THE JOURNAL OF THE WILKINSON SOCIETY

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C O N T E N T S

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Editor : N.J. Clarke

THE WILKINSON SOCIETY

The Society was formed in 1972 to meet the demand for an organisation to preserve the material and documentary evidence of Broseley's industrial past. Since an important part in this industrial past was played by John Wilkinson, who lived for a time at "The Lawns", it was decided that the organisation should be known as The Wilkinson Society.

The aims of the Society are :-

(i) to act as custodian of any relevant material and information and to make such material and information available to interested individuals and organisations ;

(ii) to promote any relevant preservation activity and to assist individuals or organisations in such activity where deemed appropriate ;

(iii) to provide a link with the community of Broseley for individuals or organisations undertaking local historical research.

Any available material will be added to the existing collection of Broseley and Wilkinson relics at "The Lawns", Church Street, Broseley. This collection is open to the public on Saturdays and Sundays between Easter and September, from 2 p.m. until 6 p.m., or at other times by appointment.

Administration of the Society is by an annually elected committee. Membership is open to anyone interested in the Society's aims and activities. These activities include illustrated lectures, social evenings, researching and exhibiting the collection, field trips and coach tours. Members are kept informed by newsletters, and this annual Journal presents articles on the history of the Broseley area, John Wilkinson, and industrial archaeology in general.

NOTES AND NEWS

The Year's Activities (1978 - 79)

The sixth Annual General Meeting was held at the Cumberland Hotel, Broseley on 27th October, 1978. At this meeting Mr. N.J.Clarke indicated that he would wish to retire from the Chairmanship at the end of the season. The existing committee was re-elected for a further year. In order to simplify the annual subscription system, the Adult Subscription was fixed at £1 per head, uniformly, and the Junior Subscription was raised to 50p. After the close of business, Mr. John Cragg gave a most interesting talk on "The Broseley Association for the Prosecution of Felons".

The next meeting was on 10th November, 1978. Mr. W. Smith, of The Polytechnic, Wolverhampton, gave an illustrated lecture on "The Bradley Ironworks of John Wilkinson". After the meeting Mr. S. Smith, Deputy Director of the Ironbridge Gorge Museum, showed members an 18th century oil portrait of John Wilkinson recently acquired by the I.G.M.T.

The joint meeting with the Friends of the Ironbridge Gorge Museum took place on 8th December, 1978 at the Severn Warehouse, Ironbridge. The subject was "Thomas Telford, the Uncommon Genius". Members enjoyed particularly an amateur colour cine film made on the Caledonian Canal in the late 1930's.

The usual Social Evening was held at "The Lawns" on 9th February, 1979. The theme was "Decorative Tiles", and some very unusual specimens were brought along by members for our inspection.

The next indoor meeting was to have taken place on Friday, 16th March, 1979, at "The Lawns". Mr. Ernie Harris, a member of the Society, intended to speak on "Broseley as I remember it". Unfortunately, there was very heavy snow in the Broseley area on the day, and when 4 feet had accumulated the meeting was postponed at extremely short notice using the members grape-vine as far as was possible.

As an experiment, the Summer Excursion was planned as a joint venture with the Friends of the I.G.M.T. on Saturday, 21st July 1979, to the Piece Hall, Halifax, Shibden Hall and the Wainhouse Tower.

The fifth annual Celebrity Lecture took place on 31st August 1979, at "The Lawns". Mr. W.K.V.Gale gave "A lateral look at Iron and Steel" which was much appreciated by a somewhat smaller audience than usual. (It appears that this event might be better served by arranging it for a date in early July. – Sec.)

The Ironbridge Bi-centenary celebrations were held during the week commencing 2nd July, 1979; and although the Society did not participate formally, many members, including the Chairman and the Treasurer, took a very active part in the celebrations at the Broseley end.

In addition to the above, Committee Meetings were held at "The Lawns" on 6th October, 1978 and 6th July, 1979.

Programme of Events for 1979 - 80

12th October : Seventh A.G.M., followed by a talk - "Broseley and the Iron Bridge" - by Mr. Ralph Pee.

9th November : "Broseley as I remember it" - talk by Mr. Ernie Harris (postponed from last March).

13th December : Joint meeting with the Friends of the Ironbridge Gorge Museum at the Severn Warehouse - film evening.

15th February : Members' social evening at "The Lawns".

7th March : Illustrated talk - "The work of Thomas Farnolls Pritchard in Shropshire" - by Mr. J.B. Lawson.

27th April : Annual summer outing - joint visit with the Friends of I.G.M.T. to the model Industrial Village of Styal, Cheshire, and the Anderton Boat Lift.

July : Sixth Annual Celebrity Lecture (details to be announced).

The Journal

Our "Iron Bridge Bi-centenary Number" devoted to the life and work of John Wilkinson (Journal No.7, 1979) appears to have been well received and we had requests for it from near and far. In our present issue we revert to our standard format, with three major articles, two shorter notes and a lengthy correspondence section.

Further copies of the Journal and back numbers can be obtained from the Secretary, Maurice Hawes, 18, Salop Street, Bridgnorth, price 40p each (including postage). Contributions to future issues would be welcome, and should be sent to the Editor, N.J. Clarke, "Cranleigh", Little Wenlock, Telford.

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SOME MINING INCIDENTS IN THE BROSELEY FIELD

The one thing that has always struck the writer when considering the Broseley part of the Coalbrookdale Coalfield has been the primitive nature of the equipment used even during this century. This was probably due to the fact that there were never any large mines; the clay industry, with its low-value raw material, was dominant and the seams of mineral present were few, thin and shallow. The following article is a collection of notes culled from various sources, all of which indicate not only the primitiveness of the industry but also the variety of techniques in use. Some of the incidents described are tragic, some comic: they also show the local miners to have been frequently ingenious but with, at the younger end, a considerable degree of carelessness.

