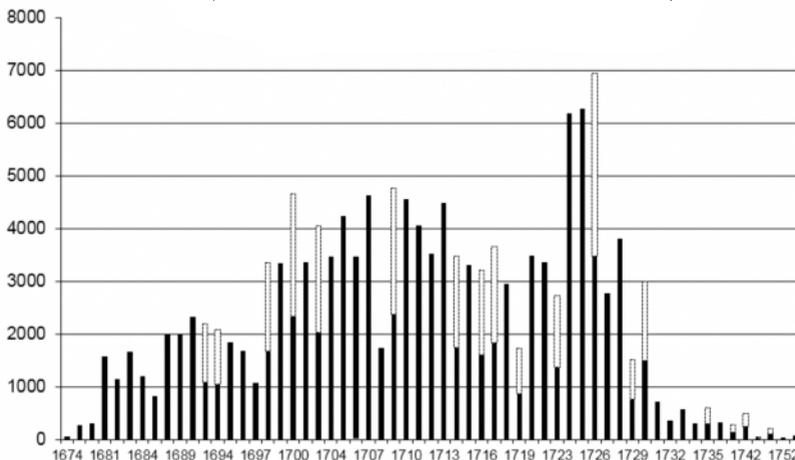
Bridgnorth had a high number of coopers in the town and it would seem logical that Broseley pipes would have been packed into hogsheads there as they would have been awkward to carry overland by packhorse from Broseley or Much Wenlock if they were already packed this way. Most writers make the assumption that because Samuel and Thomas Claroe operated vessels “of Upton” and handled more pipes than anyone else, Broseley pipes must have been

transhipped in that town. However the larger warehouses at Tewkesbury and Worcester are alternatives. It would have been perfectly feasible, given the south westerly prevailing winds and strong spring tides, for the *Claroes* to sail or be hauled empty from Upton to Worcester, especially as river trows did not need to carry ballast. The *Claroe's* regular master, William Jefferies, lived in Tewkesbury. At what point did he take control of the vessel? There is evidence that despite William being listed as master of the *Thomas* of Upton that Thomas *Claroe* routinely accompanied him. Why would a trow, albeit a large open trow, require two masters? Perhaps Thomas was happier sailing the trow on the middle Severn but less happy about the prospect of the open waters of the Bristol Channel. Perhaps Thomas was more interested in merchandising the goods carried on his own account personally, certainly he seems to have had a freer hand in the smaller non-contracted cargoes. Pipes were undoubtedly carried on his account and given his experience of tramping the South Wales coast; he presumably had many contacts in ports like Chepstow, Cardiff and Newport. Despite being the largest handler of tobacco pipes on the river, Thomas *Claroe* was primarily involved in the salt trade, often carrying for Hoare and Company of Bridgwater. Upton boats' main cargoes all came from upstream sources, namely Droitwich (salt), Broseley (pipes) and the Wyre Forest (chairs).

That the Bridgwater merchants used Bridgnorth boats to collect salt from Droitwich shows the strength of the familial links that dominated river trade. The ancient salt road from Droitwich to Worcester was turnpiked in 1713 and the cost of transporting the salt the seven miles to the river by packhorse was said to be equal to the cost of the whole river journey to Bristol. It therefore seems unlikely that Droitwich salt would have been carried the twenty miles overland to Upton. There also seems little need to tranship pipes there when they could be collected just as easily from Worcester. The number of Wye trows collecting Droitwich salt and returning with pipes would also have no need at all to stop at Upton. At least 18 makers of Broseley-type pipes, working before 1750, have been identified from finds in the Monmouth area and it seems unlikely that every one of these Broseley pipemakers had connections with the town but rather this would seem to confirm the suggestion that deliveries of pipes were an amalgamation from many different makers. It is likely that pipes were transhipped at all of the towns on the middle Severn and certainly those accompanying salt cargoes from Droitwich are most likely to have been transhipped at Worcester.

The ability of the river trows to increasingly venture further out into the Bristol Channel was probably due to a combination of greater competition, widening markets for salt and, possibly, improvements in vessel design. What is clear is the pattern of gradual geographical spread of pipe cargoes south of Gloucester from the 1670s onwards. Broseley pipes are first recorded as reaching Cardiff in 1674, Bridgwater and Minehead first seeing up-river pipes in the 1680s, Swansea in 1698 and Carmarthen in 1705. Even Padstow received pipes in 1716, merchanted by John Okes using the *Speedwell* of Worcester. This was probably the Bridgnorth trowman trading transhipped pipes on his own account. The almost complete lack of Broseley pipes found in cities like Bath suggests that pipes were rarely carried far overland but were distributed via the various river systems, the River Avon not being made navigable there until 1727. Broseley pipes found in Gloucestershire tend to be close to the various tributaries that flow into the Severn. The number of voyages containing pipes going upstream bound for Gloucester or beyond was insignificant and it is clear that Bristol did not have a market for its pipes in any of the River Severn ports even in the period before Broseley production was traded as far south as Gloucester. This was due to the vicarious nature of Bristol's coastal trade where ship owners did not operate any regular trows or barges. While the Bristol pipemakers enjoyed access to the

*Chart 1. Gross of Pipes passing downstream through Gloucester 1670-1760  
(Source Gloucester Port Books Database)*



city's considerable fleet of overseas vessels, this was not the case for coastal and inland river traffic.

The volume of the River Severn trade in pipes has never been fully quantified before and some methodological issues were encountered in producing the figures in Chart 1 below. Each Gloucester Coastal Port Book, from 1685 onwards, contains six months of data, therefore for some years only one book survives. Where this is the case, the annualising of figures, by doubling the recorded amount, is indicated by the unshaded portion in Chart 1.

Some of the peaks and troughs in the figures in Chart 1 can be explained, but not all. The lack of trade in pipes in 1697 was as a result of the imposition of crippling duties between May 1696 and the end of July 1698. The reason for a similar decline in 1708 is currently unclear. The main quantification issue encountered in producing these figures is the large number of units of measurement that are recorded in the Gloucester Port Books, despite being official Exchequer documents. On only two occasions are precise quantities recorded, one being the 4,320 pipes going to Carmarthen in 1718 on the *Ann and Sarah* of Worcester although it should be emphasised that 70% of all entries are recorded in gross. While there is evidence that pipe moulders were paid at rates of anything up to 18 to the dozen to allow for breakages, no such allowance was made for carriage by river. The 1675 Book of Rates confirms that tobacco pipes for export were to be charged rates based on the value of 1s per "small groce containing 12 dozen" although this was a notional valuation and didn't necessarily reflect the true value of a cargo. As far as the pipemaker was concerned, the pipes had already been sold and the risk of damage in transit had already been passed on to someone else.

Some entries use other units of measurement and these are enlightening. In 1705 the *Fortune* of Upton carried pipes packed in 11 hogsheads, 30 casks, 40 frails and 2 trusses for Cardiff and Minehead. A frail is a rush basket usually made for holding raisins, figs or sprats while a truss was a measurement of straw or hay, being defined as 36 lbs of straw, 56 lbs of old hay or 60 lbs of new hay. This suggests that customs officials at Gloucester were sometimes happier estimating the volume of packaging material rather than the number of pipes within it. It is probable that the use of this cheap form of packing occurred throughout the whole history of the industry. It is not a coincidence

that in 1883, Roland Smitheman's pipe works in Broseley contained a chaff store next to the packing station. Although on first sight this entry would seem to be problematic, the entry also records the total as 400 gross. It is through entries like this that estimates have been derived so that the total volume of trade can be estimated.

The use of various wooden barrels to transport pipes is also not straightforward. The re-use of wine barrels and beer casks is fairly universal and to be expected. While some pipe shipments may have been carried in standard wine hogsheads of 54 gallons capacity (51 gallons after 1688) it is possible that at least some of these were in hogsheads of the type used in the American colonies to store and transport tobacco. These were very large wooden barrels, with a standardized hogshead measuring 48 inches long and 30 inches in diameter at the head and containing at least 121 imperial gallons depending on the width in the middle. Fully packed with tobacco, they weighed about 500 kgs.

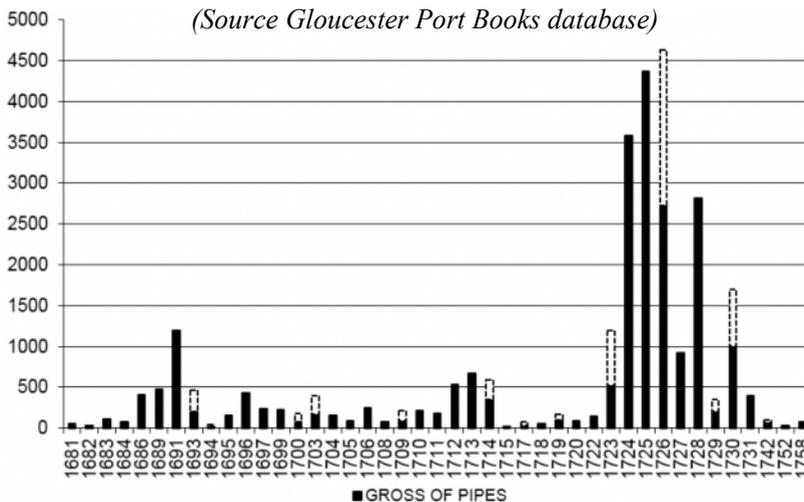
The use of "cask" as a unit of measurement is similarly unhelpful. While barrels and kilderkins were defined by statute as precise measures, "cask" was a generic term for a wooden container. Although an empty barrel cask was defined by the Cooper's guild, as was a kilderkin cask, the use of "cask" on its own could refer to one of at least three different sizes of container and is further complicated by the fact that a barrel of ale was a different capacity to a barrel of beer. In any case, the Cooper's guild allowed for different capacity barrels to be made so long as their capacity and maker's name were stamped onto the container. Information on shipments from other sources has been used to help inform the estimates used.

