

**BROSELEY
LOCAL HISTORY
SOCIETY**



**Journal
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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 stored at the IGMT Tile Museum at Jackfield.

The Society has a website which contains information about Broseley, copies of the newsletter and articles from previous journals at www.broseley.org.uk

The Journal

This, the 21st issue of the Journal, presents six articles which illustrate the wide range of interests of members of the Society. Two of the articles, those on Bradley and on Working Women, cover talks given by the authors to the Society earlier in the year. Richard Barker's fitting tribute to the late Douglas Braid reminded me of the time I met the grand old gentleman when he visited this area about ten years ago, researching John Wilkinson. Finally in this issue, we have revived the correspondence section.

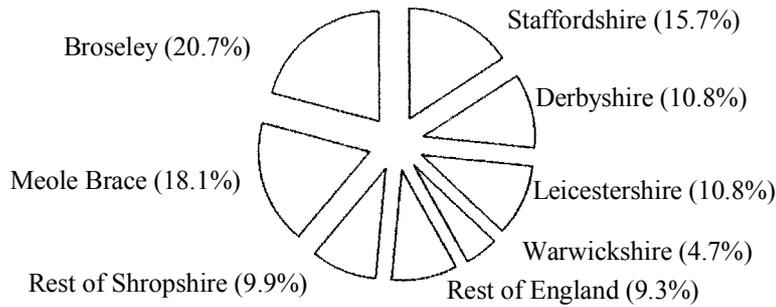
Contributions for the next issue of the Journal would be welcome and should be sent by 31 August 2000 to the Editor, Neil Clarke, Cranleigh, Wellington Road, Little Wenlock, TF6 5BH.

RAMSELL: WHAT'S IN A NAME ?

by Jim Cooper

A look at any telephone directory today will show how uncommon is the name 'Ramsell' and its variants. There are only three entries under Shropshire but it has not always been so rare in this county. The International Genealogical Index of the Church of Jesus Christ of Latter-Day Saints (Mormon I.G.I.) for England reveals a predominance of events (baptisms and marriages) in Shropshire with 26% of marriages and 49% of baptisms occurring within the county. Baptisms within Shropshire were most often recorded in Broseley and Meole Brace.

Ramsell Baptisms in the Mormon I.G.I. (343 in the whole of England)



An examination of when baptisms occurred shows how the name might have spread from Broseley via Meole Brace to Leicestershire, Derbyshire, Warwickshire and East Staffordshire:-

	Pre 1700	1701-1750	1751-1800	1801-1850	1851-1900
Broseley	13	44	17		
Meole Brace		5	43	21	
East Midlands	1		17	87	33

N.B. In the table above baptisms in the East Midland Counties of East Staffordshire, Leicestershire, Derbyshire and Warwickshire have been combined because most were recorded in parishes situated in an elliptical area, 12 miles by 30 miles, beginning just south of the A5 at Kingsbury, Warwickshire and then running north-east of the A5 from Tamworth through Burton upon Trent and Ashby de la Zouch to Stapleford east of Derby. This area straddles the borders of the four counties.

My Great Great Grandfather, John Cooper, married Tamer Ramsel in 1837. Neither her first name, nor her surname, were familiar to me and, being less common than my own, the prospect of tracing her family tree appeared to be easy and attractive.

According to Census Returns, Tamer was born in Lilleshall but a search for her baptism in the Parish Register found no Tamer Ramsell, but instead Tarza, daughter of Thomas and Ann Romsey. Surely this was the event sought but hunches have no place in serious research without good corroborative evidence. Using the Mormon I.G.I. it was easy to construct a possible family tree assuming that Thomas and Ann Romsey were really Ramsells and that they came from Meole Brace. It was even possible to link the Meole Brace Ramsells to the Broseley Ramsells. After confirming the events found in the I.G.I. by reference to the Parish Records it was time to look elsewhere and the Lilleshall Poor Law papers in the Shropshire County Record Office contained a Settlement Examination of Thomas Ramsey whose wife was Ann, but more importantly his father was Francis RAMSEL. This document named each of his children that had come with him and his wife from Meole Brace. Their youngest child Tamer was not named but surely it was her baptism on 19th May 1811, the day before the examination, that alerted parish officials to these immigrants. Furthermore one of their children, Richard, who was aged 13 at that time would appear to be the same Richard aged around 40 who was at Tamer's house during the 1841 Census. The Settlement Examination, by the Magistrates, was to determine which Parish would be responsible for the family's care in the event of their destitution. The findings were that both Thomas and his father were parishioners of Broseley:-

SHROPSHIRE } The Examination of *Thomas Ramsey* an Inhabitant of *Domington*
To wit } *Wood* in the Parish of *Lilleshall* in the said County, *Collier* made touching the last place of *his* Legal Settlement taken and before us *Richard Whitworth Esquire* and *Ralph Leeke Esquire* two of his Majesty's Justices of the Peace in and for the said County, this *twentieth* Day of *May 1811*

This Examinant saith, that *he* is about *thirty nine* Years of age, was born at *Pulley Common* in the Parish of *Brace Meole* in the County of *Salop* where his Father *Francis Ramsel* then lived but was a Parishioner of *Broseley* in the said County And this Examinant saith that the place of his legal Settlement is in the said parish of *Broseley*, he not having ever done any act to gain a Settlement separate from his said Fathers since his Birth and hath a Wife named *Ann* and six Children born in lawful wedlock (that is to say) *Francis* aged *seventeen* years, *Richard* aged *thirteen* years *Deborah* aged *eleven* years *Ellen* aged *seven* years *Jesse* aged *five* years & *Allen* aged *two* years and *six months* or thereabouts.

The mark of

X

Thomas Ramsey

Taken and Sworn at *Newport* in the } *R Whitworth*
said County, the Day and Year first }
above written, before us } *R Leeke*

This one document provided the links from Broseley to Meole Brace and then to Lilleshall. With few exceptions most of the events listed in the Mormon I.G.I. have been linked into one family tree which reveals that neither Thomas nor his father were baptised in Broseley and indications are that they had never lived there. It was Thomas's Grandfather, William, who must have moved to Meole Brace in the period 1736/40. He had been baptised in Broseley but buried in Meole Brace. The tree itself comprises 161 individuals in seven generations and the majority of Ramsell baptisms in Meole Brace lead back to William. Likewise the majority of Broseley baptisms lead back to William's own Great Grandfather Samuel Ramsell. Shropshire County Record Office also held an index from Warwickshire County Record Office of Shropshire references in their own archives and it contained two references of interest. The first related to a Certificate of Settlement issued by the parish of Broseley to the parish of Bedworth in respect of Edward Ramsell and his wife Elianor and dated 7th October 1740:-

"We the Churchwardens and Overseers of the Poor of the Parish of Broseley in the County of Salop; hereby certify that we do Own and Acknowledge Edward Ramsell (Collier) and Elianor his wife to be both Inhabitants Legally Settled in our said Parish of Broseley And we do hereby Promise for our selves and Our Successors to receive them in to Our said Parish of Broseley when ever they shall become chargeable to your said Parish of Bedworth In witness whereof we the said Churchwardens and Overseers have hereunto respectively set our hands and seals the Third Day of October in the fourteenth year of the reign of our Sovereign Lord George the Second by the Grace of God of Great Britain France and Ireland King Defender of the Faith and so forth and in the year of Our Lord One Thousand Seven Hundred and Forty."

This Edward Ramsell was quite probably brother to William Ramsell who was moving to Meole Brace at about the same time, and Bedworth was just within the elliptical area of the East Midlands mentioned earlier.

The second document dated 14th February 1758 was a removal order issued by Bedworth Parish in respect of John Beddow's widow, Elizabeth:-

"Whereas Elizabeth Beddow widow of John Beddow who was the son of Francis Beddow who for some time dwelt in the said Parish of Bedworth in the County of Warwick being allowed so to do, by reason of a certificate bearing date the Eleventh Day of August 1714 under the Hands and Seals of the Church-wardens and Overseers of the Poor

of the said Parish of *Broseley in the County of Sallop* attested”

The order was made to send Elizabeth and her three young daughters to Broseley where they would receive Poor Relief. Now Tamer Ramsell’s mother was Ann Beddow, who was christened at Great Hanwood but whose father was baptised in Broseley and, although no link has yet been found between Ann and John Beddow, the document is further evidence of migration from Broseley in the early 18th century.