In 1891 the following mines (1) were still operating in the area (diameter and depth of shafts are given in brackets in feet) :-

Broseley Wood Fireclay	(6½;300) (6;105)
Deer Leap Coal	(6;48) (adit 2ft x 2ft)
Benthall Fireclay	(adit 5ft x 4ft) (4;23)
Bells Rough Coal	(5;30) (5;30)
Pottery Pit Fireclay	(5;54) (6;48)
Deep Pit Coal	(6½;420) (5½;420)
Turners Yard Coal	(5;108) (5;108)
Tuckies Red Clay and Coal	(7;195) (6;210)
Calcutts Red Clay	(6;60) (6;60)
Green Pit Red Clay	(5;30)
White Level Fireclay	(adit 4½ft x 4½ft) (5;24)
Coneybury Coal	(6½;420) (4;420)
Prestage Trial Red Clay	(8;135)
Dunge Coal & Clay	(5;66) (5;70) (4;57)
Doughty's Red Clay	(6;100) (4;105)
Exley's Nos. 1 & 2 Red Clay	(5½;105) (5½;105)
Gitchfield Clay	(adit)
Broad Meadow Coal	(4;24)

All the pits were "naturally ventilated" except Deep Pit which had a firelamp suspended in the shaft, the Tuckies which used 'exhaust steam' from pipes in the upcast shaft and Coneybury which had a furnace at the surface. Each type of heat source caused the air to circulate through the mine using convection currents. Of course, several small mines have opened since 1891 but most of these were short-lived ventures.

By 1930 only the following remained at work (the numbers of men being employed underground is given):-

Alders Meadow (Doughty's)	5 men, closed 1940 (NGR 682029)
Benthall Lane Fireclay	4 men, closed 1942 (Part re-opened as Viger Drift)
Gitchfield Red Clay (Exleys)	10 men, closed 1950 (NGR 707014)
Ladywood Clay (3 pits)	Total 7 men, closed 1939 (NGR 679029)
Broseley (Milburgh) Tile Clay (Prestage)	5 men, closed 1940
Deep Pit Clay (Prestage)	4 men, closed 1940 (NGR 683016)
Turners Yard Fireclay (Prestage)	14 men, closed 1955 ? (NGR 693001)

In 1948 only Turners Yard (11 men), Gitchfield (3 men) and the Viger Drift (part of Benthall Mines) (2 men) remained in operation, and, although there was some drift mining in the 1950s around Caughley, by 1960 all mining had ceased in the Broseley area.

Reports of incidents in the mines come from a variety of sources. In 1889 two men were suffocated in a mine at Broseley when they climbed down to retrieve a hat which had fallen when they looked down the shaft during a Sunday walk. In a similar incident about 1948 two youths were suffocated on entering an adit during a walk. At the Dunge Pit in 1904 an overman was injured when two youths, who were lowering him down a shaft, lost control of the windlass; - the younger youth, who was 17, let go of the handle and the other youth could not control it. During Sunday October 11th, 1914 "some evilly-disposed person removed the covering of a coalpit shaft at Benthall, Salop and threw the covering together with a chain and wire rope down the shaft, causing serious damage to Messrs. C.R. Jones & Sons and endangering the public". A reward of one guinea was offered by the "Broseley Association for the Prosecution of Felons to any person giving such information as shall lead to the conviction of the offender" (2). In the 1930s the cover of a shaft beneath the George Pritchard Memorial caved in and the shaft was filled and grouted. This shaft had opened up suddenly some years previously and a small boy named James Nock fell in and was drowned (3). John Randall recorded a similar mishap in his book 'Old Sports and Sportsmen' when Tom Moody, the celebrated 'Whipper-in', fell into a pitshaft. "His halloo to the dogs brought him assistance, and he was extricated" (4).

The Mines of the Broseley area were often featured in the Annual Reports of the Inspector of Mines. For example, in 1902 at the Wallace Pit a clay miner was struck by something falling down the shaft as he was standing at the bottom waiting to be hauled up. At Tuckies Pit a gunpowder shot had missed-fire and a miner cut away the clay from around it; then, when withdrawing the charge, he accidentally ignited it with his candle. Similarly, at Doughtys Pit a miner was burned when he accidentally ignited two bobbins of compressed powder explosive with his candle as he carried it to his working place.

The writer has also tried to record incidents that have occurred within recent years by interviewing former mine-workers. The late Mr. W. Yates related his experiences in the Gitchfield Mine to the writer in 1967. Mr. Yates began work there in 1892 at 13 years of age. It was an adit mine and his first job was 'mobbying', hauling clay, two tubs at a time, while crawling on hands and knees with a hauling chain between his legs and attached to a heavy leather belt at his waist. For this work he got 1 shilling per day out of which he had to pay 2½d per week toll to cross the Coalport Bridge. The clay was got by hand from pillar and stall workings, with ventilation from a shaft half a mile away in Tarbatch Dingle. Carbon dioxide gas was a problem, causing difficulty in keeping candles alight, and in such places they "burned better when kept horizontal". The mine was very wet. As well as the red clay, fire clay was obtained from a seam about 25ft below it. In 1920 the red clay and the fireclay were being mixed in the proportion 4 red to one of fireclay. The mine produced about 300 tons of clay per week with about 10 men.

The Deep Pit has been described by F.R. Gameson in the Shropshire Magazine, March 1952: "An 8-man pit and an historic engine". When the mine closed in 1940 it was believed to have been in operation for over 200 years, the same steam engine having been used for over 130 of these years. Attempts were made to get the engine preserved, but a Science Museum expert described it as consisting entirely of 'all spare parts' and in 1951 it was scrapped. The mine was very extensive and ventilation was a major problem, both a furnace and a firelamp being used at various times. The Deep Pit produced red clay and fireclay, and 'fat grey glacial clay' was obtained from a quarry near one of the shafts. In 1924 the mine was producing 24 tons of tile clay per week which was weathered for about 3 months and then mixed

with glacial clay in the proportion two of red to one of glacial clay.

