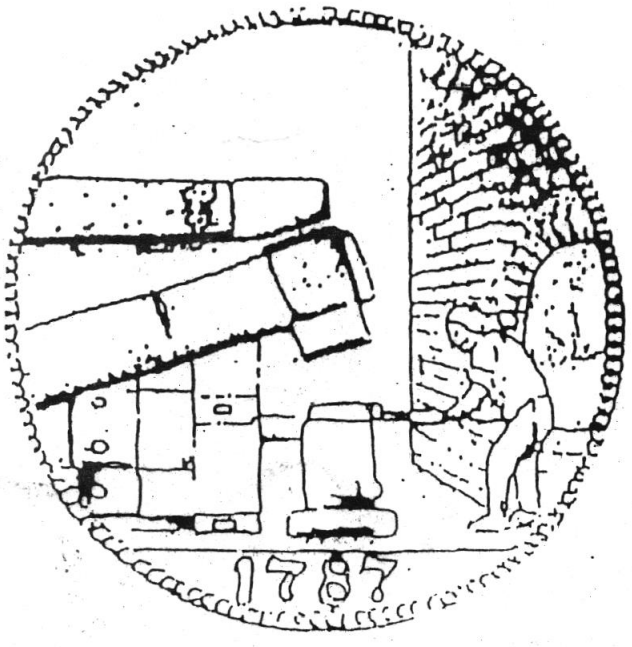
THE JOURNAL OF THE WILKINSON SOCIETY



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No. 14 : 1986

C O N T E N T S

Editor : N.J. Clarke
(February 1987)

E D I T O R I A L

As we approach the bicentenary of the launching of the world's first iron boat in July 1787, it is worthwhile to take stock of what has been written about this famous event. Apart from the few contemporary references and John Randall's "highly graphic not to say imaginative account of what took place" (Dickinson, page 26), remarkably little had appeared in print until recently, when members of this Society began to write up their researches. First, the late Ralph Pee in 1972 produced an article in the Shropshire Magazine entitled "The World's First Iron Boat" (the original draft of which appears in this issue); and then, in 1983, Ray Pringlescott contributed "The Trial Enigma" to this Journal. In the next issue, which will be published to coincide with the bicentenary, Richard Barker offers an authoritative account of "John Wilkinson and the Early Iron Barges".

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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, soon to be housed in the Stable Block of "The Lawns".

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.

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NOTES AND NEWS

In order to bring members more up-to-date with the recent changes regarding the Museum, these notes cover TWO years (1984-86).

The Year's Activities (1984-5)

The Twelfth Annual General Meeting was held at Broseley Church Hall on 12th October 1984. The Secretary's report included a reference to the fact that the Iron Roof in the yard of "The Lawns" had been dismantled and removed to the Ironbridge Gorge Museum, for eventual display there. All the committee were re-elected, with the addition of one new member, Mr. Ron Miles. Thanks were expressed to Mr. John Cragg, in his absence, for his past work (Mr. & Mrs. Cragg having left the district to live nearer their family). After the formal business, members examined the collection of china bequeathed to the Society by the late Ralph Pee. It was generally felt that the pieces not directly relating to the Shropshire china factories should be sold to raise funds to purchase some Caughley china for the Museum.

A Committee meeting was held in November 1984, principally to discuss the china bequest. It was decided to sell all but three pieces of the china for the purpose outlined at the A.G.M. A report was also taken on the successful completion of the restoration of the John Wilkinson memorial at Lindale.

On 23rd November, 1984 Mr. David de Haan gave a most interesting and informative talk on "The Portraits of John Wilkinson". To the surprise and pleasure of his audience, he included in his material the many different effigies on various issues of J.W. tokens, raising points which were new to most of those present.

On 12th December, 1984 we held our customary Joint meeting with the Friends of the Ironbridge Gorge Museum, at the Severn Warehouse. Steam railways in many parts of the world were discussed and illustrated in profusion. The Friends' Ladies Group provided the welcome seasonal refreshments.

The next meeting, the annual Social Evening, was blighted by very unpleasant weather on 15th February, 1985. However, the dozen or so members who did turn out were rewarded with some very interesting exhibits, the most interesting by general acclaim being Ron Miles' original Iron Bridge Share Certificate, carrying the actual signatures of Abraham Darby III, John Wilkinson and Edmund Harries.

On 22nd March, 1985, Mr. Ken Jones talked to members on "Oral History in the Ironbridge Gorge". The tape-recorded reminiscences of retired workers from various Shropshire industries were extremely well received by a large audience.