The place, Broseley, and the time, 1700-1750, were part and parcel of the Coalbrookdale Industrial Revolution. There was plenty of work available in the area, but there was also demand from other coalfields for workers experienced in the Shropshire long-wall method of coalmining. J.U.Nef in his book *The Rise of the British Coal Industry* (1932) thought that the migration of Shropshire colliers to other coalfields during the eighteenth century suggested that Coalbrookdale was probably more developed than other Midland fields during the seventeenth century. Meole Brace and Hanwood near Shrewsbury, and the East Midlands, were both coal mining areas. The prospects of better pay and other inducements might tempt colliers and an entry in the records of the Griff Coalpit near Bedworth illustrates this well:-

“Oct. 19th. 1729 Tho. Marler Expences going for men into Shropshire.

8 men 2s. 6d each paid them to bear their charges £1

The Ramsells, whether found in nineteenth century Registration Certificates and Census Returns or in eighteenth century Poor Law Records, were almost always miners or colliers. It is an historical cliché to describe mining communities as a different species of the human race but nevertheless it was true that there were families of miners over many generations. The Ramsells might even have been amongst the “*lewd persons, the Scums and dreggs of many countries from whence they have bine drivern... thieves... horrible Swearers... daillie drunkerds, some having towe or three wyves a peece now living, others...notorious whore mongers*” who upset the local populace so much when James Clifford brought them in to work his mines in the early years of the seventeenth century. Certainly the earliest Ramsell entry, in the Broseley Parish Registers, was the baptism of John son of Samuel and Joane on 24 September 1643. Whilst this was one of the earliest mentions listed in the Mormon I.G.I., there were earlier, isolated, mentions but no apparent pre Civil War communities of the name. Most probably this was because surviving records from that period are scarce or not included in the I.G.I. However, post Civil War the Ramsell name flourished initially in Broseley and subsequently in Meole Brace before scattering eastwards and becoming one of the rarer modern surnames.

We have perhaps already seen a clue to this modern rarity in the Settlement Examination of Thomas Ramsey (born Ramsell) in 1812. Another Thomas in 1822 also referred to himself as Ramsey when seeking a licence to marry Mary Overton who was not then of age:-

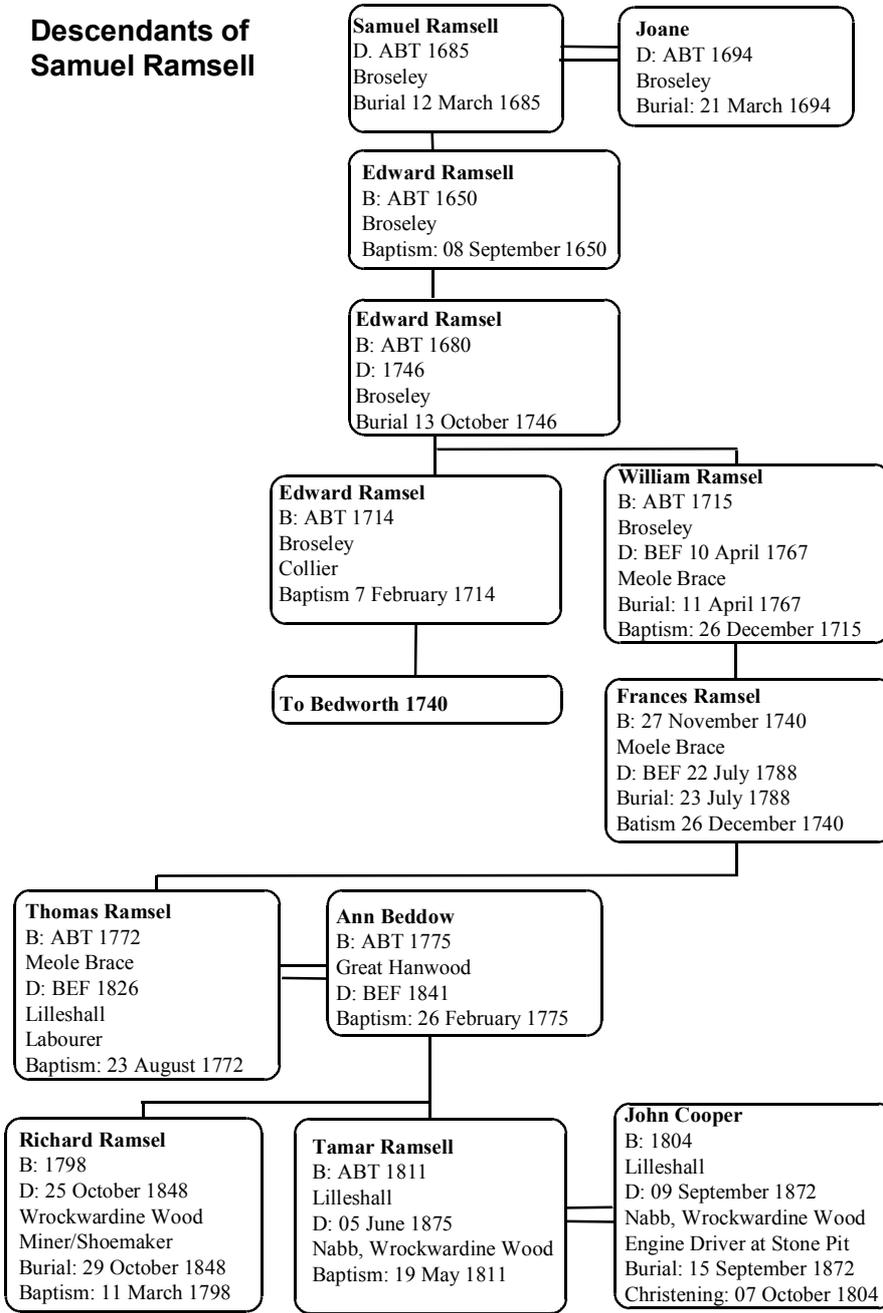
*“ ...that his **true Christian & Surname** are Thomas **Ramsey**, & that his usual place of abode is in a house situated in the Parish of Brace Meole aforesaid where he hath resided for the space of four weeks last past & upwards, in which house he is a lodger, and secondly the said Mary Overton made both that she is a spinster & is under the age of twenty one years & her true Christian & Surname are Mary Overton, that her usual place of abode is in a house situated in the Parish of Pontesbury aforesaid, where she hath resided for four weeks back past & upwards, in which house she is a lodger.”*

Yet one month later, on 1 December 1822, the Meole Brace Parish Register records the marriage of Thomas RAMSELL and Mary Overton. In both of these instances the Ramsell concerned was being investigated by people unfamiliar with both their name and perhaps their accent. Mistakes were easily made and unlikely to be noticed by illiterate colliers. Indeed variants include Ramsel, Ramzel, Romsel, Romshill, Rumsel, as well as Rumsey. Perhaps in the end it was easier to adopt the more common but acceptable surname Ramsey.

Sources

Census Returns 1841	Wrockwardine Wood
Census Returns 1841	Pulley Common, Meole Brace
Church of Jesus Christ of Latter-Day Saints	International Genealogical Index
Shropshire County Record Office	Lilleshall Parish Registers
Shropshire County Record Office	Broseley Parish Registers
Shropshire County Record Office	Meole Brace Parish Registers
Shropshire County Record Office Ref. P161/L/5/139	Settlement Examination
Warwicks County Record Office Ref. DR225/326/124	Settlement Certificate
Warwicks County Record Office Ref. DR225/333/36	Removal Order
Shropshire County Record Office Ref. 4511/Lic/1	Marriage Licence
J.U. Nef	The Rise of the British Coal Industry
T.S. Ashton	The Coalminers of the Eighteenth Century
	(The Economic Journal Jan. 1928)

Descendants of Samuel Ramsell



THOUGHTS ON JOHN WILKINSON AND BRADLEY

by Ron Davies

John Wilkinson was never satisfied with his lot - the old and the new Willey Furnaces and the Bersham Furnace would have kept any other ironmaster happy, but for John Wilkinson the Midland plateau with its virtually untapped mineral resources was a challenge. No other ironmaster had dared to take up the challenge, for the region lacked the heady streams that could turn water wheels and generate power enough to maintain a furnace in blast. Minerals, especially ironstone, had been mined here for centuries in small quantities, but were then transported to blast furnaces situated on the River Tame, which flowed to the east of the region, or to the Stour and the Smestow running to the west.