From 1723 the use of "box" as the unit of measurement for pipes both in and out of Bristol became much more common. Fortunately the export records allow us to make a direct comparison because the Bristol Presentments list pipe cargoes in boxes while the Bristol Overseas Port Books correctly, from the Exchequer's point of view, recorded cargoes in gross. We can compare the Presentment of 1773 with the Overseas Port Book and for the purposes of quantifying the river trade; I have used 10 gross per box as a conservative estimate. "Crate" is used as a unit of measurement only once in the Gloucester Port Books relating to a consignment on the *John* of Shrewsbury in 1699 going to Bristol suggestive of the sort of packing required for export.

The transportation of pipes in “pots” suggests the type of fishing, perhaps for crayfish, depicted in J.M.W. Turner’s 1833 view of Worcester from the river. The use of two kipe in 1691 also suggests the rather ad hoc use of what was to hand. A kipe was a part of a putt, a large closely woven conical-shaped basketwork fishtrap assembled in three sections, known separately as kipe, butt and forewheel and was woven from hazel, willow and whitethorn. The cone-shaped kipe was between 1.3m and 1.8m wide at the mouth and was open at the rear where it fitted tightly inside the smaller urn-shaped butt. If the Gloucester customs official at the time could not estimate the number of pipes in a kipe then any estimate over three centuries later must be treated as highly likely to be inaccurate. Again this suggests that the packing of pipes for transportation was being done by the trowmen

Chart 2. Gross of Pipes clearing Gloucester destined fro Bristol  
1660-1670

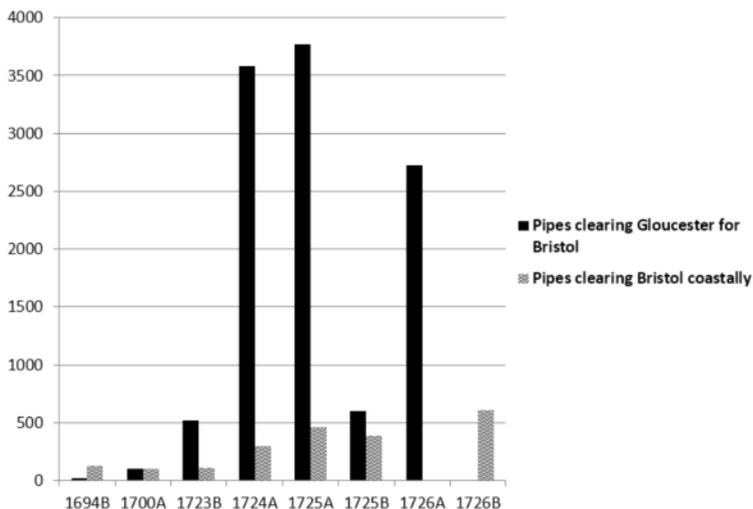
(Source Gloucester Port Books database)



rather than the pipemakers. Given the difficulty of estimating loose pipes packed in straw we must presume that the 63 gross carried by Thomas Jackson on the *Hereford* of Brockweir to Bristol in 1708 and the 86 gross carried to Chepstow on the *Bridget* of Upton in the same year were amounts specified by bills of lading. The *Samuel* of Upton carried 379½ gross of pipes to Minehead in 1717, surely an amount that even the most pedantic customs officer would not want to verify by counting himself.

There would appear to be some evidence that pipes made in the river ports of the Severn were traded to the exclusion of pipes made in Bristol so that control of some petty trades remained in the hands of the trowmen. But where were these pipes going? In all 37% of pipes were passing downstream through Gloucester destined for the Somerset ports, a further 33% to the ports of South Wales. The most surprising statistic is that 20% of all pipes were destined for Bristol.

While it has been stated by Hussey that “higher levels of trade [to Bristol) were recorded in both July and January, consonant with the demands of the fairs”, this is not the pattern shown by the down-river pipe cargoes. A closer examination of all pipe shipments destined for Bristol indicates that the first half of the year was generally far busier than the last, with February being the peak month when 21% of all pipe cargoes passed downstream through Gloucester. A further 17% of cargoes were shipped during April. In all, 65% of cargoes containing pipes were shipped in the first half of the year and this has been reflected in the estimated values used in the Bristol figures in Chart 2.



*Chart 3. Comparison of Gross of Pipes clearing for and from Bristol*

If Broseley pipes were arriving in Bristol in the 1720s in considerable numbers where were they going? They could have been for consumption within the city itself however the lack of finds suggests otherwise. Bristol also had its own pipemaking guild which would have tried to protect its own interests and had restrictions on selling

pipes made outside the city. Could the pipes merely have been passing through the city before being tramped along the coast? Tracking individual vessels shows that almost all trows carrying pipes returned upstream after unloading at Bristol. Could they have been transhipped onto other coastal vessels? A study of a selection of Bristol Coastal Port Books shows that the coastal trade in pipes was small and could, in any case, include many, some, or no Bristol made pipes. There is a clear mismatch between the amount of pipes arriving in Bristol and the amount traded coastally, at least from 1723, as shown in Chart 3. The suffix "A" or "B" denotes the Port Book from the first or second half of the year.

This surge of pipes coming downstream through Gloucester is mirrored by an increase in pipeclay going the other way. Although data from Gloucester is erratically recorded after 1729 due to a change in the definition of "open sea", this did not apply to shipments of pipeclay which remained subject to export restrictions and were still required to be recorded in the Port Books. This data suggests that the changeover to "imported" clay from North Devon was gradual at first and was perhaps due to the slowly increasing scarcity of the local clay rather than the "discovery" of the supposedly superior properties of the ball clay. The 1720 inventory of Richard Benthall shows that although he was still exploiting pipeclay dug from his estate at this date, its valuation implies that he owned no more than two tons in weight at the time of his death.

An example of a delivery of pipeclay seemingly for the Broseley pipemakers is the 15 tons carried from Bristol on the *Sarah* by the trowman Edward Owen of Madeley Wood in 1710. Perhaps the earliest consignment dates to 1709 when Francis Asbury of Bridgnorth carried 2 tons of tobacco pipeclay upstream through Gloucester aboard the *George* of Bridgnorth. It has been said that the potters faced problems with the supply of ball clay due to the seasonal fluctuations in obtaining it and the expense and inconvenience of transporting it, especially overland. Until its availability at Bridgnorth it would have been very expensive to ship pipeclay to the Potteries by any other route. The Broseley pipemakers would have had little reason to switch away from local clays unless the availability of the local raw material was restricting their ability to meet the increased demand implied by the figures.

Broseley products were able to compete with the Bristol and Gloucester pipes made of North Devon clay a generation before the

Broseley pipemakers started to switch. The use of pipeclay was not confined to actually making pipes, for instance Bristol’s sugar refiners used pipeclay as part of the process of producing sugar loaves. The better quality loaves were “clayed”, that is, they were covered in pipeclay once in their moulds and then they had water slowly poured through them so that any remaining molasses would be dissolved. This produced a much whiter loaf. Pipeclay was also used by the potters of Staffordshire. It is said that pipeclay was used in the Burslem area as a slip from around 1710 and in increasing quantities later in that decade when complete wares were produced from a mixture of pipeclay and calcined flint. As with the pipemakers, the adoption of ball clay by the potters was gradual. In a settlement dated 1721 between John Fenton of Newcastle-under-Lyme and Thomas Hill of Sheldon it was noted that the partnership had, since 1719, produced “flintware”. It was also noted that the pipeclay was brought through both Bridgnorth and Liverpool. The use of calcined flint, mostly brought from Hull via the Trent, was beset by supply problems. Interestingly, some 5 tons of flint were carried up-river from Bristol on the *Richard* of Bridgnorth in 1722 and 6 tons on the *Mary* of Bridgnorth in the following year. This flint is likely to have arrived in Bristol from London as ballast. The *Mary* also carried 1 ton of “Magnus” – a substance used by the potters

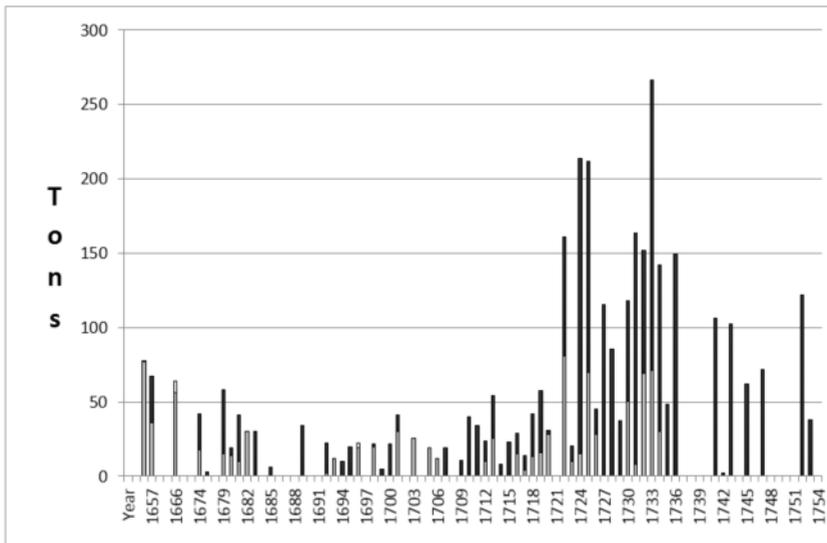
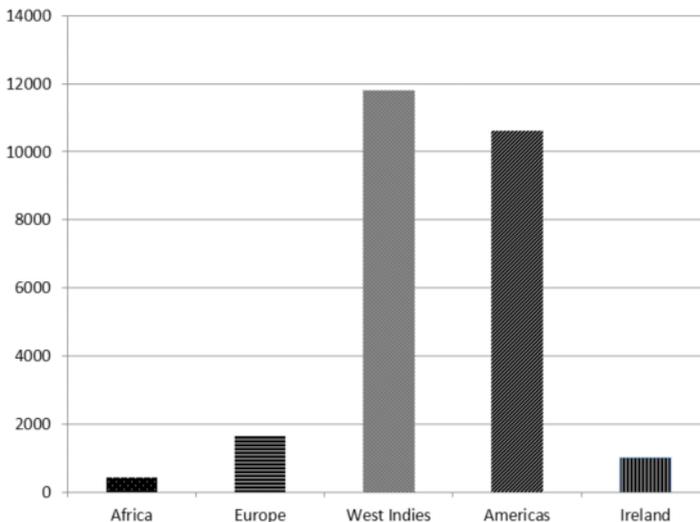


Chart 4. Pipeclay passing upstream through Gloucester from North Devon (grey) and Bristol (black).

to produce a black colour. It has been suggested that the “mughouses” at Jackfield were also producing similar wares in the 1720s. Deposits of waste calcined flint have been found there and Simpson, in 1763, was said to be producing “white wares from pipeclay”.