The late J. Roberts described graphically the mine surface to the writer in 1965. "There was a stable where the donkey stood looking through the door till the cage came up, then he would walk out on his own and stand in front of the drought or skip (wagon) to be hooked on to the clay, about 8 to 10 cwt, to take up to the tip. Then he would walk back again and wait for the next. One part of the stable was kept for straw, hay and chaff. The head gear had a crosspiece on top to keep it square, with screws to tighten the guides. Nearby was the furnace chimney: the fire was above the ground in one half of the chimney, and its flue was the other half; it went down under ground to an old shaft. A round building at the surface was a cabin, which, my father told me, over 60 years ago, was built in that shape because the miners knew they would have a lot of waste when they sank the pits and not much room for it. So they heaped it all up around the cabin to the top; if this had been of square sides the waste would have pushed them in. The shape took the pressure all around, so they knew what they were doing, as it stood the test for over 200 years. Inside there were two long seats for the men to sit on to eat their food, a coffer for corn, fuse, axe, saw etc., while the candles were hung in the centre so that the mice could not get them. Oil lamps were used for lighting. There was also a blacksmith's shop with leather bellows, a forge, anvil and vice etc." Mr. Roberts was good with his hands and often repaired the sledges and blow georges (ventilating fans) for other mines. He remembered, too, that when sinking new shafts, the miners would run drain pipes down the outside of the brickwork and put the 'air bags' in these. His father often provided the steam engine to drive the blow george at these mines.

Another interesting description has been provided by the family of the late T. Jones, a coal and clay entrepreneur and for a time Managing Director of C.R. Jones & Sons Ltd., Ladywood Tileworks. This has been published in full in the Shropshire Mining Club Journal, 1973/4, and describes interesting incidents at Colleys Dingle, Broad Meadow, Benthall and at the mine by the Old Mill, Ironbridge (Viger Drift); also at the Crawstone Levels by the Hairpin Bend (from which ochrous water still flows), the Pennystone Pit near the Red Church, the Deer Leap and the Fiery Fields.

Of the recent workings at Viger Drift and Turners Yard some documentary and field evidence can still be seen. The Viger Drift was part of a complex of old adits in the woods on the opposite side of Benthall Bank to the Old Mill at Ironbridge. One of the bricklined adits can still be seen by the roadside, as can a corrugated sheet covered adit entrance, now collapsed, a few feet above. Nearby there is also a corrugated sheet covered miners' cabin. These workings were described by T. Jones in the article referred to above, and in 1920 they were still being worked by a modified longwall method. At various times they have been connected to the Benthall Lane Mine behind the Benthall Firebrick Works near the Ironbridge Toll House. This consisted of a row of four adits on the 224 ft. OD contour. One of these was steel-arched and still visible until recently destroyed by Telford Development Corporation 'landscaping'. The clay was brought by wagons out of the adits, down an incline and across a bridge over the Severn Valley Line, before closure in 1942. Several mine plans survive, showing the workings at the mines here (5).

Alas, very little has been written of the Turners Yard Mine and Caughley drift mines, which closed in 1940 and in the 1950s respectively, or even of the Milburgh Mines of Prestage and Broseley Tileries (also closed 1940), from which the steam engine has recently been removed to Blists Hill Museum. The writer, and the Society, would like to hear from anyone who has memories of these or any other Broseley Mines.

I.J. BROWN

References

(1) Much of this material has been extracted from the Annual Reports of the Inspectors of Mines of the year stated.

(2) Handbill in private ownership.

(3) Jones C.R., Some Records of Broseley and District, (Wildings, 1939)

(4) Randall (1873), p.129.

(5) Mining Record Office, London, Plans No. 13474 (Benthall Lane Mine) and 15130 (Viger Drift Mine).

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"A LATERAL LOOK AT IRON AND STEEL":

the 1979 Celebrity Lecture.

In a stimulating and provocative lecture Mr. W.K.V. GALE selected some of the major developments in the history of iron and steel and tried to relate them to the events of the present. In particular, he pointed out the economic folly of regarding any raw material as inexhaustible - be it coal, iron ore or oil ! He gave as an example of wasteful exploitation the iron industry of his own native Black Country; and it is this part of Mr. Gale's lecture that we have pleasure in publishing in this issue of the Journal.

"In the first half of the 19th century the iron trade of the Black Country grew at a remarkable rate and for a time it was the biggest iron producer in the world. It had every possible advantage. At very shallow depths all over the area there were vast quantities of coal, ironstone, limestone, clay and sand - everything in fact that was needed to build and operate blast furnaces, ironworks and associated iron-using factories.

The famous Thick Coal or Ten Yard seam which was 30ft (9 m) thick and yielded, even allowing for the wasteful method of working at times, 20,000 tons to the acre. Ironstone was less abundant, the seams providing about 1,200 tons to the acre. The other minerals, which were needed in much smaller quantities, were more than sufficient for the industry's needs.

Working the Thick Seam was difficult. Because of its thickness it was not possible to use the longwall system (or Shropshire system) which took out virtually the whole of the seam. The Thick Coal was worked by the pillar and stall method, which took, on the first (or whole) working, about half the coal. A second working (the broken) should, in theory, have enabled the second half of the coal to be won. In practice this often failed and half or more of the seam was lost for ever.

The problem was that the market only wanted lump coal and all the slack produced in winning the seam was very nearly unsaleable. So most of it was left behind; its only useful purpose being to act as a platform for the miners to stand on while they worked the upper part of the seam. Black Country Thick Coal has a high sulphur content and as the air could get at the piles of slack they often caught fire by spontaneous combustion. Such a fire could never be put out - not that anybody tried very hard. So the slack, the pillars left for the second working, and often enough large areas of virgin coal were destroyed. The fire simply burnt on until it reached a worked out or waterlogged area or a natural fault. It is impossible to say how much coal was lost in this way but it was probably millions of tons. The 'Fiery Holes' public house, in Great Bridge Road, Moxley, Bilston, marks the site of one of the worst areas but there were many others.

It is easy - in fact it is now fashionable - to blame our forefathers for our present troubles. But while they certainly wasted vast quantities of irreplaceable fuel by bad methods of working and using it, we must remember that the situation was unprecedented. They found themselves in trouble and they had no past experience to guide them. They did the only thing they could. They abandoned the burning areas and opened up new ones. The coal was still cheap and - here we come across a word which had great currency in the 19th century and which we hear even now - there was so much of it that it was 'inexhaustible', or so people said. What we have learnt from their experience is another matter.