It was not until the 1760s that John Wilkinson, now with some wealth, took up the challenge. The place he chose was Bradley, a small estate or former manor consisting of some 556 acres of land. It was an area unusual inasmuch as it was practically surrounded by the much larger Sedgley Manor. This belonged to the Earl of Dudley, from whom John Wilkinson wished to be independent (except when it came to his need for the proposed Wolverhampton to Birmingham canal to run through his Bradley estate). At one point the township of Bilston touched Bradley which somehow came within its jurisdiction. Whilst both Sedgley and Bilston came within the Seisdon Hundred to the west, Bradley came within the Offlow Hundred to the east. In all the locality was deeply rural with its meadows and farmlands, woodlands and hedgerows. It had very little in the way of habitations, though it had one great asset in the highway now called the A41, running on its north-eastern boundary and leading directly to Birmingham.

It was close to here that Wilkinson circa 1768 commenced the building of what was to be the first, the Mother Furnace of the later so-called Black Country. The spot was called "the Fiery Holes" owing to the surface coals being on fire. Whether this phenomenon was happening before Wilkinson's time or whether his works were the cause of it may never be known. Generally this "wildfire", as it was called, was, from personal boyhood knowledge, to be found on old furnace sites, where the little smoulderings gave off an unusual earthy stink and were the homes of colonies of crickets which enjoyed the all the year round warmth they offered!

Very little is known about the Bradley furnaces in those early years; no

planning permission was needed for such building purposes, though there may have been taxes paid on certain mineral and iron tonnages. All this is now obscure, needing much time and research, probably at the Stafford Records Office. John did write to Matthew Boulton on October 11th 1772 about the success of his furnace: "I have at last succeeded in using coal in my furnace". This was what it was all about; it was of little use any ironmasters coming into this area unless their furnaces were capable of using the bounty of the coal that lay here, but how Wilkinson accomplished this in an environment lacking natural water power is uncertain. The all-important Newcomen fire or atmospheric engine was available, and could have been installed to pump up water from the bowels of the earth into a reservoir. This would perhaps serve instead of a stream if the water could be channelled to flow with sufficient force onto a water wheel, which in turn would work bellows to give the required blast.

The direct blast engine to blow a furnace had not yet been made available. John, ever mindful of this need to blow directly into a furnace, worked tirelessly to achieve this breakthrough by experimenting with the Newcomen engine, and must have had some success. John Wilkinson was a very shrewd person; would he have gambled all on such a venture? Would he have come to Bradley with only the old ideas? This was an area that needed a completely new way of thinking, and the water wheel came nowhere near to fulfilling the great potential to be exploited here.

Coal, or rather its derivative coke, had been used for decades for charging into the furnaces at Coalbrookdale, but water had still been the main driving power, which limited the spread of this revolution outside the Dale. To Wilkinson the Dale was supreme and he developed its methods to the full. He knew that if the iron trade was ever to attain its real potential all the problems of using coal for the blast furnaces had to be overcome. For the metallurgically uninitiated, perhaps a little information regarding the problems - simply, coal is not without its impurities, the biggest offender being sulphur. If sulphur contaminated the iron, especially wrought iron, it caused it to split or crumble when heated and hammered in the forge, making it useless as a product. The only remedies were to coke the coal if the coal were suitable, which it rarely was in the Black Country, or else to have the blast strong enough to burn away the impurities in the blast furnace. Until these times charcoal had been the main furnace fuel owing to its purity, but the large quantities needed were depleting the great woodlands to a level causing concern. Hence there was this great need to find an alternative fuel, for iron was now becoming a necessity as more and more

uses were found, especially by John Wilkinson, for this adaptable but still rather scarce commodity. That John not only succeeded in using coal in his furnace but also increased its yield to 20 tons of iron per week from the previous 10 tons, might suggest that the furnace layout had also been modified to accomplish this feat. If John's claim was true, it was a great leap forward by any standard of his time. (For interest I quote the tonnage produced by the last Black Country furnace, "The Elisabeth", which was 5,500 tons per week, whilst some larger furnaces produce as much as 17,000 tons per week).

During the four or five years it took John to build and experiment the underlying costs must have been enormous, including a sizeable labour force that came mostly from Shropshire and Wales, the Bilston folk having probably never heard of a blast furnace let alone having the skills that John needed to get his works going. He needed furnace builders, pit sinkers, engineers, furnacemen, bricklayers, carpenters and many more. Probably families came too; they had to be housed and fed - the whole undertaking must have been colossal. By 1771 a new canal had been laid down from the Staffordshire and Worcestershire canal at Autherley to Birmingham, looping enormously at one point to pass through the bountiful coalfields and the Bradley estate, where it later triggered off the building of new furnaces and works. A new residential area included two public houses, The Swan and later The Great Western, and by 1860 a mission church. One row of houses was known as Twenty House Row; soon there were Rows everywhere - Water Row, Shropshire Row, Clerks' Row, Workman's Row and so on.

Wilkinson's early years at Bradley brought some success and satisfaction, but were they a mistake? He had to make his move at sometime. He had worked hard and at great cost to prove it could be done, but if he had waited just a few more years the real dream of smelting iron with coal was about to come true. But he could not know this, for it was not until 1774 that he was contacted by James Watt, a Scottish scientist who had come to Birmingham to use the facilities offered by Matthew Boulton at his Soho Works, to bore a cylinder for his new and improved beam engine. This work was duly carried out by Wilkinson (he being the only person at that time able to carry out such a task) and the said engine was eventually set to work at a colliery at nearby Bloomfield, in Tipton, on Friday 8th March 1776. On the success of this machine John immediately ordered one modified to directly deliver blast to his furnace at Willey. In that same year of 1776 it was duly installed and put to work. That this machine was a great success was no overstatement for there was more than enough blast supplied. So it was at Willey that a new industrial revolution was born; this part of Shropshire was truly the cradle of

industrial revolutions.

With the success of this machine the wealth of the Staffordshire coalfield could now be exploited, and John had a flying start. Even though by 1800 the yield of a furnace little exceeded 30 tons per week the future of the iron trade was nevertheless now assured. As yet the real exodus to these Midlands had not started, though the production of pig-iron and certain casting work was assured and the population was gradually building up. But if pig-iron had to be converted to the much-needed wrought iron, it had to be carted or shipped to the fineries established along the earlier mentioned streams to the east and west of the Black Country, there to be converted and passed on to the forges and slitting mills. These were processes that would have been impossible to carry out at Bradley, where John would have had to be content to sell his pig-iron to these other manufacturers.

Yet very soon there would be another very important factor in place. As we have noted, James Watt had perfected the reciprocating engine to pump water and to pump air. He incautiously mentioned to Wilkinson the possibility of a rotative engine, capable of turning rolls or working a forge hammer, and from then Wilkinson never ceased his demands until he had such an engine at work at Bradley. The first one, in 1783, was set to work a forge hammer. James Watt, pleased with his new engine, wrote to Matthew Boulton on March 26th 1783 - "We have got the forge engine at Bradley set to work yesterday morning which performs very well. They made it go at the rate of 240 blows per minute, though the hammer weighs 7 hundredweight and lifts 2 feet 3 inches".

Mr John Price, a well-known Bilston printer and historian, wrote in his 1835 "Historical Account of Bilston" (page 84)- "In the year 1768 an act was obtained for making a navigable canal from Birmingham to Bilston and from thence to Autherley, which has been of vast importance to the proprietors of lands and mines in this Town and Neighbourhood. Blast furnaces for the smelting of iron began to be erected about this time in this Township, the first of which was that belonging to the late John Wilkinson Esq. near the Fireholes, another was erected by the same Gentleman close to the canal at Upper Bradley, and one at the western extremity of the Township (Springvale) by the late John Bickley Esq. The first forge for the making of Iron from the Pig was established near to the Old Furnace aforesaid, by the said John Wilkinson Esq. about the year 1782. The writer of this narrative was present when the first Ball was put under the hammer." So by now John must also have established a finery to convert the pig to wrought iron!