At long last a Summer Outing took place as planned on 16th May, 1985. A small but very enthusiastic group took Mr. Elcock's coach to Bersham and the Bersham Heritage Centre, where they were most competently and rewardingly guided by the Curator, Miss Ann Williams. Miss Williams spent most of the day looking after our party, including a very refreshing lunch at the City Arms, Minera, where the beer is home-brewed. On the way home some of the party enjoyed the Cup Final on the coach radio.

A Committee meeting was held on 13th June 1985. The resignation from the Committee of Mr. F. Clarke, due to ill-health, was accepted with great regret. Fred was a tower of strength during the move of the Museum from "The Lawns" to Broseley Hall, and his wisdom and experience will be sadly missed. The Committee also took note of the fact that Mr. & Mrs. Michael Berthoud had moved into "The Lawns". The main item of the meeting, the calendar of meetings for 1985-6, was then successfully completed.

The Year's Activities (1985-86)

The Thirteenth Annual General Meeting took place at Broseley Church Hall on 11th October 1985. Mr. Ron Miles was elected Chairman, and two new Committee members, Mrs. K. Ling and M. M. Berthoud, were also elected, replacing Mrs. V. West and Mr. F. Clarke. It was noted that Mr. & Mrs. West were planning to leave Broseley Hall by April 1986, and it was therefore agreed in principle that the Museum should be moved to a new site as soon as possible. Mr. Berthoud offered temporary accommodation at "The Lawns" should all else fail. It was also agreed that for the Social Evening in March 1986 we should experiment with a formal dinner and guest speaker. After the A.G.M., Mr. Roger Edmundson gave a short talk on the current market values of typical pieces of Caughley china, to assist members with future decisions on purchases for the Museum.

On 8th November 1985, our very own Neil Clarke entertained members with a discourse on John Wilkinson's involvement with new methods of transport, including turnpike roads, railways, and boats. This unusual slant on the great man's achievements made us recall, if we had forgotten, J.W.'s many-sided talents. During informal discussion after the talk, Michael Berthoud suggested that the Committee should visit "The Lawns" as soon as possible to discuss a possible more permanent site for the Museum. A meeting was therefore arranged for Sunday, 17th November 1985, at 11.00 hours.

At the meeting the Chairman, Secretary and Treasurer were shown around "The Lawns" by Mr. & Mrs. Berthoud, with particular reference to three possible sites for the Museum. It was decided that the Museum should occupy two rooms on the ground floor of the Stable Block, and that the Society should pay for certain repairs to the ceilings and the necessary electric wiring, to enable the move to be made. It was also decided to hold a jumble sale at "The Lawns" on Saturday, 14th December 1985, to start a fund for the work. The jumble sale was held as planned, and raised exactly £50 for the Society's funds.

Meanwhile, on Friday 6th December, 1985, the annual Joint Meeting with the Friends of the Ironbridge Gorge Museum was held at The Long Warehouse, Coalbrookdale. The multi-dimensional show on "The Great Western Railway from Paddington to Birkenhead" was hugely enjoyed by the capacity audience, and the Friends' Ladies Group did their stuff unwaveringly with seasonal refreshments for at least one hundred happy viewers.

During the months of February and March 1986 the repair work in the stable block of "The Lawns" was completed by Mr. J.R. Yates of Much Wenlock, at a total cost of £209 12p. Around this time, Committee member Eric Cox carried out a fund-raising exercise with local business organisations, and raised £50 in donations from W.H. Dixons and System Palletts.

We also purchased our first new piece of Caughley porcelain, a hand-painted blue and white centre dish from about 1785.

The Formal Dinner was held at "The Cumberland" on Friday, 21st March 1986, with Mr. Tony Herbert as guest speaker. Thirty-seven members enjoyed a generous meal off Coalport china, and Tony gave a highly amusing account of his recollections from the early days of the Society, reminding us that we were now fourteen years old!

Towards the end of March 1986, we were immensely saddened to hear of the tragic death of our former Chairman, Mrs. Veronica West. Veronica was our Chairman for only one year, but had been a keen supporter of the Society for a much longer time. It was largely at her instigation that, when the future of our Museum was looking very uncertain, we were invited to use the cellars of Broseley Hall as a temporary home for the Wilkinson collection.