In time, of course - and sooner than some people expected - there were signs that the raw materials for ironmaking were not inexhaustible at all. Iron ore was the first to cause trouble. By the 1840s some of the seams in the older part of the Black Country were worked out and ore had to be transported from the newer, western, part of the area. Coal, for the time being, was still abundant though a few more far sighted people were beginning to realise that the supplies were finite. By the last decade of the 19th century the end was in sight for the Black Country. The iron ore had gone and the amount of coal that remained was too small to be of significance. Of course, this was inevitable. Use any finite natural material and it is bound to be worked out sooner or later. My point is that by using it wrongly, the end comes much sooner than it need.

The Black Country .... was the first area to get into trouble in a way which has since become familiar. With the exhaustaion of the Black Country natural resources the iron trade simply moved on to places where it could still get cheap raw materials and energy. Teeside was a particularly favoured area and from the 1850s onwards the iron industry developed there in much the same way as it had done in the Black Country half a century earlier.

It is true that more efficient ways of making iron were developed but the goal was always either increased production or lower costs - or both. Nobody gave any real thought to the idea of using less raw materials or energy simply because they were still thought to be inexhaustible."

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BARGES IN VICTORIAN SHROPSHIRE

(from photographs in the Ironbridge Gorge Museum Collection)

The Ironbridge Gorge Museum's collection of photographs now contains a considerable number which depict boat types formerly in use in the Gorge, few of which have been published. The more important items are cited at the end of this note, which also draws upon some of the better line drawings. They reveal almost without exception a type of barge unnoticed by historians. The better known version of the Severn trow (as in 'crow'; c.f. Shropshire trow as in 'cow') is conspicuous only by its absence. While this is not unexpected, granted the probable dating of the collection (1860 - 1900 say) and the economies of transport at that period, it is remarkable how quickly the old up-river boats disappeared from the collective memory of maritime writers.

This occurred to such an extent that a renowned scholar could write in questioning terms of, for example, trow topmasts being set up behind the main masthead - as clearly seen in many eighteenth century drawings. This is indeed an unusual feature, but a photograph now vindicates the accuracy of some drawings, at least. This feature also serves to indicate the great differences which occurred between the up-river boats of the late nineteenth century (themselves remarkably like, but more heavily built than, the boats of the lower river in the eighteenth century) and the popularly received connotation of trow as an estuarial and coastal vessel, fore and aft rigged, 'carvel' built, often 'boxed', and of considerable draught and solidity. Since most features of the up-river trows are different from their esturial descendants, I shall not attempt to compare them directly in this note. (The classic source for more general information is Grahame Farr's "The Severn Trow", in Mariner's Mirror Vol.32, 1946, pp.66 - 95. Earlier items in Mariner's Mirror are regrettably unreliable - describing, for example, the great traffic down the Severn from the coalmines of Worcestershire in the century before the opening of the canals, and locating the Bower Yard at Shrewsbury; or if you prefer, Bristol !)

The photographs show a class of boat which from other evidence may be "barges" rather than "trows" (there is no satisfactory definition to distinguish trow): many vessels registered at Gloucester after 1850 under local owners are "barges", and these were arguably among the larger craft in use. Those photographed are demonstrably of the order 65 - 70 feet long, 14 - 16 feet wide and all very shallow (Registered lengths were up to 80 feet, and "depths" were frequently less than three feet). They are clench built, and the individual strakes are exceptionally wide - the width after cutting to shape is as much as 16 inches, with bevels of about 30 degrees on the plank edges at the bilge, also unusual. The hulls are clearly round - bilged, and parallel - sided for most of their length. Their stems are perhaps straighter and more vertical than drawings suggest; their transoms are upright and a very shallow "D" in elevation. The sterns are formed without a concave tuck but with a skeg formed in the deadwood. There are mouldings as rubbing strakes; capping rails; and small washstrakes at stem and stern. All have completely open holds (with in one case side cloths rigged); there are the usual short working decks fore and aft, perhaps fifteen feet long. The bulkhead at the forward end of the hold, at least, is not complete; there are small hatches on each deck; and in several cases a suggestion of a stove chimney.

The shape of the hull leads to conjecture about the run of the planking: the Hartshorne drawing in the collection and some folklore from down-river boats suggest that the floors could have been laid with carvel planking, merged into clinker planking on a different alignment at the bilge, to get round the problem of the planking runs at the very full, shallow bows. It would certainly be reasonable to employ flush planking on the flat floors in such a

shallow, rocky stretch of river.

Rudders are massively constructed, and because the barges were operated primarily by towing from the banks, at low speed and often shallow draft, they are very long - possibly as much as eight feet. The tillers are correspondingly long to reduce the effort and were evidently cut from carefully selected timber to elegant curves. The top edge of the rudder blade was also curved, in an "S" from. The sheer size of the rudder makes it unwieldy, and problems must have arisen in eighteenth century locks.

The single masts, usually with one square-sail yard, are set up by simple rigging: two shrouds and a relieving tackle (set up for alternative use as a cargo gear ?) each side is typical, all necessarily led aft of the tabernacle (of which little can be seen). No ratlines can be seen - largely superfluous if the whole mast can be lowered (at least if there is no topsail fitted), but nonetheless are seen in several drawings. There is no evidence that the heels of the trows' masts were counterbalanced (as for instance in wherries) and the load in the stayfall tackle is consequently of the order of half a ton when the masthead is lowered - heavy work, and the forestay has massive sister blocks leading to a simple timber-framed winch on the foredeck (there is also a heavy timber windlass in the eyes of the vessel for handling an anchor or warps). Backstays and running rigging to the yard appear from what evidence there is to run to timber-heads set on the quarters: but it must be said that the rigging is not generally clear - and only two photographs actually show sails, which are not set. The standing rigging in at least two photographs is seen to be formed of a long-link chain, which Stuart Smith considers to be colliery winding chain - doubtless near the end of its life !