BRADLEY IRONWORKS 1836 (Robert Noyes)

It was in 1781 that Watt invented a model steam rolling mill, with two cylinders and two beams, which astonished all the ironmasters. Wilkinson at once ordered one to be made on a large scale for his Bradley works. He had already ordered a powerful engine in which Boulton proposed to employ the double cylinder with double crank and a pair of flywheels, for the Bradley works. When these engines were installed is not certain, but in 1791 Boulton wrote in December "There is not a single water-mill now at work in Staffordshire. They are all frozen up, and were it not for Wilkinson's steam-mill the poor nailers must have perished, but his mill goes on rolling and slitting tens of tons of iron a day".

So it was that a great and momentous era was born; at last the world's coalfields could be exploited, and life on this planet was never going to be the same again. Coalbrookdale had rightly earned the title "The Cradle of the Industrial Revolution" but this was something quite different. Engineers now had something to work on - always inventing, always improving, there was innovation after innovation. John Wilkinson founded not only the modern iron trade but also our present lifestyle that we take so much for granted. With

all this new technology in place John was able to expand his works at Bradley, at the same time encouraging others to share the bounty. Bilston especially became a boom town with coal pits virtually in every backyard. Even the main thoroughfare of Swan Bank had a coal pit, the only untouched spot lying beneath the parish church of St Leonard. A king's ransom existed there, so much demand was there for the black diamonds. By 1792 there were at least thirteen types of steam engine in operation at the Bradley works, including forge, colliery, pumping, gun boring, blowing, boring and turning and rolling and slitting engines. By 1786 Wilkinson had started making boiler plates, and the following year he launched the first iron boat, "The Trial", at Willey Wharf. From this time Bradley became an important manufactory of such vessels.

The Staffordshire historian the Rev Stebbing Shaw wrote in 1800 - "At Bradley, ironworks have long been established by John Wilkinson, where various branches of founding, as well as forge, are carried on upon a large scale, to which great additions and improvements have been recently made in separating the dross from the ore by using huge concave rollers instead of hammers. A more particular and valuable account recently communicated of this great manufactory (where iron boats are made for the canals etc.) has been unfortunately lost for the present." Sadly it proved to have been lost forever.

So interesting and important enough were these works that even Royalty came to witness the great events taking place here. The Polish Princess Cambristka and her son were most impressed, and it is said that King George IV visited the works incognito, and could not fail to be impressed by this new form of industry. John knew well its infancy and wrote expressing his concern to the executors and trustees of his estate - "I leave my different works as Children in Trust for Sixty-three Years - That a great example may be given of the importance to the world, and benefit to the industrious workman, arising from Infant Works being protected until their arrival at a proper maturity". John Wilkinson seemed wealthy enough to make certain that his works survived and evolved as he had laid down in these instructions to his Trustees, but two of them soon relinquished their responsibilities and another two died soon afterwards. This combined with family discord to cause years of litigation, inevitably ruining his industrial empire. Parts of his works survived in one form or another, being taken over by independent ironmasters.

By the 1830s the Wilkinson family had severed all ties with Bradley when the estate, along with many others, was sold to meet the costs of litigation. It

was in the 1830s that Upper Bradley was created when streets, houses, shops, public houses, various businesses and churches were built to accommodate an ever growing population. It was not until the 1920s that Bradley finally ceased to be an iron producer of any importance. It was a time of slump and the old village was first to feel the repercussions - with no work available, the inhabitants moved out, mainly to other parts of Bradley where small foundries survived. Of all the blast furnaces formerly in the area only two remained, Willingsworth and Springvale. Willingsworth, on the borders of Wednesbury, was blown out after the Second World War, and Springvale in circa 1980, so ending two hundred or so years of iron production in the Black Country. Steel by the thousand tonnes still passes through the area however, bound for the numerous industries established here. So for the time being at least iron still plays an important role in these Midlands.



KING STREET, BROSELEY,

April 24 - 1915

M R Smith

Bot. of MATTHEW DAVIS,

Terms: Cash. **Best English Meat only supplied.**

Description	lb.	oz.	d.	£	s	d.
Beef ..						
.. Steaks ..						
Beef's Heart ..						
.. Cheek ..						
.. Tongue ..						
.. Shin ..						
Veal ..						
Mutton ..						
.. Chops ..						
Lamb ..						
Pork ..						
Suet ..						
Calf's Head ..						
.. Race ..						
.. Feet ..						
Sweetbreads ..						
Kidneys ..						
Tripe ..						
Mawskins ..						
Brawn ..						
Bacon ..						
Sausages ..						
Pigs' Puddings ..						
Savoury Ducks ..						
Pork Pies ..						
Pickled Tongues ..						
Received				£		

Handwritten notes in table:
 - Next to 'Beef ..': *2 1/2*
 - Next to 'Beef's Heart ..': *1 9/2*
 - Next to 'Lamb ..': *1*
 - Next to 'Pork ..': *1*
 - Next to 'Suet ..': *1*
 - Next to 'Calf's Head ..': *1*
 - Next to 'Race ..': *1*
 - Next to 'Feet ..': *1*
 - Next to 'Sweetbreads ..': *1*
 - Next to 'Kidneys ..': *1*
 - Next to 'Tripe ..': *1*
 - Next to 'Mawskins ..': *1*
 - Next to 'Brawn ..': *1*
 - Next to 'Bacon ..': *1*
 - Next to 'Sausages ..': *1*
 - Next to 'Pigs' Puddings ..': *1*
 - Next to 'Savoury Ducks ..': *1*
 - Next to 'Pork Pies ..': *1*
 - Next to 'Pickled Tongues ..': *1*
 - In the bottom right cell: *£*

WORKING WOMEN OF THE BOROUGH OF WENLOCK

by Sue Harvey

In 1994 for an Open University Course "*Family and Community History 19th and 20th Century*" I researched the working lives of women, relying mostly on Trade Journals and the 1881 census for my paper *Working Women 1881*, taking two areas of heavy industry: namely Ruabon and the Borough of Wenlock. The choice was based on personal interest as my father's family came from Ruabon and had settled in the locality of the Borough of Wenlock by 1908. Because of this I also knew that the Iron Masters of Wenlock had capital interests in the Ruabon area and that in many ways the two districts were alike. I was interested in finding the differences and I wanted to know what the women did. Because my maternal and paternal grandmothers had never been content to sit on a cushion and sew a fine seam, I questioned the prevailing ideas that women had never gone out to work (except in times of war) before the voluble Miss Libber's had burnt their bras in the late 1960s. I am pleased to say that the 1881 census for the Borough of Wenlock did not let me down.

So what were the lives of the women like in 1881? A bit better than in 1861. 1881 women probably still had to fetch all the household water from the local pump or standpipe or well and they still had to cook on an open fire, but by 1881 they had a bit more furniture in their houses which meant they could all sit down as a family to a meal, though the children were usually on forms (benches). But most skilled labourers with regular work were only a decade away from dreaming of owning a piano or a sofa. The washing was done in a shared wash-house (that continued at least till the 1950s, as I know from my own experience) and was usually washing and rubbing at a slop-stone sink and boiling in the copper fired from underneath with sticks and coal. A row of terraced houses would share a wash-house and be allocated a day... Monday going to the older tenant. The lavatory was usually a hole in a scrubbed whitewood board boxed over an open sewer, and each household had its own hole. Not as people later thought, all sitting down together. Housework was hard labour with few tools; gardening was hard labour; keeping fowl and fetching water was hard labour especially for pregnant women, though their menfolk often did help; and though they have emerged by popular legend as drunken brutes, they were not always of that ilk. But life as we know was not then cushioned by state pensions or the welfare state, so if there was means of earning a penny by man or woman they went for it. There was however a certain hypocrisy

because men needed to feel that they earned enough so their wives did not work, and women wanted to have husbands that followed this middle-class ethos. This makes it difficult to discover just how much part-time work married women did, but most of us who had Victorian grandmothers knew that they did work either in the home or outside of it for money. For instance, two of my great grandmothers were trained midwives... and they trained after their children were grown. And one grandmother spent every hour she could brass-filing within the home and the other was a pub landlady. The pub was licensed to my grandfather but he managed Doseley Pipe Works during the day, so my grandmother looked after the pub until about seven of the evening. It closed at 9.30pm but it was not closed during the day. I daresay that all of them appeared on the census as 'wife' and nothing else.