Richard Whitworth, writing in 1766 of a time perhaps 5 years earlier, stated that “there are constantly two, and sometimes three waggons go every week to Bridgenorth, and usually carry about eight tons of pot-ware, to be conveyed to Bristol by water; and their loading back usually consists of all sorts of grocery, foreign iron, and white clay for Burslem” and later also states that “the same wagons load back with ten tons of close goods, consisting of white clay... delivered in their road to Newcastle”. Whitworth also states that “Large quantities of pot-ware are conveyed on horses backs in large crates from Burslem and Newcastle for exportation, about one hundred tons yearly, at 2/10d per ton.” A considerable proportion of Broseley pipe production would have historically been carried overland to Staffordshire and any empty wagon or packhorse could easily have picked up a consignment of pipes on their way back. Even allowing for Whitworth’s bias, he did

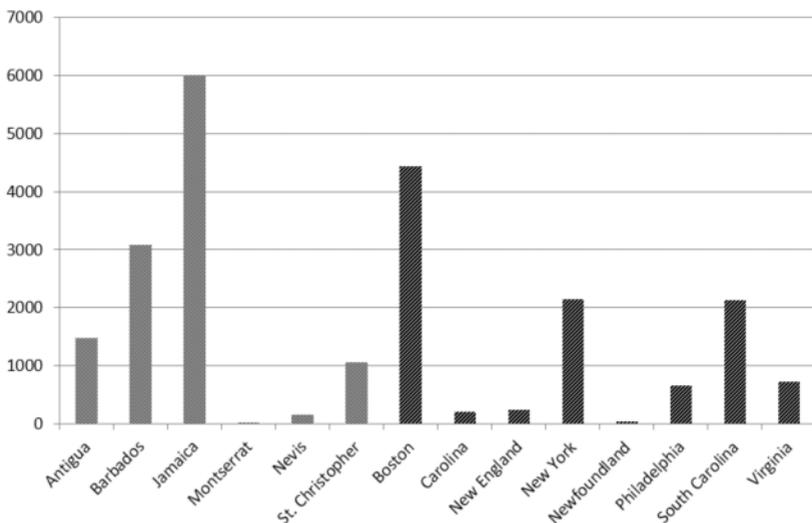


*Chart 5. Destinations of Pipes exported from Bristol in 1728 by region*

have a vested interest in promoting a new inland waterway, this route to Bridgnorth was just as important as the use of the River Weaver to get wares out of the area through Liverpool although the direct shipment of

pipeclay from North Devon up the River Severn seems to have ended following the canalising of the River Weaver in 1733. It would seem that the pipeclay described by Whitworth may well have been Dorset ball clay, brought around the coast before being transhipped at Bristol.

It seems that the coal seams outcropping in Benthall were almost worked out by this time although the number of potteries in Benthall increased during the eighteenth century suggesting that the accompanying clay was still available. Like the trade in limestone, it may have been a question of ownership. The digging of pipeclay by the Welds in Willey Old Park continued up until the 1770s but the volume may have been relatively small. Certainly the digging of pipeclay from the roadside in Benthall and other ad hoc sources would have been insufficient to supply the expanding Broseley industry. This study



*Chart 6. Destinations of Pipes exported from Bristol in 1728 to the Caribbean and North America*

would suggest that the 1720s were a boom time for the pipe industry, buoyed by the availability of pipeclay from North Devon.

Was this a real increase or could a change in recording practice be responsible? It is hard to imagine that any procedural change could produce such a large difference between neighbouring ports. The

change in the official definition of “open sea” already mentioned would apply equally to all ports above the Holms but in any case this surge had begun five years earlier. Could the figures reflect the volume of pipes that were exported abroad? Again there is a general lack of finds but have we been looking in the “right” places? Where were Bristol’s exports of the period going? The direct trans-Atlantic trade in pipes was the most important with Jamaica being the main destination. The reason for this surge is currently unexplained but it is not connected to the expansion of the slave trade during the same period as the volume concerned was considerably greater than Bristol’s entire African trade in barter pipes. Was this possible surge in export activity subsumed into Bristol’s much larger export consignments? If so, it may have been short-lived. Unfortunately the data cannot tell us if this surge lasted for more than the five years that are visible. Charts 5 and 6 would suggest that we need to be looking to Jamaica and Boston for evidence.

### **Conclusion**

The main documentary source used in this study, the “Port Books”, is so large that its sheer size is an issue in itself. However, the level of detail that survives allows the reliable reconstruction of that part of the pipe trade that used the River Severn between 1674 and 1729 and the trade in pipeclay until 1754. Although the transportation of pipes by road may never be accurately assessed, the peaks and troughs of the trade on the Severn can be used to form opinions on the wider state of the industry.

In quantifying the trade on the river, some areas of existing knowledge have been refined – the first arrival of North Devon ball clay at Bridgnorth in 1709 for instance - and can be used as a fixed point in the development of both the pottery and pipe industries. The pattern of trade of pipes destined for Bristol raises questions about exports and whether the Broseley pipemakers catered for this market in the eighteenth century. This is one area where further research is required.

The customary route overland to the Severn at Bridgnorth continued in place although the emergence of pipemakers in that town perhaps hints at its decline. The carriage of pipes on foot is recorded as late as 1871 in the county so as a method of selling, perhaps the only change has been that itinerant hawkers and pedlars were replaced by

junior family members. The packing of pipes for transport, using the cheapest available material at hand, normally straw or chaff, also remained unchanged across the centuries.

Finally, I would like to acknowledge the assistance given by the Broseley Local History Society in having some of the Bristol Coastal Port Books held at the National Archives copied for use in this study.

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## John Rose of Coalport (1772-1841)

by Kate Cadman

*This is an edited version of the Annual Wilkinson Lecture given on 5 March 2014.*

Coalport China is a product known around the world. Exported to America, Australia, India, it is amazing to think that it originated in a narrow valley in the heart of Shropshire. This business, which employed thousands of people over more than 200 years, all began with one man: John Rose. Looking at the historical background against which this entrepreneur operated, it is striking that it was an era of immense confidence. Thomas Carlyle in the *Edinburgh Review* in 1829 wrote:

We can remove mountains, and make seas our smooth highways:  
nothing can resist us. We war with rude nature, and by our resistless  
engines, come off always victorious, and loaded with spoils.

Later in the century, even poets are feeling the excitement:

T'was in truth an hour  
Of universal ferment; mildest men  
Were agitated: and commotions, strife  
Of passion and opinion fill'd the walls  
Of peaceful houses with unquiet sounds...

Bliss was it in that dawn to be alive  
But to be young was very heaven!

*William Wordsworth.*

The 1800s in Britain were a period of huge political, social and technological changes. It was an era of the rise of the commercial middle classes, with a corresponding rise in the market for clothes, building materials, and household goods such as china. Domestic demand grew by approx. 42 % between 1750 and 1800. In the same period the increase in export industries was over 200%, most of this after 1780. Coal output doubled 1750-1800, with demand from steam engines, including pumps, which in turn improved mining by creating access to deep coal seams. Iron production, boosted by war demands, also used coal for smelting, and rose by 200% between 1788 and 1806.

However, the period was also notable for armed conflicts all over the world, leading to rise and fall of economies. Political and trading embargoes and newly imposed taxes, fears of political instability, and

closer to home, the beginning of the Trades Unions movement, all had effects on the English economy. From the 1780s there is evidence of more economic confidence; although the American colonies had been lost, the British West Indies, Gibraltar, and Clive's acquisitions in India helped balance it out. The French Revolution, at first welcomed by English intellectuals, developed into what was perceived as a terrifying bloodbath, and any social progression was regarded with deep suspicion by the political establishment.

These influences had both positive and negative results – for instance, reforms in government and reduction of the influence of the Crown were brought in as a means of dissipating social unrest. However, what were perceived as anti-Establishment groups were politically marginalised. Dissenters (religious nonconformists) were not allowed to vote until 1793, nor allowed in universities or to sit in Parliament. This had the effect of focussing their energies in commercial, business and manufacturing directions. Schools were set up by and for these groups, the curricula of which were very much practical in orientation, including accounting, science and languages, rather than the traditional Classics education of a gentleman. Dissenters were very much in the forefront of the provincial Enlightenment, encouraging science and education for a wide range of people. Many cities and towns set up regular lectures and talks, which sometimes became an important focus for the advancement of learning. The Midlands based Lunar Society was responsible for sharing and disseminating many important inventions, and its members were entrepreneurs and businessmen as well as scientists and 'natural philosophers'.

Against this background of heightened technical and scientific advances, in many parts of Britain the local natural resources were being exploited by business men, who were developing technology and logistics for their specific needs. John Rose, like John Wilkinson, was one of this new breed.

### **The Rose family**

The name Rose is not found widely in Shropshire. John Randall the local historian, who worked as an artist for John Rose at Coalport, suggests that the Rose family came from Scotland in around 1770. The Rose family tradition says that the Rose or de Ros family originate from Kilravock, in the Moray Firth area, and that the family came over with William the Conqueror. They suggest that the date for John Rose senior moving to Shropshire was around 1740, but as he married in 1771, it would seem more likely that John Randall was closer to the date.