One photograph and several excellent drawings show topmasts, set up behind the lowermast, probably to gain a couple of feet clearance under old stone arch bridges, which would often have to be negotiated in high water conditions; but possibly for other reasons also. For example, to facilitate the lead of the mast-head tow ropes, led high to allow the rope to clear obstacles and scrub on the river bank (the heavy tree growth in the banks along the old towing paths cannot be a long-standing feature !), or to be able to lower the topmast without first lowering the main yard. The topmasts could be struck independently of the lowermasts, perhaps to reduce the load on the stayfall tackle when raising the masts, or for clearances again.

The square sail yard is slung centrally and is generally seen stowed fore and aft between the shrouds, rather than crossed. This might indicate several things : habit formed of long necessity when lying against warehouses or other vessels, clearance on bridges, general disuse of sails, or normal use of the spar as cargo gear. Again, there is too little evidence. Strangely the topsail yard is stowed in a similar fashion, but below the main yard, which would have called for some intricate handling to get it across the forestay: even the main yard would require some direct handling to stow it between the shrouds.

Little can be seen of internal structures: the floors would be ceiled (certainly, except that one drawing shows two barges both with unceiled holds !), and a heavy sheer-clamp can be distinguished. There is no ceiling between the bilge and the clamp and the frames are seen in the gap. These are single timbers regularly spaced in the hold.

All else is conjecture: a light keel-plank, massive keelson, and framing on a largely ad-hoc basis, probably. Some at least of the later down-river trows were also lightly built; although the planking was flush-laid in these latter boats, it is quite clear that the frames were not pre-erected as in strict "carvel" fashion: much of the framing was fastened only to planking

which must have preceded it. The frames were single, and (away from the crutch and cant timbers at bow and stern) comprised floors cut from straight timber with only slightly up-turned ends, futtocks to form the bilge, and top-timbers from there to the capping rail, with timber-heads and rail stanchions added separately. As the size and range of trows increased the frames and fixings became correspondingly heavier, up to double frames in the style of large ships. Examples of various styles can be seen in hulks in the Lydney - Sharpness reach.

The following is a note of the more important items in the collection. A word of caution is necessary: many photographs are clearly different views of the same barge; the number of different barges represented is unknown. Few can be dated with any confidence.

Science Museum 33/39. Barge and Iron Bridge. Bow view with considerable detail. (Seen from a different angle in A1476 and probably in A902).

A9. "The last Severn trow" ("William", of Broseley), with a punt. A fine study from the port quarter, seen opposite Coalport. The punt is of the old Severn style, having deep sides, marked sheet, and undecked - the type can still be seen in Gloucestershire. The barge is also seen broadside-on in A623.

A11. Coalport ferry. Appears as a small flush-decked barge, and in A116 with curious repairs to the clinker hull. Also seen in A569, and A627, and in a poignant distant view in A1481.

A282. View of a barge at Ludcroft Wharf, from Benthall Edge.

A352. The classic view of the Severn Warehouse with three large vessels and a punt. The nearest is of much larger burthen than the other vessels seen in the collection; one of the barges is completely unrigged.

A696. Fine view of three barges at Ludcroft Wharf, with considerable detail.

A706. Intriguing view of a barge with a bulky cargo contained by hurdles supported on spare sweeps.

A598. Barge at Ironbridge. An exceptionally clear view of a barge loading a cargo of bricks.

A2312. Three barges aground at the Bower Yard, including the only topmast in a photograph.

There are also several valuable drawings in the collection, including :-

A1911. A sketch showing Ludcroft Wharf, Bower Yard and two barges.

Hartshorne drawing c.1858, from Northants CRO, of barges and boats at Bower Yard. Finely drawn, showing repair work. A small boat is shown fitted with a large winch, for no obvious reason.

A56. River scene, 1804. The finest of all trow drawings, it is from an original at Tewkesbury, where the scene is set. It epitomises the river prior to canalisation.

J. Fidlor's "Ironbridge", c.1850. Apart from the interesting details of the barge in this view, there is an intriguing variation of the "traditional" Ironbridge coracle.

We are clearly left with many unanswered questions and a long way from producing a reliable, comprehensive, drawing of a barge or trow of this period. Internal structure, underwater shape and details of rigging are matters largely of conjecture. The latter is profusely represented in countless drawings in the Museum's collection and elsewhere, but is generally of doubtful reliability and presents more questions than answers. If we accept the ratlines of Fidlor's "Ironbridge", for example - which certainly shows the topmast abaft the lowermast, should we not also accept the tumble-homed, circular coracle ! We must re-write the history of the Ironbridge coracle, too.

There is a distinct gap between the light and lively eighteenth and early nineteenth century vessels with their distinctively spoon-shaped bows and the barges of these photographs; just as there is between the clinker barges and the later trows of the canalised river. There is also a marked lack of rigging in these tethered Shropshire barges compared with those of the Tewkesbury drawing, indicating a gross difference in usage. The conclusion has to be, in fact, that these barges are the last few dinosaurs from a past age, effectively stranded by the unimproved shallows above Stourport, and finally displaced by the warm-blooded railway.

One final thought: just how significant is it that the known photographs of these large clinker barges are virtually all confined to the Gorge ?

R.A. BARKER

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A GRAVEYARD OF BARGES ?

As briefly mentioned in Journal No.6 (1978), the wrecks of no less than eight vessels resembling narrow boats were found that summer in the River Severn at Coalport by Mr. Ray Pringlescott and fellow-members of the R.A.F. Cosford Sub-Aqua Club. In an effort to solve the mystery of these wrecks, they were examined in some detail and an account of the survey was to have been given in this issue of the Journal. We have since acquired more information, making the publication of these details unnecessary.

It now appears that the wrecks were in fact of pontoons built sometime between the wars to act as a retaining wall for the river bank just above the Half Moon public house. With hindsight, this appears to have been a particularly abortive effort in civil engineering, not only because the stone filled pontoons are now some distance downstream but also because the movement of the bank into the river in that area seems almost irresistible. Rows of cottages have disappeared, and iron piles used for the same purpose as the pontoons can now be seen in the middle of the river, having turned right over in their journey from the bank !