For most of the nineteenth century, if you were working class conditions were awful. A report from the Sanitary Inspector of the Borough in June 1877 regarding conditions in the Broseley Ward, which included Jackfield, makes mention of the one bedroomed house of Thomas Goodall near the Napoleon Inn accommodating Thomas, his wife and five children under twelve... the cesspit overflowing full and pig manure was accumulating nearby. The Inspector had to serve notice on anyone who harboured a nuisance on his property ranging from cesspits to open drains, ash heaps and spoil tips. These had to be removed or the owner would be charged for removal. Most inhabitants were tenants and therefore we see a beginning of better conditions in these reports and the action taken if owners ignored them. The printed report sheets were purchased by the ream (500), which gives us some idea of the scale of the problem. Therefore when you see reconstructions in museums of workers cottages be careful not to assume that they are typical. Most people had little furniture, little equipment and could not afford the coal for the large ranges even if their landlord had fitted them. The local bakers cooked most of the baked and roasted dishes for which he earned a penny. You supplied the food. But the diet generally tended to be boiled potatoes and cabbage and bacon from a twenty score sow. Museum reconstructions usually are only a gathering together of equipment from a certain period and though some had sewing machines and some had bread ovens and some had sufficient pots, pans and furniture, the majority of cottages were pretty bare; food, warmth and boots came first.

But extras were available if you had the money; and so most women worked if they could after they were married, if only harvesting, sewing or cleaning or child minding. Of course if you were the baker's, butcher's or chandler's

wife, you expected to help in the trade. And if you were left a widow by such a tradesman, you often continued on your own... which does make one wonder! Though of course you were lucky to be left a widow, as many wives died in childbirth.

This then was a general picture of life for working class and lower middle class women throughout England whether in rural areas, market town or industrial city. In the mill towns it is well known that women worked, but areas of heavy industry have created problems for historians in that the census usually listed wives only as wives and it was taken in Spring when there was little call for women to work on the land. And unless you ran a business your name did not appear in trade directories. But the Borough of Wenlock, besides having ironfounding, coalmining and limestone workings, also had a clay industry that extended beyond bricks and pipes. And for making bone china and porcelain, clay pipes and encaustic tiles they needed skilled craftsmen and women. Since quite a number of married women appear on the 1881 census for the Borough of Wenlock (and including Little Dawley and Horsehay) as working at skilled trades, the area was probably more prosperous than most. It certainly had more women declaring their employment than the district of Ruabon. And interestingly enough there were a good many more pit girls in the Borough than are to be found in Ruabon. (7 only in Ruabon against 117 in the Borough of Wenlock).

Charles Booth in his survey of the London Poor (1880s/1890s) observed of washerwomen that "it is an unpleasant fact (that) many of them work only when their husbands are unemployed.." I did not find that to be true in the Borough or in Ruabon district but observed instead a correlation between population numbers and washerwomen. Often enough a washerwoman would be widowed but that was not always the case. Married women also kept shops and so did single women and widows. The following list for the purpose of my paper did not discriminate between innkeepers and barmaids nor shopkeepers or assistants, but in general it may be assumed that it was the single women who were the assistants. Domestic servants were never listed as married but there were often widows and, because there were so many of them, I listed them together.

**List of Women's occupations:
Parts of Borough of Wenlock* and of Dawley** Taken from
1881 census.

*Excluding Ditton Priors, Hughley, Monkhopton and Shipton

	Unmarried	Married	Widowed
-			
Authoress of Poetry	1		
Bakers and confectioners			5
Barmaids /hoteliers/innkeepers	11	1	13
Bookseller		1	
Boot and shoemakers/bootbindres	3	2	
Brewers and maltsters		1	
Boxmaker		1	
Charwoman		3	8
Chinaworkers/paintresses etc	55	24	4
Dairymaid	4	1	
Domestic servants	897		
Drapers assistants/pawnbrokers assistants	5		
Dressmakers, tailoress/milliner/staymakers/ hosier (See end note)	105	43	16
Eating house proprietress			1
Encuastic tile workers	15	19	
Errand girl	1		
Factory girl	1		
Fancy businness		1	
Framers/Farming/Cowkeeper	1	1	5
General dealer		5	
Goes out to work	1	1	1
Grass widow		1	
Grocers/greeengrocers/grocery assistant	11	2	5
Hucksters and Hawkers of Oranges, pottery, haberdashery, baskets	3	3	5
Ironworks labourers	1	1	
Labourer in brickworks	1	1	
Labourer on Pit banks	111	4	2
Laundress, washerwoman, keeps a mangle	13	29	19
Letter carrier		1	
Lodginghouse keeper			2
Milkseller		1	1
Milkmiad	2		
Nail sorter	1	1	
Nurses, midwives, sicknurses	12	7	5
Office cleaner			1
Organist and musician	3		

	Unmarried	Married	Widowed
-			
Print seller	1		
Postmistress assistant	1		
Scripture reader		1	
Shopkeeper/assistant	2		6
Stationers assistant	1		
Teacher, governess, schoolmistress and school proprietress	38	5	3
Tobacco Pipe worker	26	14	7
Toyshopkeeper	1		
Travelling person	1		
Warehousewoman		1	
Wisket Warehouse(?)		1	
.			
Total women with stated employment	1,615		
Unable to work	1		
Domestic servants unemployed	29		

Domestic servants where they were family members excluded. Also Housekeepers as it was sometimes an interchangeable term with housewife. The totals above are therefore the minimum. Also harvest work and childminding were not mentioned in the census so this is another area which is under-recorded.

Because I took the area of a heavy industry within the Borough of Wenlock and that of Dawley on its northern fringe I could only estimate the females (ten to ninety years old) as about 8,000.

END NOTE: Dressmaker was often a euphemism for prostitute, so the heading Dressmaker/Tailoress/ Milliners/Staymaker and Hosiers might wall include those following a different occupation.

After this census was taken women would have found jobs in new areas. Almost always telephonists were women and almost always in large offices typists (or typewriters as they were called in this country) were also women. Women of the district worked in munitions (mainly at Coalbrookdale works during the First World War), a job that turned their skins yellow. Women worked the land and women drove the ambulances and rode motorbikes. After the Second World War, when they had stopped making spitfires, women were making cores in the ironfoundry and inspecting castings in Coalbrookdale; or making rubber rugs, tin trays, powder compacts or drilling and fitting silencers at Coalport; or making tiles or brass fittings at Jackfield; or catching the bus to work in the carpet factory at Bridgnorth, or at Sankeys Hadley..... the list is endless. Women work? Of course they did!

SHIRLETT SANATORIUM

by Victoria Cox

To the casual observer, the only signs of settlement in Shirlett are a few farm cottages. However, a detour onto the hillside will disclose its real historical importance, for there stands a lasting monument to tuberculosis in the early twentieth century, a purpose built sanatorium. At the time, tuberculosis was sweeping the nation, and one of the only ways to treat the disease, without adequate medicines to cure it, was to send people to isolation hospitals.

The 'Association for the Prevention of Consumption and other forms of Tuberculosis in the County of Shropshire and the Hundred of Maelor' was founded in 1911 to establish a sanatorium in the County, to educate the public about the means of spreading tuberculosis and its prevention, to influence public bodies to exercise their powers to prevent tuberculosis, and to take 'any other measures which may be practicable for the prevention of... tuberculosis'.¹

Reasons for building the sanatorium

In the 1900s in Shropshire, lung tuberculosis caused more deaths than all the other infectious diseases, with over 120 deaths from the disease per year.² In 1907 there was only one institution in Shropshire that would accept tuberculosis patients, with general hospitals specifically excluding such cases because of the contagious nature of the disease.³ With tuberculosis diagnosis rates and death rates increasing quickly, something had to be done and without a cure, sanatoria seemed the next best solution. The problem was heightened when the returning soldiers from the Great War brought an influx of tuberculosis. The Shropshire tuberculosis death rate was higher in 1918 than at any other time since 1906 and Shirlett was running at full capacity.⁴

Tuberculosis affected every part of the consumptive's life, if that person was the breadwinner for their family, they faced high costs associated with long-term treatment, and in many cases the loss of further income due to the death of the patient. In Shropshire, the financial cost through loss of earnings because of tuberculosis was assessed in the investigation into the need for a sanatorium in the county. With an average annual loss of £34,766 in Shropshire through tuberculosis related deaths, building a sanatorium was a good investment because it could help return people to good health and therefore to work.