*John Rose Jnr in later years*

Scotland at that time was suffering repression following the 1745 rebellion, when Prince Charles Edward Stuart (Bonnie Prince Charlie) had been so comprehensively defeated at the battle of Culloden. Logically, a younger son attempting to make his way would have welcomed the chance to move to a more prosperous area. John married Martha Jones at Shipton Church, in the Corvedale, and both at this time are described as residents of the parish. Later in 1771, the family are recorded in the parish of Barrow, where John and Martha are tenants of Swinney Farm, not far from

Caughley.

John Jnr was born in 1772, eldest of a large family, possibly as many as 11, though three died young.

Swinney Farm is only around a mile from the Caughley works, the Salopian China Manufactory of Thomas Turner.

### **Caughley and Calcutt's**

The Salopian Porcelain Manufactory was set up by Thomas Turner around the time of John Rose's birth, and by the time he was old enough to be apprenticed, it was a successful enterprise. It supplied wares for decoration to Chamberlain at Worcester, as well as producing its own principally underglaze blue transfer printed ware, selling through a London warehouse. According to Llewellyn Jewitt, the Victorian ceramic historian, John Rose 'was taken into the house by Mr Turner, and taught the art of china-making in all its branches'.

If one assumes the normal apprenticeship of the time, John Rose would have started as an apprentice at the age of 12, a seven year apprenticeship, then 2 years as an improver, which would take us to the age of 21 in 1793. The apprentice system was quite strict, and advertisements appeared in newspapers of the time in reference to

runaways. Some of his younger brothers followed him to train at Caughley.

In 1792 John Rose's father died, and with such a large young family, there must have considerable financial pressures. Jewitt also refers to differences with Thomas Turner. Whatever the reason, John left Caughley to set up a porcelain manufactory in Jackfield, with a partner, Edward Blakeway.

Blakeway was a successful Shrewsbury draper, who already had business interests in the Gorge, as a partner in John Wilkinson's New Willey Ironworks Co among others. The actual date and to an extent the specific site of the Calcutts factory is not altogether clear, the buildings appear to have been the Thursfield Pottery, and business letters in 1794 suggest that the works was already established. Jackfield at this time was already well developed as an industrial area, but its geography limited expansion. On the other side of the river, however, great changes were taking place.

Richard Reynolds owned land (the Hay Farm, previously owned by the ironmaster Abraham Darby III) on the north side of the river, and leased it to his son William. It was William who began to develop the area in conjunction with the expansion of canals linking the mines and ironworks on the northern edge of the East Shropshire coalfield with the main transport artery of the River Severn. The massive structure of the Hay inclined plane, linking the canal system with the River Severn many feet below, gives an idea of the scale of this development.

### **The move to Coalport**

The partnership of Blakeway and Rose began building a more extensive factory in the 'New Town' of Coalport, receiving deliveries of firebrick and fireclay in December 1795, suggesting the construction of kilns for firing. China clay was bought via the well established Wedgwood pottery. The partnership also included John Rose's 21 year old brother Richard. His name, however, last appears in a further lease of 1800, though he himself does not appear to have signed it. Later, another partner, Robert Winter, appears.

The factory was certainly in production of some form by the summer of 1796, as there were some important visitors. According to the *Salopian Journal*, 24 August 1796,

...the Prince and Princess of Orange...visited the Dale Company's ironworks...went by water to see Mr Brodie's cannon foundry...and

thence proceeded to the china factory at Coalpark, where His Highness bought some pieces of Mr Rose; and after viewing the Tar Spring, the inclined plane etc., returned to the Tontine Inn...

This short passage reminds us of how much new and varied industry was crammed into the Ironbridge Gorge.

The Blakeway and Rose factory continued to develop, as evidenced by letters from John Rose to Wedgwood, asking for supplies of clay with some urgency, and leasing further land at Coalport from Rebecca Darby in 1797. And according to Thomas Telford, writing in 1800, Coalport was becoming a successful industrial area:

Formerly the place consisted of a very rugged uncultivated bank, which scarcely produced even grass, but owing to the judicious regulations and encouragement of Mr Reynolds joined to the benefit arising from the canal and the river, houses to the number of thirty have been built there, and more are still wanted, to accommodate the people employed at a large china manufactory, a considerable earthenware manufactory, another for making ropes, one for bag-making and one for chains.

The earthenware pottery referred to was the Bradley pottery, established in 1796. Bradley was a clerk at William Reynolds' Madeley Wood Ironworks, and the works produced a quality refined earthenware, not unlike some early Wedgwood earthenwares. This pottery had a short life. In 1800, a new partnership, consisting of William Reynolds himself, William Horton, and yet another Rose brother, this time Thomas, set up a porcelain manufactory at Coalport, possibly on the site of the Bradley pottery. The relationship between the two brothers is ambiguous. Some sources suggest rivalry, others some form of co-operation.

John Randall the artist and local historian, who knew John Rose personally, described him in the following terms:

Mr Rose who had the sole management of the works, spared neither pain nor expense in raising the character of the productions of the works. He was a man of wonderful energy, being strong in body, having a clear head, and cool judgement, and gifted with remarkable perseverance.

### **The take-over of Caughley**

Meanwhile, another rival of John Rose, his old employer Thomas Turner, was experiencing some variation of fortunes. His wife died in 1794, and in the same year, following increasingly concerned letters about availability of stock, his commercial relationship with Chamberlains of Worcester appears to cease. Supplies of good quality materials are also of concern. While Thomas Turner was continuing to produce his standard blue printed wares, sometimes of variable quality, the John Rose factory was beginning to develop a wider and more decorative range, and as is obvious from these local commemoratives, approaching the same markets.

Turner's new young competitor at Coalport was not only was making products to compete with his, but appears to have been targeting his workforce. The *Salopian Journal* printed an advertisement on 2 and 7 October 1799:

COALPORT CHINA MANUFACTORY Workmen wanted in the gilding, enamelling, and blue painting lines: twelve good hands of each work will meet with constant employ.

The only source locally at this date of such skilled workmen was the Caughley factory. On 12 October 1799, Thomas Turner disposed of the Caughley works to the partnership of Blakeway and Rose. John Rose now controlled an extensive manufacturing capacity.

The *Salopian Journal*, 30 October 1799, announced:

SALE BY AUCTION China Ware Being the valuable stock of the Royal Salopian porcelain manufactory, removed to Shrewsbury for the convenience of sale, the property of Thomas Turner Esq (who from his indifferent state of health declines continuing the said manufactory).

This was repeated on 6 and 13 November, and on the 20<sup>th</sup> there was a notice stating the sale was continuing till all was sold. Thomas Turner's factory at Caughley was finally abandoned in 1814. Caughley Place, the French style chateau which he had built himself in his prosperous days overlooking the site, did not last much longer.

### **The ferry disaster**

The year 1799 also saw a traumatic event in Coalport's history. Many of the Coalport work force lived in Broseley and Jackfield, on the other side of the river. A ferry provided a local crossing, as the Iron Bridge was not only a mile upriver, but also charged a toll. On a dark autumn

night, the ferry capsized and many of its passengers were drowned. A letter from John Rose to the *Salopian Journal*, 26 October 1799, stated:

As there will be many erroneous accounts circulated respecting the unfortunate and shocking accident that happened here on weds evening (October 23rd) at 9 o'clock, I beg leave to state as near the particulars I have yet been able to learn. As the people from the Coalport Manufactory, to the number of 43 were leaving there at 9 o'clock at night, to go home over the usual passage boat, owing to the inattention of the man whom the boatman had entrusted to steer over, the boat unfortunately went down with all on board, and only 15 out of the whole could save themselves, the remaining 28 were unfortunately lost. In consequence of the great fog and the darkness of the night, no one was able to give the least assistance.

The number given of people on the ferry, assuming some had left work earlier and some would live on the Coalport/Madeley side of the river, suggests a considerable workforce, and an extensive and presumably lucrative business. The impression of prosperity is further strengthened by John Rose's move from the house in Coalport he rented from William Reynolds, to the Lawns, Broseley, a substantial house leased from John Wilkinson. This may have coincided with his marriage to Elizabeth.

### **Bankruptcy**

However, in the politically charged years of the early nineteenth century, when the flimsy peace with revolutionary France collapsed, with ensuing trading difficulties, business was not all plain sailing. Local events also had significant effects. William Reynolds died unexpectedly in 1803, and this gap in the local economic power structure had considerable



*Rose Cottage Coalport*

repercussions. His place in the second porcelain works at Coalport, the Thomas Rose Company, was taken by Robert Anstice.

In this year, the bankruptcy of the firm of Messrs Blakeway, Rose and Winter was announced, probably more to do with financial overstretching than production or sales problems. The company was bought by Cuthbert Johnson and William Clarke who, with John Wootton, took on John Rose to run it. The fact that it was renamed John Rose & Company suggests the respect with which John Rose was regarded. However, this coincided with a move back to Coalport, to a more modest house.

### **John Rose at Coalport**

Joseph Plymley's *General View of the Agriculture of Shropshire*, published 1803, indicates what John Rose was making at this time:

At Caughley is a china manufacture of great excellence. The blue and white and the blue, white and gold china there is, in many instances, more like that from the East than any other I have seen. These works have been purchased by the proprietors of a later establishment, the Coal-port china works and are confined to the ware specified above. At Coalport coloured china of all sorts and exquisite taste and beauty is made.

His early wares are quite modest, with similar blue printed designs to Turner's Caughley. Shapes tend to be relatively simple, as does the decoration, reflecting not only technical limitation, but the current fashions.

Some elaborately painted obviously Coalport shapes do appear, but these are almost always outside decorated. There were a number of these decorating workshops, especially in London, and among the best known was Thomas Baxter. The surviving watercolour by Thomas Baxter of his father's decorating studio, which was exhibited at the Royal Academy in 1811, is very useful in identifying contemporary Coalport shapes. It even shows a "Coalport White China" price list, and the Nelson commemorative plate of 1806.