One interesting piece of information came to light during the investigation. The public house which stood almost opposite the lower end of Coalport China Works was the 'General Gordon' and nearby the remains of a quay can still be seen.

R.PEE.

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JACKFIELD IN 1851 : AN ANALYSIS OF THE CENSUS RETURNS FOR THE RIVERSIDE PORTION OF THE PARISH OF BROSELEY

When we were first handed the census returns to analyse (1), we were unfamilar with much of the area; but gradually we began to know the area, and by what it was known in 1851. Three sections formed the riverside portion of the parish :-

1. North-east side of the road leading from Bridgnorth to the Ironbridge, to the Calcutt Pit and to the footpath leading to the Calcutt House; Ladywood, Upper Passage Ferry, Holly Groves, Lloyds Head, The Knowle.

2. The Rock, Jackfield Rails, Jackfield, Salthouse, The Tuckies.

3. East and north-east side of the road leading from Bridgnorth to Ironbridge, from Dean Brook to Broseley Old Furnace, and south-east side of the bridle road leading from the Old Furnace to the Tuckies or Coalport Ferry Boat: Dean Brook, Dunge Farm buildings and cottage, Pound Lane, Rough Lane, Coalport Bridge Road, Severn Lane, Coneybury, Cornbatch Dingle, The Folly, Hanley's Hatch, The Amies, Lower Riddings, Upper Riddings, Swinbatch and Rowton Farms, Tarbatch Dingle, Coalport Bridge Inn, The Old Rope Walk, The Towing Path House, The Werps, Ferry Road (at the Tuckies).

First, statistics of population and housing were examined. The number of separate dwellings in the entire area already mentioned was 348 - these were mainly concentrated along the river bank; for instance, thirty-four houses between the Ironbridge and Upper Passage Ferry, fifty-seven at Coalford, thirty-four at Lloyds Head, thirty-seven in Jackfield and forty-eight at Salthouse. Although the area was fairly poor, of 347 families only six houses were occupied with more than one distinct family and only five dwellings housed lodgers not related to the head of the household. It was perhaps a case of everyman's home being his castle. The entire population for the area was 1,630, and of those, 803 were males, 827 females. Two surprising factors emerged from the breakdown of the population figures :- one third were aged ten or under, and only twenty per cent were over the age of forty years. Life expectancy was, of course, much shorter, due to poor living conditions, lack of medical care and so on; but it is interesting to note that the sexes over forty years were equally balanced, so one can assume that the male working population was not unduly decimated by industrial accidents and diseases generally associated with the working man.

What were the employment prospects like in 1851 ? A large proportion of men and boys worked either on the river as watermen or as labourers: 14.8 per cent in each case. By comparison, a smaller number, only 11.4 per cent of men and women, were employed in the mining industry, reflecting the decline in mining this side of the River Severn. However, the clay industries were important: 9.9 per cent of the male population were employed as brickmakers. Of the employers, Theophilus Doughty, who lived at Coalford, employed ten brickmakers, while Yorkshireman William Exley at the age of thirty-eight employed five labourers, thirty-two brickmakers, fourteen coalminers and six bargemen at his earthenware factory. Another migrant was George Proudman, who hailed from Measham, Derbyshire. Mr. Proudman is styled as an earthenware manufacturer employing twenty-seven men.

For some men, being a publican in Jackfield must have been a very busy job. John Jones was the innkeeper of the Duke of Wellington, but he also records his occupation as China Potter; and likewise Thomas Jones, innkeeper of The Rock, whose other occupation was fishmonger. It is the dual occupations

of some of these men that distorts the facts regarding the drinking facilities in the area. One famous pub was the Dog and Duck, described at the beginning of this century as "a long low range of half-timber building abutting on the Free Bridge .... until lately an inn .... Carved on panels beneath the bedroom windows is the inscription 'C.A.M. May 30 + 1654' for Adam and Margaret Crumpton ...." (2) The Crumptons were known to the ferrymen in 1680, and it is satisfying to note that still in 1851 in these census returns, not far from the Dog and Duck, is a William Crumpton, proprietor of The Ferry Boat.

Some sixty-five per cent of the female population over the age of fifteen years stayed at home, although this figure did include all those with no defined occupation. However, the rest of these industrious Jackfield women knew no bounds as to their talents. Two innkeepers were recorded: one Mary Ann Board, who was a native of Guilsfield, Montgomeryshire, kept the Werps Inn, presumably while her husband was away from home; and Mistress Ann Edwards, widow, with the help of her two daughters, Lucy and Betsey, kept a pub in Lower Church Street. Ceramic workers with defined skills accounted 6.5 per cent, and the total of women and girls employed in domestic service was 9.05 per cent. This was a low figure for the time - probably because the china works provided alternative employment. Also recorded are shopkeepers, pit girls, brickmakers, farm labourers, washerwomen, an upholsteress; and one female records her profession as the oldest one in the world !

Jackfield School House was home to John and Hannah Wiggins, National Schoolmaster and mistress respectively. They came to Jackfield from Cheltenham, but the census reveals that Sarah and William, their children, were born in Broseley. These teachers were the only ones recorded in the census. Schools must have been very different from those in which children are educated to-day. For instance, the census records two children aged three years as attending school; numbers rising to a peak at eight years when twenty boys and fifteen girls are recorded as scholars; but then the figures decline so that at thirteen years, only three boys and ten girls remain. As a supplement to these facts, it is interesting to note the report of J. Norris, Schoolmaster at Jackfield in 1862, who had "resided here for twelve months. In the summertime, many children leave my school for the brickyards. These children are only a very small portion of the children at work - several girls between eleven and twelve have left in the summertime for the brickworks. The works are close to my house and I have often heard their conversation when at work and in going from work. I have heard bad language used by both girls and boys. I have also heard, on good authority, of very low conduct taking place between the young men and girls while at work" (3).
Eleven boys were at work at the age of twelve and the number increased to eighteen by the age of fourteen years. However, even younger child labour was in evidence: four boys aged nine were being employed full-time as ceramic labourers. One example was Edward Reece, resident of 17 Jackfield; he is described as a collier aged fourteen years. He may have worked with his two sisters, Harriet and Ellen, who were both labourers at the coal pit. His story, or rather that of his family, is worth mentioning as it is somewhat unusual. Edward's mother, Catherine, is a widow at forty-seven years, and it states in the census she is in "receipt of Poor Relief". Harriet Reece, daughter, aged twenty, and Ellen, daughter, aged seventeen years, both work at the coal pit; but what, you might ask, is out of the ordinary ? Well, the birthplace of Catherine and Harriet Reece was Madras, India, Ellen was born in the "Isle of France" and Edward in Benthall. Surely a story is to be found in the few lines that mention this poor, unfortunate family. Another woman with a tale to tell would be Mary Turner, late of Madeley, and now lodging in Rough Lane; her husband was transported !