The financing of the sanatorium

The County Council awarded three-fifths of the costs of building the sanatorium, which were not to exceed £90 per bed. This limited it to basic wood construction that could house 20 to 40 inmates in cheaply constructed wooden shelters costing between £6 and £8 per couch, with toilets, a kitchen and administration offices in a more solidly built central block. ⁵

In 1916 the County Council provided £2731 1s 10d compared to the £656 13s 6d provided by public subscriptions, and £55 7s 2d from patient's contributions. But this was not enough so economies had to be made. Shirlett was practically self-sufficient. In 1916 all the fruit and vegetables the sanatorium used were grown on site except potatoes, and the report for that year announced plans to grow them in future to save money. These efforts continued until the sanatorium closed. The report also refers to the installation of a water softening plant in 1916, which reduced costs in a variety of areas including negating the need for the boiler to be cleaned every 3 months, and also the savings made in soap and washing powder. ⁶

In 1931 Shropshire County Council was asked to adjust its contributions from 5/6 of each patient's maintenance costs to 11/12 because the sanatorium had a debt of £2,020 2s 8d, showing that it was unable to support itself. ⁷ The situation was unchanged by 1939 and fears had mounted that patients would have to be sent home because the sanatorium could not find the extra 1/6 of the care costs.⁸ From 1st January 1939 the council contributed 11/12 of the care costs.⁹ The National Health Service Act of 1946 provided funds to prevent, diagnose and treat illness free of charge so that the type and amount of treatment was no longer related to income or insurance contributions.¹⁰ For the first time in history, everyone was entitled to free health care.

The reaction to tuberculosis

The social implications of tuberculosis were huge; people with the disease were often ostracised by their friends and families. The public knew that the success rate of sanatorium cure was low and therefore employees with backgrounds of tuberculosis were a great risk to potential employers because they would be less likely to stay at work or be as productive as fellow employees. It was not uncommon for ex-patients to stay on as groundsmen or even as nurses because they could not or would not find work outside the 'safety' of the sanatorium. Shirlett had at least two nurses who had been treated there and then worked there when they recovered.¹¹ Even the staff of sanatoria were treated with some suspicion,

with family and friends unable to understand why they would want to work there.

Methods of treatment and their success

Shirlett prescribed bed rest, but forbade patients to lie in sunshine, underlining this rule by constructing the shelters so that they faced north. One patient recalled that she had been confined to bed for the first six months of her stay in the sanatorium. The doors to the wards were never closed which allowed fresh air to circulate. The memory of coldness experienced at the sanatorium was particularly evident in one patient's account of his stay.¹² Local residents even recalling seeing patients in beds covered with snow.¹³

The 1917 report included a table on the increase and decrease of patient's weights during their stay at the sanatorium. Of the 159 patients that were treated at the sanatorium during 1916, 137 experienced a weight increase, 12, a weight decrease and the remaining 10 were not weighed.¹⁴ This suggests that weight was an important indication of the success of the treatment being given in the sanatorium. The report of 1935 referred to in the Wellington Journal mentions that 'nothing but the best English meat...and Grade "A" T.T. milk' was supplied. This also indicates the desire to use good food as treatment for the patients.¹⁵

Shirlett used 'graduated labour' to strengthen their patients for work. In 1917 there were 'light gangs' who chopped off and stacked small branches and 'heavy gangs' who sawed off and stacked the large branches of trees which had fallen in a storm in 1916. The construction of a shed for the water softening plant was done using patient's labour, thus saving the sanatorium £46.¹⁶ The report of 1917 includes a table which assesses the working capacity of the patients that were discharged in 1916, recording patients as 'unimpaired', 'impaired' and 'incapacitated'.¹⁷

The 1930s saw an increase in operations to alleviate the suffering of not too far advanced cases. Thoracic surgery required surgeons, which involved patients from Shirlett going to Wolverhampton and Yardley Green hospitals for operations. Tuberculosis physicians were able to carry out minor operations such as 'artificial pneumothorax' and 'pneumoperitoneum' in the sanatorium.¹⁸ In 1943 mass national radiography schemes were introduced to discover early tuberculosis cases after fears of a recurrence of World War One levels of consumption mounted in the 1930s.¹⁹ Even with the extra bed provision of that year, the average number in residence at Shirlett in 1935 had been 99.27% of the possible number.²⁰ In the 1942, Shropshire County Council considered buying x-ray equipment to diagnose and treat tuberculosis at

the sanatorium, but decided that £2000 was too much in wartime.²¹ However, by the end of the 1940s, the sanatorium had x-ray facilities on site.

The nature of institutionalisation in the sanatorium

At Shirlett, as in most hospitals and sanatoria at the time, wards were single sex, with patients only being allowed to fraternise at meal times and in Church.²² However, there was some abuse of the rules, and ex-patients have hinted that it was not uncommon for couples to meet in the undergrowth of the grounds of the sanatorium. There was also an incidence of a couple being found in bed by the nursing staff. The offending couple were sent to different institutions to prevent a repeat performance.²³ There were also incidences of local residents courting patients from the sanatorium. Locals recall going up to the sanatorium to meet patients who were being treated there. This was done in secrecy from their parents who would have been horrified if they had found out because of the risk of catching tuberculosis.²⁴ Those who were not confined to bed rest at Shirlett were given relative freedom to do as they pleased in the grounds. There were instances of patients visiting a nearby public house more as a stunt against the rules than for any other reason.²⁵ Alcohol was forbidden at Shirlett, but the grounds are littered with old beer bottles which were presumably smuggled into the sanatorium by friends and relatives of the patients, suggesting that institutionalisation was not as strong as the staff would have liked.²⁶

Recreation at the sanatorium

Shirlett was not all rules and no fun. Christmas was a time of special generosity. This is recorded in a newspaper article from 1917, 'Afterwards festivities were held, each patient receiving a useful and handsome present... After tea an enjoyable concert was held... The large dining-hall was tastefully decorated, some of the designs being unique and distinctive.'²⁷ This indicates the community feeling at the sanatorium with all concerned pulling together to make Christmas as enjoyable as possible. Even in the late 1940s under the NHS, the Matron still used her 'comfort fund' to buy Christmas presents for the staff and patients. A member of staff recalled being overwhelmed by the amount of presents she received as a member of staff from the sanatorium.²⁸ The quote also shows the wide range of activities available to the patients, including playing musical instruments, and producing decorations for the festivities. Patients normally read, backed horses through the shop, knitted, did needlework, worked leather, played dominoes, and listened to a hospital radio station which was transmitted from Shrewsbury.²⁹ For



THE FEMALE HUTS - SHIRLETT SANATORIUM

the children there was a small school which was run by a local teacher.³⁰ One must remember that sanatoria were only the tip of the iceberg when it came to dealing with tuberculosis. The disease was so prolific in Britain that there could never have been enough beds provided to cater for the consumptive population that Britain became lumbered with. Sanatoria were built as a reaction to the disease that was sweeping the country. The fear that tuberculosis brought with it was founded on the lack of ability to treat it with medicine. Sanatoria, and the lifestyle that they offered gave hope to a destitute nation of sufferers, albeit to a limited number. The success of the sanatoria system has been heavily debated, with some describing it as an expensive failure and others criticising it more generously, saying that they helped to inform the country about the disease, and therefore help prevent it. The methods used to cure patients were limited. A good diet, pleasant conditions and graduated labour were really the only treatment that sanatoria could provide before the use of Chemotherapy and inoculations in the 1950s. There is much debate over the success of these 'treatments' but it probably is safe to suggest that the change of scenery and improved living conditions did help a lot of people recover from their ailments on a temporary basis. However, on their return home, the effects were often lost and patients were potentially in a worse situation than when they were admitted to the sanatorium.