The rival Rose brothers' factories continued to develop. John Rose appears to have had the larger facilities, especially as he now controlled the Caughley site. However, Thomas may have been the more creative, as he produced a much larger range of patterns. While some of the John Rose pattern books still exist in the Wedgwood archives, references in these to some Thomas Rose patterns is all the documentary evidence that survives. Both the shapes and some of the patterns can be very

similar. The main research on this elusive factory's products has been done by Roger Edmundson, which has helped to put the two factories in perspective. Comparisons and cross references are complicated, given that John Rose's pattern numbers in the period go up to around 400; in the same period to the end of his factory, Thomas Rose's pattern numbers go up to 1419.

In 1813, William Horton took up an interest in the Lilleshall Company ironworks, and the partnership of Anstice, Horton and Thomas Rose was formally dissolved in February 1814. Thomas Rose returned to run the family farm, and the premises of the factory were taken over by John Rose. This is the year the Caughley works was run down, and all production located at Coalport. The valuable coal reserves at Caughley were running out, and the lease was almost up, so logistically, it made no sense to retain the site. John Rose now turned his attention to other porcelain producers.

William Billingsley (artist and ceramic experimenter) was producing a superlative porcelain at Nantgarw, in south Wales. Llewellyn Jewitt wrote:

W B whose name is more intimately mixed up with the history of porcelain than most of his contemporaries, was a china painter of unusual excellence, and a practical maker as well. Like many another man of genius, he was, however, unstable and erratic in his movements: but to this very quality we are indebted for the establishment of more than one eminent manufactory. To him and his practical skill is due the establishment of china works at Pinxton, at Mansfield, at Nangarw, and at Swansea, and to some extent the improvement of the ware at Coalport and Worcester, as well as much of the high class of decoration at the old Derby works. Billingsley was a man of great genius, of extraordinary talent, of extreme ability as an artist, and of skill as a practical potter.

In 1820, John Rose persuaded Billingsley and Samuel Walker, his partner and son-in law, to come to Coalport, thereby removing another competitor from the market. Whether Billingsley and Walker's technical knowledge had any influence is open to doubt, but in this year John Rose's company won a prestigious award from the Society of Arts, relating to the use of lead in glazes.

### **The Society of Arts award**

The Society of Arts, founded in 1754, proposed that the development of arts and technologies should be encouraged by offering prizes,



*Backstamp Gold Medal*

through a series of competitions. By 1757, the successful scheme had established committees to oversee six categories: Agriculture, Manufactures, Chemistry, Mechanics, Colonies and Trade and the Polite Arts. The Premium Award Scheme offered premiums (medals) and bounties (money). Originally, as the purpose of the Society was to disseminate information to the public, patented items and inventions could not be entered, which may have been

a factor in some innovations not being patented. However, as the recording of inventions became more urgent in a competitive age, the Society was not able to recognise many important items, and the decision against patented products was reversed in 1845. The Premium Award Scheme came to an end around 1850. The decision was made to further the aims of the Society of Arts through a lecture programme and then a Journal, both of which continue today. They were also active in promoting exhibitions, including the Great Exhibition of 1851.

The health hazards involved in using lead had been known for a considerable period, and an Award had been offered for a glaze which did not contain this toxic material. John Rose submitted samples of the materials that made up his glaze, along with finished articles (it is interesting that in his accompanying letter, he does not comment on the health issues, but rather on the improved technical aspects). He was awarded, not the main medal, but the smaller or Isis Gold Medal. However, this formed the basis for a series of backstamps commemorating the Award which continued to be applied, mainly to more prestigious products, right up into the 1850s, even after John Rose's death.

### **Coalport designs**

Early design influences on Coalport, like many contemporary factories, were mainly Oriental, especially Chinese – or rather, the Western interpretation of Chinese art. Porcelain, after all, originated in



*Bleu celeste spiral vase*

China, so to an extent, that is what the market expected. Classicism, again a contemporary interpretation of Ancient Roman and Greek design, was a feature of the first years of the nineteenth century, alongside the newer Oriental fashion of Japan styles. The Rococo revival of the 1820s onwards brought in flowing, asymmetric curves, which lent themselves particularly well to the plastic quality of clay. Some of Coalport's most recognisable products are the flower encrusted wares, leading to the generic use of the term Coalbrookdale. Later, especially towards the middle years of the century, the 'French' style was enormously popular (this is usually inspired by early Sevres, sometimes quite a faithful copy, but sometimes a rather bastardised hybrid). These design

styles continued to be recycled at intervals throughout the century, with varying degrees of authenticity and competence of production.

John Rose's expanding factory encouraged the opening of warehouses in Manchester, London, Sheffield and Shrewsbury – 'a large trade was being done with dealers all over the kingdom'. The factory attracted skilled workers from further afield, including from factories such as Derby. Estimates of the workforce in the 1820s are around four to five hundred.

### **The strike of 1833**

The increase in workers coincided with a period of industrial unrest. Conditions in the ceramics industry in the nineteenth century were generally deplorable, as is evidenced in descriptions from the Potteries. However, it does not appear that Coalport's troubles were caused by immediate concerns with working conditions or practices, but by some of the work force's desire to set up a trade union. This was in addition to the existing 'Pitcher' society to aid the sick, to which they all contributed, and a local branch of the 'travelling society' which helped

men find jobs in the industry. As with many employers and industrialists of the time, John Rose regarded the establishment of a trade union with the deepest suspicion, and his intransigent attitude led to a strike in 1833. It is unclear quite how many of the workforce joined this strike. A declaration of loyalty to John Rose was signed by only 28 men, though these are among the most senior of the workers who may have represented others. One point the declaration makes is that this particular Establishment was the last on which such an experiment ought to have been made... *they have experienced more liberty and liberality-more constant employment-and less oppression-than ever they found under any other masters... the extreme generosity of Mr. ROSE, in striving to find, in bad times, employment for a surplus number of hands, to the detriment of his own pocket.*

Following the Coalport Strike in 1833, John Rose received a silver cup inscribed from his friends and neighbours, as a tribute to his firm action. However, whether Rose's stand benefited him long term is open to doubt. Although some of the strikers returned to work, others left to work at other factories, and the strike was remembered for many years afterwards.

### **The successful entrepreneur**

One of the historically most valuable aspects of Coalport China is featuring images of landscapes and industry. Industrial images particularly appear on some early John Rose pieces, suggesting that local entrepreneurs are commemorating their achievements (later pieces are more likely to have depictions of rural scenes, or castles and stately homes – an interesting change in attitudes).

John Rose was manifestly an important local manufacturer, and enjoyed many of the benefits of that status, including becoming magistrate for the Borough of Wenlock in 1836. Under his management, the factory continued to prosper, employing highly skilled workmen, including John Randall, the noted painter, local historian, journalist, and geologist, to whom we owe much of our first hand information about his employer.

John Rose died on 30 October 1841, and was buried on 5 November. His resting place was Barrow Church where he had been christened 69 years before, near the site of the Caughley factory. His gravestone reads: 'He was the founder of the China Manufactory at Coalport and died beloved and respected by all who knew him'.

In some ways the true character of John Rose is elusive. He was manifestly a hard headed business man, as is evidenced by his apparently ruthless competition with his early employer, Thomas Turner. His efficient removal of another competitor, William Billingsley, his reaction to the 1833 strike, even his relationship with his brother Thomas suggests a hard man, but there is a suggestion of a softer side too. Following the ferry disaster when his employees drowned, the Shropshire Gazetteer of October 1799 commented:

The generous master of those who perished provided coffins at his own expense for their interment, and was frequently seen to shed tears. His benevolent conduct towards the suffering survivors will never be forgotten. It will ever endear him in the estimation of his servants, and of the world at large, and when he shall be no more, his memory will be held in veneration, both as master and as a friend.

His brother Thomas took over management of the works before himself dying two years later, and also being buried at Barrow. Their nephew William Frederick Rose and his partner William Pugh continued the association of the Rose name with Coalport china until 1862.

It is perhaps fitting that buried in the churchyard at Barrow are not only most of his family members, including Thomas, but also Thomas Turner. In *The Clay Industries on the banks of the Severn*, John Randall commented:

It will be seen from what we have written that Thomas Turner, of Coughley, and J. Rose, of Coalport, were the creators, so to speak, of new industries which drew around them large populations and gave employment to thousands who otherwise might have sought for it in vain, or found it under less advantageous circumstances. It will be seen also that not only were they benefactors contributing materially to the common stock of national prosperity themselves, but that their energies and abilities inspired others who in turn became industrial organisers and through various channels carried on the work of progress.

## Water Mills on the Linley Brook

by Stephen Dewhurst

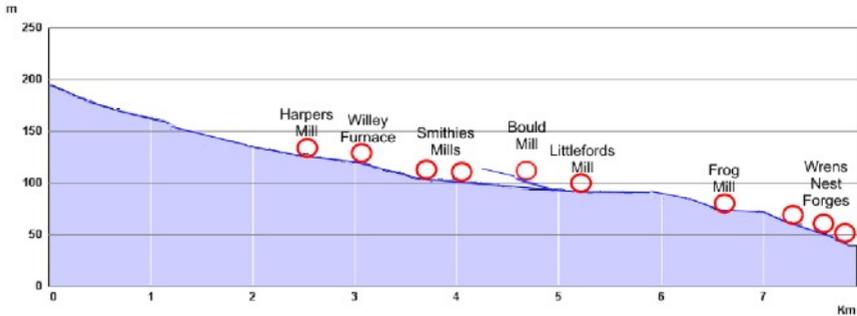
*This is an edited version of a lecture given to the Broseley Local History Society on 2 April 2014*

Shropshire, as with most counties, any stream of significance had at least one water powered site. For example, the Worfe, which runs from Sheriffhales to Bridgnorth, together with its tributaries, had at least forty mill sites. These included corn and paper mills, water pumps and iron forges. Most of the corn mills were small and as on the Linley Brook they were often associated with a farm of smallholding, being used mainly to grind oats, barley and beans for use as animal feed.<sup>1</sup>

The Linley Brook rises south of Barrow Church, near Shirlett Common at what was in previous times called the Atherwell spring. From here, what was originally known as the Atherwell Brook flows in a generally easterly direction in what is now called Barrow Dingle and after 1km it turns south westerly towards the Smithies. At the Smithies, what was previously the Smithies Brook,<sup>2</sup> turns almost at right angles flowing



*A Map of Shropshire (1808) by Robert Baugh, showing Upper(1) and Lower Smithies (2) Mills as well as Fog Mill (3) and Wrens Nest forges (4-6). Linley Mill (d) is not shown but was in use. Harpers Mill (a), Willey Furnace (b) and Bould Mill (c) were disused and had been demolished by this date.*



*Profile of the Linley Broom showing the relative location of the water powered sites*

generally east until it joins the Severn. This portion forms the boundary between Willey and Linley parishes with Astley Abbots Parish. The brook is only 8km long however it falls 150m along its length. There were a total of eight mills on the lower 6½ km of the brook, as well as one on a tributary from Bould.