Migration patterns were the final analysis that we undertook from the census. Although sixty-five per cent of the population was born in the same parish i.e. Broseley, and eight per cent in neighbouring coalfield parishes such as Benthall, Madeley and Wellington, migrants to Broseley came from many places. Shropshire migrants to Broseley were 16.11 per cent. Staffordshire's ceramic industry lost three per cent of its own thriving workforce to the ceramic industry of the Jackfield area. Among them was Peter Stevens, artist and modeller, who went to work at the China Manufactory. He must have settled happily enough, for he picked a Madeley woman for his wife and settled with her and his four children at Lloyds Head. Most other English counties were recorded, including Middlesex, Yorkshire, Devon and Leicestershire; also some migrants from Wales and Ireland. A question that arose from this part of the analysis was why did more women than men come to the area ? But perhaps some of the Jackfield watermen have already answered part of the question, as quite a few of them took their brides from various ports of call, namely Bewdley, Stourport, Worcester and Gloucester (4).

S. PERFECT and V. WEST

References

1. As members of the Social History of the Telford Area research group (Salop County Council Adult Education Service).

2. H.E. Forrest, The Old Houses of Wenlock (Wildings, 1914), p.89.

3. The Children's Employment Commission (1862) 5th Report.

4. A comprehensive list of the statistics used for this analysis can be seen at the Wilkinson Society Museum, Broseley.

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CORRESPONDENCE

New Hadley Colliery and Ironworks

Further to the article in Journal No.7 (1979), trying to compare the numbered shafts on the plan of 1809 with those on the section of 1812 reveals some surprising conclusions. The section is purely diagrammatic, since the numbered shafts do not appear in a line on the plan. I believe that the line of section was zig-zagged through the shafts, either because chronologically that is how they had been numbered, or geologically to give a more horizontal strata. There are very few instances where features on the plan fit in with features on the section ..... I have visited the sites of most of the shafts over the years and agree that they have either been quarried or tipped over; evidence of the shafts remain, but structures have gone except , as you stated, the Water Engine remains, which still existed last time I was there.

Dr. I.J. Brown, Wakefield (Aug. 1979)

Boat-building in the Ironbridge Gorge

With reference to the article in Journal No.4 (1976), I have a theory backed by some evidence about the names of the first four boats listed on P.7 which I should like to offer as food for thought :-

"BROTHERS", 1789	:	John and William Wilkinson ?
"JOSEPH", 1790	:	Dr. Joseph Priestley ?
"WILLIAM", 1794	:	William Wilkinson ?
"JOHN AND MARY", 1795	:	John Wilkinson and his second wife, Mary Lee ?

As evidence it should be noted that :

(i) all these boats were built within Wilkinson's time in this area;

(ii) there are other cases of Wilkinson using family and works names for his vessels - e.g. the brig 'Bersham' and the sloop 'Mary' (Journal No.3, 1975, p. 8);

(iii) the 'Trial' of 1787 was built by Wilkinson's carpenter John Jones, alias John o'Lincoln, perhaps the same man who built the 'Joseph' three years later.

So may I suggest that these are fair reasons to assume that the four boats listed may have been built for John Wilkinson or a company in which he was a partner. Furthermore, if these assumptions are ever proved correct, it would surely place Wilkinson in the big league of ship owners and add another interesting facet to his varied career.

H. Waterhouse, Manchester (Sept. 1979)

"King of the Ironmasters"

Further to the article in Journal No.7(1979), I enclose some notes on the Wilkinson family and its connections, and a correction.

John Wilkinson's father, Isaac (died 1784), of Clifton, near Workington, was a small farmer and also a pot founder with Backbarrow Company, Colton in Furness. He was described as "shrewd and intelligent" - this is illustrated both by the patent he took out for a laundress's box iron, and by his sending John to be educated at a dissenters' academy at Kendal, run by Caleb Rotherham, D.D.(Edinburgh). Rotherham (1694 - 1752) was born at Great Salkeld, near Penrith, and became the friend and correspondent of Dr. Joseph Priestley. These two dissenting divines would obviously greatly influence Wilkinson's well-known heterodox beliefs.

Miss Jessica Lofthouse, in 'The Curious Traveller through Lakeland', states that John built or bought his own little forge and furnace down the Winster river at Wilson House, near Lindale. From the Winster mosses he dug peat to use in smelting haematite ore. For ease in transport he cut a canal into the turbary and used a shallow turf-carrying boat. Tradition says he made an iron boat, the first of its kind, for this work. One was seen to sink in Helton Pool, a small tarn in which, they say, the "first iron ship was tried out". But when 'The Trial' was launched on the Severn in 1787, the Winster folk who had jeered "How dosta think iron'll float ?" were silenced.

John's brother, William (1743 - 1808), was educated at the Unitarian academy in Warrington where Dr. Priestley was a tutor. He too became an ironmaster.

Their sister, Mary (1744 - 96), married, in 1762, Joseph Priestley, LL.D. (Edinburgh), F.S.A. (1733 - 1804), who was born at Fieldhead, near Leeds. He was a dissenting minister, and a man of science who discovered oxygen. Mary has been described by one authority as Isaac's only daughter, but there seems to have been another, Sarah (1745 - 1808), who married Thomas Jones, a surgeon of Leeds; John's nephew and appointed heir was presumably their son.