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LE CREUSOT: A WILKINSON LEGACY

by David Lake

John Wilkinson's technological and industrial successes were legendary in his own lifetime. When he was no longer in charge things went very differently. The lack of legitimate heirs and the appearance of other claimants to the estate left his wealth in the pockets of lawyers and his industries in ruins. In happy contrast the enterprise founded on Wilkinson technology at Le Creusot in Burgundy continues to the present day, and with an expertise in advanced engineering that would have well pleased John himself.

There are records of mining and mineral working in the area of Le Creusot from the early sixteenth century, but it was in 1779 that Louis XVI of France decreed that his Royal Foundry for the production of cannon should be established there. It may seem surprising that the location chosen for such industry was Burgundy, more associated with the vineyards of Macon, Nuits St George and Beaune. But the River Saone in whose catchment area these vineyards lie has been a commercial waterway for centuries. Indeed, the completion in 1793 of the Canal du Centre, starting from Chalon-sur-Saone and passing near to Le Creusot, was an important factor in the growth of the town.

The Royal Foundry was to exemplify the use of the finest known methods - it was to be constructed "to smelt iron ore with coke, following the English method, to be put into practice by Monsieur William Wilkinson." William, although not in the class of John as an unrivalled innovator, was an ironmaster well able to follow in his brother's footsteps. He went to Le Creusot as the consultant engineer responsible for the design of the equipment - blast furnaces, and foundry and cannon boring machinery. Monsieur Pierre Touffaire directed the actual building work for the four blast furnaces and the foundry, and Monsieur Ignace de Wendel was the King's man on the management team, the managing director.

For thirty years the demand for iron ensured the continuation of the ironworks, despite alarming political upheavals. The French Revolution of 1789 brought in the Republic, Louis XVI was sent to the guillotine, and the Royal Foundry ceased to be "Royal" but continued to grow. The Republic was followed by the Empire and eventually demand slackened. Various work was undertaken, especially the casting of pipes for the Compagnie de Gaz de Paris and pipes also, as John Wilkinson had supplied from Broseley and Bersham, for the Paris Water Works.

Financial difficulties forced the sale of the company in 1818 to Monsieur Chagot, a local coalowner, who sold out in 1826 to a company formed by two Englishmen, Manby and Wilson. They brought in new methods of working most notably the puddling furnace for the conversion of cast iron to wrought iron. They also brought in a team of English workers, who were accommodated in Miners Valley, near to the foundry. It was at this time that the ironworks became known as "La Forge Anglaise du Creusot." The company enjoyed renewed success, winning a Gold Medal at the 1827 Exhibition of Industry, but eventually had difficulty with Monsieur Agado, their backer and banker, who took them to court and bankruptcy resulted in 1833.

The works continued under the direction of the receivers, and in 1836 were purchased by the Schneider brothers, Adolphe and Eugene, who were to be the founders of a remarkable dynasty. They engaged as Chief Engineer Francois Bourdon, who had gained experience of the construction of ships and of ships' engines in New York and Liverpool. Bourdon believed passionately in the future of steam power. Simultaneously with James Nasmyth he invented the steam hammer.

At the same time an English engineer by the name of Edwards was brought in for his locomotive experience, and in 1838 La Gironde, the first of a class of six 2-2-2 engines for the Paris -Versailles line, rolled out of Le Creusot. In 1840 the first export orders were gained from Italy, and in 1865 fifteen 2-4-0s were sold to the Great Eastern Railway, allegedly at a loss but good for prestige and morale in Le Creusot.

Adolphe Schneider had died accidentally in 1845, leaving Eugene in command until his death in 1875. He dramatically expanded the ironworks, and with his addition of La Grande Forge in the 1860s Le Creusot was equipped with 15 blast furnaces, 600 coke ovens and 130 puddling furnaces. This great expansion of wrought iron-making capacity was somewhat wrong-footed by Henry Bessemer's patenting of his remarkable Bessemer converter for the production of mild steel, which superseded wrought iron. Schneider signed a licensing agreement with Bessemer in 1862, but delayed its use until 1870, on account of the newly commissioned puddling plant, the unsuitability of the local phosphoric ores for the Bessemer process, and the very high royalties demanded by Bessemer. In 1867 Schneider took out also a licence for the Siemens-Martin open-hearth process and brought this into use.

In 1878 Thomas and Gilchrist patented their basic steel-making process. By now Henri Schneider was in charge, and saw the possibilities of this new but untried and undeveloped technology for dealing with phosphoric ores.



His extremely strong team of metallurgists, amongst them the renowned Foris Osmond, helped to develop basic steel-making. Subsequently Henri Schneider moved Le Creusot away from tonnage steel production - the rolling of ordinary mild steel rails ceased in 1885 - into the higher realms of alloy and special steels, and armour plate.

Henri Schneider was remarkable also for his concern for the well-being of his labour force, and his reign was a time of social calm. This was rather less the case with his successor, Eugene II, 1868 -1942, who nevertheless drove the company into new fields where its technical expertise gave it a competitive advantage. Water tube boilers, steam turbines, fast torpedo boats, heavy electrical generators and motors, heavy machine tools, heavy diesel engines built under a well-chosen licence from Burmeister and Wain, and stainless steels were examples of Eugene II's diversification.

Charles Schneider, 1898 - 1960, took over in 1942. The last steam locomotives, the powerful 4-8-2's of the "Mountain" class, were built in 1952, but the development of electric locomotives had been started in 1900. Today the crucial running bogies of the Train a Grande Vitesse are Schneider designed and built. Electric arc steelmaking, particularly suitable for precision alloy steels, began in 1925 and has superseded other methods in Schneider's modern steelworks. Heavy hydro-electric equipment, such as the 8 metre diameter Francis turbine supplied to Brazil in 1982, has been manufactured since 1921. Steel pressure vessels for nuclear reactors and the petro-chemical industries exemplify Le Creusot's capacity for demanding work. Groupe Schneider are represented by their Telford office at Stafford Park.

One consequence of the history of Le Creusot is more indirect, but nevertheless intriguing. Jacques Schneider was the grandson of Adolphe. An enthusiastic early aviator, he donated in 1912 the Schneider Trophy to be held by the country manufacturing the world's fastest seaplane, to be demonstrated by its winning a competition to be held biennially. Supermarine of Southampton won three successive events, in 1927, 1929 and 1931. Under Jacques Schneider's rules this meant that Britain held the trophy in perpetuity. Reginald Mitchell, Supermarine's Chief Engineer and design genius, went on to use the knowledge gained from the Schneider Trophy work in his design of the Spitfire, which played so great a role in the outcome of the Second World War.

The modern Le Creusot is very different from its former self. In its mining and smelting heyday Le Creusot must have been a fearsome place, the town centre and the blast furnaces being only metres apart. It is said that the blows of Francois Bourdon's 100 tonne steam hammer could be heard

10km away. Perhaps as compensation for these unneighbourly aspects of the works the Schneider family had over the years provided the town with many amenities. These remain, the smokestacks have gone, and Le Creusot is an attractive Burgundy town.

On the high ground of the town stands the Chateau of the Crystal Glassworks. At much the same time as the establishment of the king's Cannon Foundry was built the queen's Crystal Glassworks. Glass production ceased in 1832 and Eugene Schneider converted the glassworks into a chateau, which now accommodates the permanent exhibition of the Academie Francois Bourdon. The Academie has been founded with the dual purpose of keeping vividly alive the knowledge of past technical achievements and of interesting the young in future careers in engineering.

The permanent exhibition gives a clear account of the development of Le Creusot, from the days of William Wilkinson to the time of the TGV. Scale models of steam engines, railway locomotives and other products, accurately and painstakingly made by the apprentices of the day, make the history come to life. A cast iron blowing cylinder bearing the name Wilkinson stands some 2.5 metres high in the courtyard, and documents signed by Wilkinson are in the archives. Cannon in remarkable numbers and variety stand on the terraces of the chateau. There is also the innovative Ecomuseum of Creusot-Montceau housed in part in the chateau.