We are fortunate that the whole length of the brook is covered by a series of maps produced by Samuel Parsons in the early 17<sup>th</sup> century. These wonderfully coloured maps give details of the water features as well as cartouches of the mills themselves. Not all the maps are accessible to the public, but previous researchers have transcribed parts of them and we are able to benefit from their work.<sup>3</sup>

For the first 2 km the brook is small and the flow insufficient to power a mill. By the time it reaches the Willey Pools other small tributaries have increased the flow to a level where it is of practical use.

### **Willey Pools (SO 664 193, SO 665 991, SO 667 989, SO 669 985)**

The first water feature on the brook is a series of one small and three large pools dividing Shirlett woods from Willey Park. These have no connection with water power but are features associated with the picturesque landscaping of Willey Park and the building of the new hall in the early 19<sup>th</sup> century. The pools can be viewed from the Willey to Smithies Road with Willey Hall being visible on the horizon.

### **Harpers Mill (SO 670 984)**

This was the first mill on the stream. It is first recorded in 1618 and was in a state of disrepair by 1681, but may have been operating in 1711.<sup>4</sup> The mill site was cleared when the Lower Pool was built as part

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of the landscaping of Willey Park. Although the exact location is difficult to define, it is likely to have been located under what is the north eastern corner of the Lower Pool dam.

### **Willey Furnace (SO 6715 9804)**

The furnace was constructed around 1594 to take advantages of the abundant sources of iron and charcoal previously used in the nearby bloomeries. In 1618 John Weld bought the Manor of Willey, which included the recently erected furnace. At this time it was held by John Slaney, a merchant Taylor of London, who had also been making iron in Morville since at least 1599. Slaney's brother Richard owned the southern half of Linley, and it is likely that he managed the works.<sup>5</sup> By 1631, perhaps on the expiry of the lease, it had come into the possession of Weld, who had it rebuilt. In 1673 it was let by Weld to Philip Foley of Stourbridge. He was one of the Foley dynasty of ironmasters and had leased the furnace to secure a source of pig iron, as a result of a dispute with his brother Paul. The dispute was soon settled and Foley relinquished the lease.<sup>6</sup> In 1681 a new partnership was formed between Thomas Newport and others to work the furnace, but by 1710 it was in the hands of Richard Baldwin. At this time, as a source of charcoal,



*Willey Furnace pool. The house in the background was probably occupied by the Furnace Master as when the furnace was in blast it required constant attention.*

Baldwin bought the crop of a coppice in Ruckley and 500 cords from Sir Edward Smythe. Only a year later, Weld leased the furnace to Richard Knight, but by 1733 it was in the hands of Baldwin again. In 1733 the senior partners of the Coalbrookdale works, Richard Ford and Thomas Goldney, took the lease of the works and ran it in association with their other concerns. The partnership ran the furnace until the expiry of their lease some 24 years later, supplying pig iron to various markets including Bristol. In 1757 the New Willey Company was formed as a partnership by Brooke Forester, the descendant of Weld,

with amongst others John Wilkinson. Its importance diminished with the building of the New Willey works and it appears to have gone out of use in 1774.<sup>7</sup>



*Willey Furnace and pool from Samuel Parsons 17 century map. The cartouche depicts the furnace with the tail race and bypass clearly shown. SA 6007/19*

Blast furnaces worked continuously, the iron being tapped at regular intervals, so it was important to have a supply of water capable of powering the waterwheel without interruption. The bellows which blew air into the furnace were worked by the waterwheel. As water was often short in summer, it was common to stock charcoal and ironstone during these months ready for a winter campaign, when there was likely to be more rainfall. It would take some days from lighting the furnace to it being ready to smelt iron, and when the furnace was blown out it had to cool down and possibly be re-lined ready for the next campaign.

A substantial dam was built to hold back the waters of the brook and form a pool. This is

still full of water and was later used for fishing. Its head is just below the lower pool dam, the upper part being completely silted up. Below the dam is a large hollow, which is the site of the furnace; however, there are no upstanding remains. The waterwheel would have been fed by water from the dam in a wooden trough. In the centre of the site is a small stream which is likely to have been the tailrace from the wheel. This indicates the probable site of the furnace and accords with the Parsons map of the 17<sup>th</sup> century.<sup>8</sup> On the eastern side of the dam is the bypass spillway, which is still in use. This is a substantial stone structure, with an over bridge, parts of which must be contemporary with the furnace. The bypass is now the course of the brook and it joins the tailrace at the bottom of the site.

The green drive from the Linley Turnpike to Willey Hall runs above the site on the eastern flank of the valley. This has been interpreted as an access road or railway associated with the furnace; however, there is no evidence for this and it is likely that this road was constructed some time after the furnace went out of use.

The site is on private land and there is no access, but it can be viewed from the nearby road from Willey to the Smithies.

### **Upper Smithies Mill (SO 6744 9762)**

This mill was probably built in the early 17<sup>th</sup> century as a corn mill and does not appear to be associated with a farm. Its construction would represent a considerable investment, with the building of a leat some 400 meters in length as well as a small mill dam. This gave sufficient head to drive an overshot waterwheel. We next come across the mill when the Caughley China Works needed a grinding mill. It is unclear what the mill actually ground; initially it may have been soapstone but later it was probably china stone. This was most likely done using an edge runner mill. In 1783 Turner was using the Upper and Lower Mills in association with his china factory at Caughley.<sup>9</sup> His successors, Blakeway & Co., took out a further lease in 1800. At this time 'the premises were very run down' and they were required to spend the considerable sum of £200 repairing the mills.<sup>10</sup> The mill continued in this use until 1842, when the lease was cancelled on the closure of the Caughley works.<sup>11</sup> By 1882 the mill had been converted into a sawmill for the Willey Estate and it continued in use, as a water powered mill, until 1947 when the wheel was dismantled.<sup>12</sup>

With the exception of the wheel and machinery, this mill site is essentially complete. The weir at the head of the leat is a mixture of concrete and brick. This has been undermined and bypassed by



*Upper Smithies Mill when it was used as the Estate sawmill for the Willey Estate showing the overshot waterwheel.*

previous flooding but is essentially complete. The course of the leat can be followed to the mill. In parts the open leat has been replaced by large drainage pipes, probably due to stability or leakage problems. Near the mill is a brick bypass channel, which would have been used by the miller to control the level of water in the dam. The two-storey mill building is of handmade brick, probably dating from the mid 18<sup>th</sup> century. It may have been reconstructed for original corn mill or for the later use by the China Company. Various changes to its structure have been made at later dates with 19<sup>th</sup> century brick. One unusual feature is the two ornate finials at each end of the roof. The mill is adjacent to the Green Drive which was constructed from the Bridgnorth-Broseley Road to the new hall at Willey. It seems likely that the finials were added to improve the view of the mill from the road. There is also evidence that the mill was lime washed to improve its appearance. This was common for properties on the Willey estate and was known as Lord Foresters livery. The tail race from the wheel runs in a substantial brick culvert, around 80m long, emerging downstream of the mill (SO 675 976). The

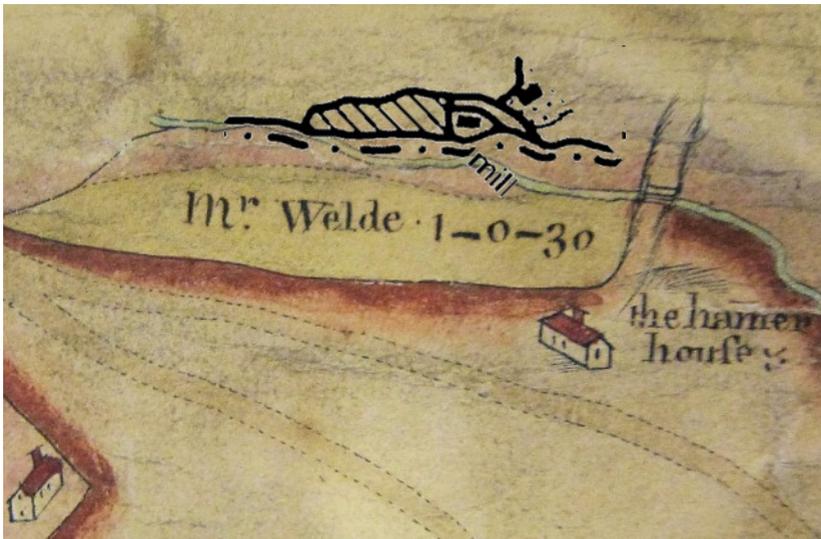
mill is on private land but can be viewed from the Willey to Smithies Road.

### **Small Dam (SO 6750 9578)**

Between the Upper Smithies Mill and the tail race culvert are the remains of a small dam. This is shown on Ordnance Survey maps between 1882 and 1927 as a weir and sluice. It was not a mill site and the fact that it was maintained during the period the saw mill was operating suggest it may be associated with maintaining the water level above the tail race.