In 1755 John married Anne (1733 - 56), daughter of the Rev. Thomas Mawdesley of Mawdesley Hall, Croston (Lancs), and Margaret (née Godsalve), whose grandfather was a merchant of Amsterdam. Anne's sister, Margaret (1753 - 1812), married John Wilson Robinson, Mayor of Kendal, 1756/7. Anne dying at the early age of 23, John later married Mary Lee, of Wroxeter (1723 - 1806). He had a daughter by his first wife but no issue is recorded of his second marriage. However, by Ann Lewis, his housekeeper, John had three illegitimate children - Mary Anne, Johnina and John. These three later assumed by Royal Licence the name Wilkinson, and in 1808 were granted arms as follows :-

Mary Anne :	gules a fess compony azure and argent cotised between 3 unicorns passant of the last, in centre chief point the chemical character of Mars (i.e. Iron) or; a bordure wavy ermine;
Johnina :	as above, but the bordure erminois;
John :	as above, but the bordure gold.

The Crest in each case was - a mount vert thereon a greyhound sejant argent collared compony azure and argent, the dexter paw resting on a bezant charged with the chemical character of Saturn (i.e. Lead) sable.

With reference to Wilkinson's arrival in this area in 1757 (p.2. paragraph 3) the lease on a furnace site at Willey was taken out from George Forester, Esq., (1735 - 1811), the 'Bachelor Squire' whose exploits were recorded by John Randall in 'Old Sports and Sportsmen, or the Willey Country'. George's cousin Cecil Forester inherited the Willey estate, taking the surname Weld-Forester, and was created the first Baron Forester in 1821.

L.F. Peltor, Bridgnorth (Nov.1979)

The Iron Bridge Bicentenary

With reference to your editorial in Journal No.7 (1979), I enclose a copy of the recently published 'Preliminary Report on the Kirklees Iron Bridge of 1769 and its Builder', which shows that an early iron bridge (since demolished) in the grounds of Kirklees Hall near Brighouse, West Yorkshire, pre-dated the Shropshire Iron Bridge by 10 years. The bridge, six feet wide and 72 feet in span, was built by Maurice Tobin, but its manner of construction and the type of iron used is still not clear.

R. Chaplin, Coventry (Dec. 1979)

(Note : Members can consult the Report in the Society's Museum at The Lawns. It has also been published in the Spring 1980 issue of 'Industrial Past'. Ed.)

John Wilkinson's Trade Tokens

Further to the article in Journal No.7 (1979), in which I found the letters between Wilkinson, Boulton and Westwood of particular interest, I enclose an account which distinguishes between counterfeits and genuine issues.

The coin was first issued in 1787, with the bust of JW facing right and the legend JOHN WILKINSON IRON MASTER. The edge reading was WILLEY SNEDSHILL BERSHAM BRADLEY. The first portrait is readily identified by the three buttons on his coat, issues of 1793 and 1795 having four buttons. The first reverse design was of the interior of a forge and was used for the issues of 1787, 1788, 1790, 1792, 1793 and 1795. In 1788 there were plans to produce a silver coin, value 3s 6d, and a design was produced with a barge and the words FINE SILVER on the reverse. This was not produced commercially though 100 in silver and a few in copper were struck. Instead the design was used on the 1788 halfpenny token. The third design, of Vulcan seated at his anvil, was introduced in 1790 and repeated in 1791 and 1792.

And now for the forgeries. 75 varieties of the token are thought to be genuine and 57 are forgeries of varying quality. All tokens with WILKINSON misspelt are forgeries; also all tokens with edge readings other than WILLEY SNEDSHILL BERSHAM BRADLEY are probably forgeries or manufactured curiosities. The Wilkinson obverse also appeared with the following reverses and were either forgeries or mules (combinations of incorrect dies produced at the manufacturers for sale to collectors):

1. Female seated with mining tools.
2. Figure of Moneta seated with scales.
3. Cypher H M Co. and legend CAMAC KYAN & CAMAC.
4. Female seated with harp.
5. Harp with crown.
6. Britannia seated.
7. Female seated and legend BIRMINGHAM MINING & COPPER CO.

The issue of tokens died out around 1797 when the well known cartwheel twopences and pennies (manufactured by Boulton) were issued, to be followed in 1799 by an issue of halfpence and farthings. The earlier cessation of the Wilkinson issue was probably due in part to a statement by the Shrewsbury Guilds, dated 9th June 1795, that they would only accept tower halfpence.

I add the following notes for anyone interested in buying examples of this handsome coin. The silver tokens are obviously very rare and may cost £200 or more in good condition. The ordinary barge issue is also very difficult to find, especially in good condition, and would cost £40 - 50. A recent sale in London of one of the largest collections of tokens to come on the market in recent years, did not include genuine examples of either type. Of the other tokens large quantities were struck: e.g. 1790 Forge "several tons"; 1790 Vulcan 206,000; 1792 Vulcan 103,000; and it is possible to find reasonable examples for £5 or so.

P. Criddle, Shrewsbury (Feb. 1980)

The Severn in South Shropshire

I have been taken to task by Mr. R.A. Barker for my remarks on the use of sails on Severn barges in part 2 of my article in Journal No.6 (1977), p. 5. Mr. Barker maintains that the pictorial evidence (apparently some of it photographic) is too strong to be ignored and that sails must have been carried right up to the end of the barge era.

I can only conclude that the difference between the effort required to tow the lightly loaded passenger barges of my experience and that required to tow

a fully laden barge of the period is very considerable and that any help was welcome. I must therefore concede that on very rare occasions a simple square sail would be of some help, but only to the extent where the tow rope was still the major means of propulsion and the barge still under the control of forces set up by the tow rope, the current and the rudder. I am still of the opinion that free sailing barges as shown in various pictures and indicated by some writers are figments of the imagination.

R.C. Pee, Broseley (Feb. 1980)