The technological University of Burgundy now occupies much of the site of the ironworks; some of the old buildings have been preserved and given new uses. The terraced houses built for the Manby and Wilson puddlers are looking very well cherished. The engine assembly shop is now the university library. There is a particular appropriateness in this, since the Schniders always saw the development of practical skills and the intellectual abilities of the Creusotins as a major responsibility for a great potential asset. While ready to bring in outside expertise when necessary they provided for the education of the children of Le Creusot, with technical education to the highest level for those able to benefit thereby. This gave the company the ability to respond rapidly to the opportunities of new technology.

A long-standing association with Westinghouse proved extremely fruitful when the American company developed the Pressurised Water Reactor. Charles Schneider quickly recognised the potential of the new system for the French nuclear power programme and for work for his company.

The Schneiders took over a bankrupt firm and ran it remarkably successfully for a century and a half. The death of Charles in 1960, by an accident of the sort that took so many of this rather adventurous family, ended the dynasty.

Under other management Le Creusot continued until 1970 as part of the Schneider company. After that major regrouping amalgamated it with similar establishments throughout France as Creusot-Loire, but bankruptcy ensued in 1984. This led to a redivision of activities between Creusot-Loire Industrie for metallurgy, Framatome for mechanical engineering and power generation, and Astom for railway engineering.

What factors can be seen as enabling the Schneiders to continue to run Le Creusot for so long and with such success in the John Wilkinson style? There is, rather importantly, the leniency of the French inheritance tax system when it is a matter of handing on and keeping intact industrial estate. The education of the Schneider children likely to take over management was clearly important. Eugene I and his brother Adolphe had their secondary education in school, and Eugene attended also classes at the Conservatoire des Arts et Metiers. Henri's secondary education was in Paris at the Lycee Bonaparte. After his baccalaureat he started work in the factory at Le Creusot, soon taking on responsibilities there. Eugene II followed a similar path, but his three sons went to school in Le Creusot, with some special supervision to ensure their exemplary progress. Generally the Schneiders had in common that they had only secondary education and then went on to learn on the job in the works, and from their family contact with top management and its problems. The handing on of control, from Eugene I to Henri and from Henri to Eugene II, was progressive, which was a very important factor in keeping continuity.

There was hard work, and there was good luck, but undoubtedly much akin to John Wilkinson's entrepreneurial genius was also to be found in the Schneider dynasty.

DOUGLAS BRAID, 1908-1999

by Richard Barker

Douglas Braid was a member of the Wilkinson Society, and an authority on industrial history and on the works of John Wilkinson in particular. When the Society appeared to have failed in 1990/1, he produced two volumes of *Wilkinson Studies*, before ill-health intervened. It is probably for these that he will best be known to members of this society. He died on 9 March after a long illness.

As a child Douglas had been both bookworm and enthusiastic mechanic, and won a prestigious Engineer Apprenticeship to the Royal Ordnance Factory, Woolwich, in 1925. That provided the grounding in mechanical engineering and sophisticated production engineering techniques that he later applied and developed in other industries, together with the interest in the history of heavy ordnance that featured so heavily in his later research and writing. He moved from the Arsenal into compressor production in 1937, running a vital works for continuous wartime production, and from 1948 into the manufacture of specialist paper mill and packaging machinery. That included an early application of industrial computer-control in the 1960s. He was an acknowledged expert on the uses of compressed air in industrial production, commissioned to write a book about 1940. In the next two decades he became an expert on the management and forward planning of production engineering. His work took him to many parts of the world up to his retirement in 1971. For a period in the 1950s and 60s he even turned his hand to the manufacture of fountains with some innovative features. After retirement his skills were put to use designing equipment for handicapped children.

In 1980 he was appointed as the third Rolt Memorial Fellow at Bath University, to study the history of technology, and especially the manufacture of iron and steel guns from 1543 to 1914. His historical researches appeared in the *Transactions of the Newcomen Society*, *Newsletter* and *Journals of the Ordnance Society*, and latterly in *Wilkinson Studies*.

As soon as desk-top publishing appeared, Douglas promptly mastered the art and set up Merton Priory Press to produce many works on local and industrial history. He was instrumental in setting up the early Journals for the Ordnance Society, from 1989. The autobiography of his industrial career appeared in 1995, as *Engineering isn't all stress*.

Douglas was indefatigable as writer and researcher, acquiring materials for Hussite, French and Russian sources, or for bog-iron ores, as commonly as for English material. Few could have been as generous with time, material and even financial assistance, in pursuit of subjects he loved. It is immediately apparent that Douglas was the major contributor to *Wilkinson Studies*. This writer's role as editor was a polite fiction to mask the fact that the whole inspiration and funding, and much of the effort, were all in fact due to an irrepressible 83-year old, intent (single-handedly if necessary) on restoring the memory of John Wilkinson to the pinnacle that the man and his achievements had occupied amongst his contemporaries.



IRON CANNON AT CHATHAM HISTORIC DOCKYARD
(See page 36)

CORRESPONDENCE

The First Iron Boat

John Powell (Librarian, IGMT) reports:

Following a recent visit to the Library in pursuit of her researches on the Helton Tarn boat, Mrs Judith Andrews of Windermere wrote:

...I myself am inclined to believe the local legend, largely because I have noticed that most legends turn out to have a basis in fact - even if they have become misunderstood and thus distorted through time. A cargo ship carrying stone may come to be called a stone boat, and then later described as a boat built of stone - but there is usually a germ of truth if one can only recognise it. I suppose the boat from Helton Tarn could have become the boat *in Helton Tarn* but such a boat almost certainly did exist. Besides, Wilkinson would have been given confidence to make a public display of launching his much larger boats on the canal by knowing that iron boats did float.

My husband, who writes professionally about boats, feels that the length of 10', on a 6' breadth, must be a mistake, probably arising from a misreading of somebody's handwriting. Very little peat could have been carried in such a craft - less than a cartload. The tonnage is also a puzzle. It may refer to the weight of the boat itself, to its laden weight, or to its Thames tonnage, which as you know is a measure of its cargo carrying capacity. A 10' x 6' boat which weighed 3 to 5 tons would be unlikely to float at all! The weight of a cargo of peat would depend entirely on whether it was wet or dry. I imagine that like wool, peat would hold several times its own weight of water.

Jim has calculated the Thames tonnage of a 10' x 6' boat as 0.77, and that a 6' wide boat of '3 or 5 tons'TM would have been roughly 16' or 27' long. Do you suppose that the mention of 3 or 5 tons also indicates an inability to read someone's handwriting? A 3 and a 5 can be very hard to tell apart...

Cannon at Barra in the Gambia

Margaret Barrett (Chippenham) writes:

In my article published in your journal a couple of years ago, I asked whether any of your readers could identify the origin of a cannon found at Barra at the mouth of the Gambia River in West Africa. It was particularly interesting because of the 'W' on the upper side of the barrel. A photograph was included in the article.

It seems that there were no replies to this enquiry. However, on a recent visit to Pendennis Castle in Cornwall, I discovered a cannon with the same 'W' insignia, again cast on the barrel. If I understood the guidebook correctly, this was made by Walkers of Rotherham in 1860. I wonder if any of your readers have seen any examples of other cannon of this type, or whether they have any information about Walkers of Rotherham.

In reply, Steve Dewhirst writes:

In 1741 three brothers founded the Walkers Company in Rotherham Yorkshire. They became involved in a great variety of ironmaking activities, including the manufacture of steel using the crucible process and also tinsplate from iron sheet. Their works included blast furnaces, a rolling mill and a slitting mill, and they also had a private canal from their Holmes works to the River Don.

In 1746 they set up a foundry and became involved in the manufacture of cannon during the American War of Independence. They also started making castings for an iron bridge in 1789 to a design by Thomas Paine. The second major iron bridge constructed at Sunderland in 1796 was cast by Walkers. During the Napoleonic Wars they concentrated on manufacturing ordnance but returned to bridge building in 1815 when they manufactured parts for John Rennie's bridge across the Thames at Southwark.

A number of cast iron cannons marked *W Co* (presumably made by Walkers) can be seen at Chatham Historic Dockyard.