### **Lower Smithies Mill (SO 6774 9778)**

This site does not appear to be named on any map but it is likely to be that of the Smithies Lower Mill. The only clue to its early history comes from Parsons Map.<sup>13</sup> Close to the mill, in Astley Abbots parish, is a building named the 'the hammer house'. Hammer was a common name for a forge associated with a bloomery.<sup>14</sup> For centuries prior to the building of Willey furnace, iron had been produced in the area using bloomeries. The bloom of iron was split into two halves, known as brands, ready to be taken to the hammerman at the hammer mill. Here the brands were hammered to remove slag and improve its constancy.



*The site of the Lower Smithies Mill with insert of plan based on Parsons map of Willey. The Hammer House gives a clue to its possible use as a forge. From Samuel Parsons map of 1625. SA 6007/20*

It is likely that it went out of use when the bloomery was superseded by Willey Furnace. This may be the forge mentioned as being in the possession of the lord of Willey manor.<sup>15</sup> By 1631, Weld had built a forge at Hubbard's mill near Bridgnorth to work the iron from Willey Furnace, perhaps because this small forge was not capable of processing all the iron from the furnace, or it was under lease.<sup>16</sup>

It is probable that this is the second mill used by Caughley as a grinding mill associated with china manufacture. However, there is no documentary or physical evidence to confirm this. If this is the case, this small mill would have gone out of use when the lease was cancelled in 1842. By 1882 the mill had been demolished, the dam silted up and the whole site returned to pasture.

The silted up dam still remains, with a depression marking the probable outlet for the water to feed the wheel. The stream follows the course of what would have been the bypass to the north of the dam. A few metres downstream of this is a rectangular platform which is the probable site of the mill. A few small pieces of slag can be seen, indicating the likely original use of the mill. The site is on private land with no public access.

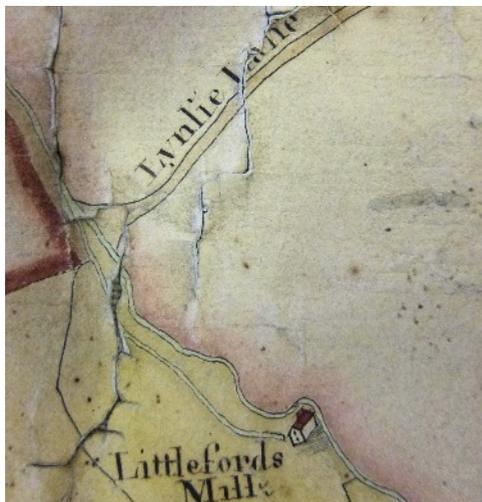
### **Bould Mill. (SO 6796 9826)**

This somewhat enigmatic mill was situated south of Bould Farm on the Willey Estate. It is mentioned in 1557 and shown on Parsons Map of Linley in 1639.<sup>17</sup> The mill stream rises to the west of Willey Home Farm, around 1km north of the mill. This is a small stream and could not have provided much power, so this would have been a small mill, perhaps associated with the farm and working intermittently. In the early 17<sup>th</sup> century, Bould was held by a freeholder by the name of Aston and it is possible that he worked the mill.<sup>18</sup>

The mill had long disappeared by the time the first OS map was published in 1882; however, the map gives a clue to its likely location, showing a small enclosure in the typical shape of a dam. The evidence on the ground certainly points to this being a dam's location; however, there is no evidence of a mill. This site is on private ground with no public access.

### **Linley Mill (SO 6897 9816)**

There was no mill in Linley parish and what was called Linley Mill was actually situated in Astley Abbots parish. It is shown as Littlefords Mill on the map of 1639;<sup>19</sup> but had become Linley Mill by 1796, when it was occupied by William Dukes at a rent of 5s 6d from the local landowner John Stephens.<sup>20</sup> By 1801 it was occupied by Samuel Griffiths and the



*Littlefords, later Linley Mill showing the mil, leat and the original course of the Bridgnorth to Broseley Road. Samuel parsons 1625. SA 6007/20*

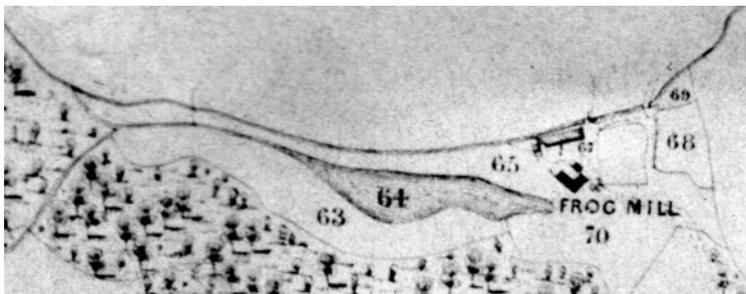
last reference to a miller was in 1841, when it was occupied by Thomas Grinelle aged 40 and his father William. In 1831 William Wyley reported on the condition of the mill for Stephens: *House in good repair except floor wanted, Small Mill, roof wants a little repairing and the Gable end underbuilding, bar, Timber and Tiled in good repair, Stable and Cowties in good repair a few Boards wanted, also Gates.*<sup>21</sup> This small mill did not offer a living for the miller and was operated in conjunction with a smallholding.

It was fed by a leat from the brook 100 metres upstream. Today the leat no longer holds water and is a public footpath leading to the site of the mill. Nothing remains of the mill; however, there are

upstanding walls of one of the outbuildings and the remains of the silted up dam and wall.

### **Frog Mill (SO 6978 9761)**

This mill was possibly the oldest on the brook, having a valuation of 13s 4d in 1291.<sup>22</sup> As with Linley Mill, the miller ran a smallholding in addition to running the mill. The first confirmed reference is in 1639, when it was leased to William Baylie.<sup>23</sup> Later, Thomas Stephens leased the mill to Robert Faybeard.<sup>24</sup> In 1765 Thomas Shelton had leased from Thomas Stephens of Benthall, 'the mill, with a messuage, barn, stable, garden and orchard' with 14 acres of land for 30 years at a rent of £19 per annum.<sup>25</sup> Sheldon held the mill until 1801, when it came into the possession of Mrs Samuel Griffiths, perhaps a widow, at a rent to 5s 6d.<sup>26</sup> By 1832 it was being worked by a man by the name of Jones. At this time he had repaired the mill wheel, replacing some timber parts with iron ones supplied by Onions of Broseley for £16 14s. It would appear that the landlord Stephens was actually responsible for the upkeep of the mill, and Jones claimed £20 as the full cost of repairing the wheel. In 1835 Stephens's agent reported that in addition to the premises being repaired by Jones, he had 'laid a new barn floor and much improved the land in the last few years'.<sup>27</sup> Jones had left by 1861



*Frog Mill from the 1840 Tithe map. Plot 64 is the dam with its leat running west. Note that the mill is detached from the dam. It is not obvious what type of wheel drove the mill or how it was fed from the dam*

as James Smout was the miller in occupation but only one year later there was a sale of the furniture, livestock and fixtures, the properties of a Mr. Pierce.<sup>28</sup> Between 1869 and 1871 there was an exchange of 33 acres land between the heirs of Stephens and the Apley Estates, and the site remains part of the Apley Estate. At this time the tenant was John Gretton who was a miller and famed 60 acres however by 1881 the mill and house were unoccupied.<sup>29</sup>

There is little to see at the site today, the only remains being of the silted up dam and a ruined barn. The site of the mill has completely disappeared and there is no clue as to its exact location. A public footpath from Nordley to Apley Forge runs through the site.

### **Waulk Mill (SO 793 983)**

The function of this mill is indicated by the adjacent field names of Great and Little Wauke Mill Leasow as well as Waulk Mill Slange.<sup>30</sup>



Waulk is derived from walk which was the name given to fulling in medieval times.<sup>31</sup> Fulling is a process by which woollen cloth is felted to improve its texture and to thicken it by matting the fibres together. It was

*Fulling Stocks at Helmshore Mill in Lancashire. Clem Rutter*

originally carried out by pounding the cloth using the fuller's feet, hence the name 'walking'. In a mill, this process was done using fulling stocks. The cloth was put in a wooden trough, which also contained water and fullers earth. It was pounded by a large wooden hammer driven by the waterwheel. Although this mill would have closed by the end of the 17<sup>th</sup> century, the process continued to be used until the late 19<sup>th</sup> century.<sup>32</sup> When the fulling was complete, the cloth was stretched and dried on a frame known as a tenter, which would have been in the surrounding fields. The material was attached to hooks on the tenter frame, hence the saying 'on tenter hooks'

As with the other mills on the brook, it was fed by a leat, Waulk Mill strang separating the leat from the main course of the stream. The site was later called Doveys Mill, of which no details are known, which was replaced by the middle Wrens Nest forge.

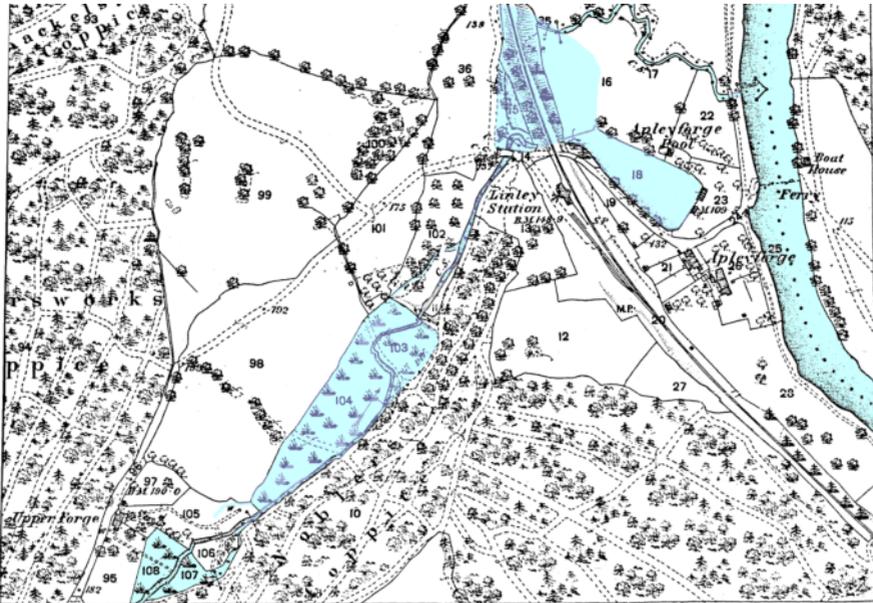
### **Needhams Mill (SO 704 985)**

There is only a passing reference to this mill being replaced by one of the Wrens Nest forges. Its date, function and exact location are not known.<sup>33</sup>

### **Wrens Nest Forges**

This complex comprised three forges near where the brook joins the Severn, on land then in the hands of the Stephens family. At some time in the mid 18<sup>th</sup> century, Needhams Mill, closest to the Severn, had been leased to the Madeley Wood Company. In 1765 George Matthews, who ran the Calcutts works, leased Doveys mill and by 1770 was also leasing Needhams Mill. Needhams Mill was used as a boring mill, probably for cannon made at the Calcutts works, and Doveys Mill was used as a slitting mill, making rods of iron for use in nail making.<sup>34</sup>

Matthews relinquished the lease in 1775 when it was taken over by the partnership of Wright & Jesson, who already had a forge at West Bromwich. They started a major development programme which eventually resulted in three forges being built. In 1773 they had taken out a patent for making wrought iron using a process named potting and stamping, and the Wrens Nest Forges were developed to produce iron by this method. Water supply was clearly a problem as in 1779, soon after acquiring the site, they installed a Boulton and Watt Engine to pump water back to the lower dam from the Severn.<sup>35</sup> The forge operated until 1815, when it was put up for sale; however, its remote location and the depression in the iron trade meant the forge was dismantled and machinery auctioned off.<sup>36</sup>



*The site of Wrens Nest forges shown on the 1882 OS map. Plots 107, 108 are the Upper Forge dam, plot 103 the Middle Forge dam and plot 18 the Lower Forge dam. The Waulk mill was situated north of the middle pool adjacent to number 102. The Severn Valley Railway cuts through the Upper Forge dam.*

### **Wrens Nest Upper Forge (SO 7105 9810)**

The silted up earth dam remains, together with a pair of 18<sup>th</sup> century workers cottages by the public footpath. In the stream bed at the southern end of the dam are brick foundations, possibly relating to the top of the spillway. Below the dam there are no remains of the forge, but the course of the tailrace can be seen

### **Wrens Nest Middle Forge (SO 7037 9829)**

The dam for this forge starts immediately below the tail race for the upper forge. The large dam is again completely silted up. The forge site is on private land and not easily accessible. It comprises: a large brick dam, the base of the forge building, tail race and the remains of bridges over the bypass channel.

### **Wrens Nest Lower Forge (SO 7061 9836)**

This site is now called Apley Forge. This does not appear on any contemporary documents and is not shown until the first 25<sup>th</sup> OS map of 1882, nearly 70 years after the last forge closed. The dam still remains

but this, and the forge site, was much altered in later works associated with the water supply for Apley Hall. Nearby are the forge master's house and a row of workers cottages.

### **Domestic Water Supply**

Before mains water, wells were the only source of fresh water to dwellings. From the 1820s onwards, the hydraulic ram provided a means of cheaply pumping water from nearby streams, providing an alternative supply. Originally invented in 1772, it was perfected by Joseph Michel Montgolfier, more famous for his hot air balloon flight. The pump is powered using a water hammer effect from a flow of water, with a low head, to pump a low flow of water to a high head. These simple devices run continuously with little maintenance, and during the 19<sup>th</sup> and early 20<sup>th</sup> century thousands of these pumps were installed, with many of them still remaining hidden away near the stream which fed them

### **Apley House (SO 7061 9836)**

The closure of the Wrens Nest forges was not the end of the use of water power at the lower end of the brook. Between closure and 1848, the dam was re-modelled and a substantial three chambered spillway was constructed.<sup>37</sup> The water from the dam was now used to drive two ram pumps located in an underground chamber below the dam. These provided fresh water from the dam to a cistern at Apley Hall in pipes



*Twin RAM pumps which supplied water to Apley Hall. K. Lake*

which can still be seen on the river bed under the suspension bridge. The pumps are marked Crump; however, this is not the mark of the manufacturer. Henry Crump of Bridgnorth was originally a painter but by 1851 he had become a master plumber, employing eight men and one apprentice. It would appear that Crump was associated with a scheme to supply fresh water to Apley Hall and had the manufacturer cast his name on the pumps.

The pumps still remain in their chamber. The railings surrounding the access stairs can be seen from the Severn towpath; however, the site is on private land and the access steps are unsafe.

### **Bould Farm (SO 6818 9825)**

To supply Bould farm, a ram pump was installed in a domed brick chamber similar to those used locally to cap disused shafts. The pump, which still remains, was built by John Blake Ltd of Accrington (now Allspeeds Ltd) who, as well as King George V, list the Right Hon. Lord Forester as being one of their customers.<sup>38</sup> A similar installation appears to have been built upstream of the Smithies Mill (SO 6739 9762), probably to supply water to Bank Farm, and there may have been others on the estate.

The domed chamber can be seen from the Linley to Willey Road. It is on private land and there is no public access.

### **Acknowledgements**

Lady Forester and the tenants of the Willey Estate.

Lord and Lady Hamilton, the Apley Estate.

Shropshire Archives

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<sup>1</sup> *The Wandering Worfe*, D.H. Robinson Wayne Research Publications (1980).

<sup>2</sup> *Victoria County History of Shropshire* (VCH) Volume 10, Oxford University Press (1998), p447

<sup>3</sup> SA 6007-19 shows Barrow and Shirlett, including Willey Furnace;

SA 6007-20 shows the hammer house and Nordley;

SA MI4809 is a copy of a map of Linley parish showing Bould Mill, Linley Mill, Frog Mill and the Waulk mill. The original is in private hands

Other maps of Willey are in the Forester collection at Shropshire Archives and are only viewable by special permission. These were used as the basis for the maps in the *Victoria County History*.

<sup>4</sup> *VCH* p.455.

<sup>5</sup> *VCH*, p.456.

<sup>6</sup> *The Seventeenth Century Foleys*, Roy Peacock, Black Country Society (2012).

<sup>7</sup> *VCH*. p456

<sup>8</sup> 17c Map of Shirlett by Samuel Parsons, Shropshire Archives (SA) 6007/19

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<sup>9</sup> *The Smithies Sawmill*, by P. P. Fenwick, (reference SA 1224 Box 162 f.12) deposited at the Ironbridge Gorge Museum Library.

<sup>10</sup> Op, cit (from SA 1224/7/18)

<sup>11</sup> Op, cit (from SA 1224 bundle 188 and 193)

<sup>12</sup> Op cit. Personal communication with Mr. Wilcox who resided at the mill in 1989.

<sup>13</sup> Map of Samuel Parsons 1625. SA 6007/20

<sup>14</sup> *Churnett Valley Iron*, H. A. Chester, Moorland. p8

<sup>15</sup> *John Weld of Willey, 1595-1665*, M.D.G. Wanklyn,, West Midland Studies, vol.3, p.91

<sup>16</sup> Op. Cit. P96.

<sup>17</sup> *Plott of Certain tenements and Lands Lying in the Parish of Linley*, Samuel Parsons 1639. SA MI4890 is a copy of this map which is in private hands.

<sup>18</sup> *John Weld of Willey, 1595-1665*, M.D.G. Wanklyn,, West Midland Studies, vol.3, p.94

<sup>19</sup> *Plott of Certain tenements and Lands Lying in the Parish of Linley*, Samuel Parsons 1639. SA MI4890.

<sup>20</sup> Astley Abbots Tithe, Shropshire Archives.

<sup>21</sup> SA 5380/2/45

<sup>22</sup> *Broseley and Its surroundings*, John Randall (1879). Randal associates the mill with Astley Abbots church, the Norman Lords of Linley and the Abbots Estate.

<sup>23</sup> Parsons 1639 Map, SA MI4890.

<sup>24</sup> SA XD3614/1/4/34

<sup>25</sup> SA XD3614/1/4/35

<sup>26</sup> Astley Abbots Tithe

<sup>27</sup> Report by Stephen's agent, W. Wyler Junior. AS 530/2/1/22. William Jones of Frog Mill was married to Margaret Street at Bridgnorth in 1833. Thomas Jones aged 58 of Frog Mill was buried on 15 October 1838 at Astley Abbots. On the 1841 census the mill was occupied by Elizabeth Jones, (80) farmer and 18 year old servant suggesting that William, her son, no longer resided at the mill.

<sup>28</sup> 1861 census and SA 4752/20/3/1.

<sup>29</sup> Kelly's directory of Shropshire 1870, 1871 and 1881 Census. Gretton probably replaced Pierce as tenant as on 6th September 1862 the Birmingham Gazette records the theft of a cock from his wife.

<sup>30</sup> Parsons 1639 Map, SA MI4890. Leasow refers to a meadow and slange to a thin strip of land

<sup>31</sup> In Cornwall, fulling was known as tucking, and in Wales the mill was called a pandy.

<sup>32</sup> Examples of fulling stocks are preserved at Helmshore Mill in Lancashire and the Armley Mills museum in Leeds.

<sup>33</sup> VCH p352

<sup>34</sup> Op cit.

<sup>35</sup> *The Industrial Revolution in Shropshire*, Barrie Trinder p123 ( Henry Williams-James Watt, 28 Aug 1779, Birmingham Reference Library Boulton & Watt Box 40).

<sup>36</sup> *Shrewsbury Chronicle*, 28 April 1815 and 7 July 1815.

<sup>37</sup> *Shropshire Union Railways deposited plan*, 1846. Shropshire Archives

<sup>38</sup> Water Supply for Farms, Country Houses, Villages, John Blake Limited, 1938