Early in April 1986 a small but very willing party of members dismantled the exhibits in the cellars of Broseley Hall, and transported them to the stable block of "The Lawns", where they were piled up, still dismantled, in the two rooms allocated for their use.

On Friday, 4th April 1986 we held a joint meeting with the Broseley Society. The meeting was arranged as an open forum to discuss the question "What should be the aims of a museum in Broseley". After a lengthy and lively session, it was agreed to hold a public meeting on Friday, 17th April to explore the possibilities of setting up an independent Broseley Museum Trust. (This meeting was held as arranged and the Trust was initiated as a separate body, with members from both Societies).

During the summer of 1986 Michael Berthoud, Chris Whall and Eric Cox negotiated with the MSC to create a project which involves renovating the whole of the stable block at "The Lawns", to give accommodation for the proposed Broseley Museum and other major facilities, including a large meeting room and a study area. (The work was scheduled to begin on 1st December 1986, and at the time of writing (28th January 1987) is well under way).

Owing to the intense activity generated by the need to move the Museum, and the subsequent planning for the new Museum complex, there were no additional Committee meetings during 1985-6; Committee members found themselves together at frequent intervals on urgent Museum business, and routine matters such as planning the 1986-7 programme were sorted out as necessary on these occasions.

PROGRAMME OF EVENTS (1986-7)

1986

28th November - 14th A.G.M., followed by a run-down on the plans for the new Broseley Museum at "The Lawns".

11th December - Joint Annual Meeting with Friends of the Ironbridge Gorge Museum, Long Warehouse, Coalbrookdale, 7.30 p.m.

1987

March - June - Social Dinner

March - June - Joint Meeting with Broseley Society : Neil Clarke - "Broseley and the Domesday Book"

(dates to be arranged) - Formal opening of new Broseley Museum

(dates to be arranged) - Annual Outing : The Black Country Museum

MAURICE HAWES

THE FIRST IRON BOAT

Among the papers of the late Ralph Pee which were bequeathed to me for editing and possible publication was the draft copy of an article which appeared in the Shropshire Magazine in July 1972. It is reproduced here as written. More recent research has challenged some of Ralph's conclusions (as will be shown in the next issue of the Journal), but his pioneering work remains worthy of our attention

- Ed

Although the building of what is regarded as the first iron boat by John Wilkinson was not one of the great advances of the 18th Century, it was an innovation and a remarkably bold commerical enterprise. Its conception and construction was typical of Wilkinson's grasp of essentials and supreme self-confidence.

At the time of its launching the nation was recovering from the humiliation of the War of American Independence and by sheer native wit and inventiveness was forging the first links in the chain of events which led to the great industrial expansion we know as the Industrial Revolution. These first laborious efforts to 'get the wheels turning' were hampered by a lack of accurate machine tools, and to some extent by a lack of transport. With his boring machines and use of slideways, Wilkinson was already leading the way out of one difficulty; his building or iron boats was a small but, at least as far as his own business was concerned, effective contribution to the solution of the latter.

He was 59 years old at the time, and, although he now had a mansion at Bradley, still used Broseley as his address. With ironworks at Bersham, Bradley and Willey, lead mines in North Wales, interests in France and other enterprises, his industrial empire was by any standards considerable. The loss of trade in munitions which had helped so much in the expansion of this empire was more than offset by the increasing demand for iron and iron products and his near monopoly in the production of cylinders and parts for Watt's steam engines. This trade demanded an effective and widespread distribution system which was provided to a large extent by the use of canals and navigable rivers.

The first phase of canal building, hampered by the war, was now complete and the canal system, fed by tramways, served a considerable proportion of the country. It was especially comprehensive in the Midland area. Traffic was growing and the canals were paying, an indication that they were filling a pressing need. That there was a shortage of canal boats due, we are told, to a shortage of timber is not surprising. A traditional and highly specialised industry such as boat building is not readily expandable and there may well have been a craft jealousy and conservatism actively opposing expansion. It is not difficult to imagine the boat builders of the Severn, with more orders than they could cope with, becoming off-handish. Whatever the circumstances they were such as to give the impatient Wilkinson a reason, or excuse, to build his own boats using his own beloved iron.

Wilkinson believed, and he has since been proved correct, that uses for iron were practically unlimited. He did not however indulge in boat building merely to prove that an iron boat would float or to use iron for the sake of using it. He was no abstract scientist, and in any case, had already built

and used a small iron boat in his youth at Wilson House. He had also introduced boiler making into the Black Country, so would be quite conversant with the techniques of shaping and riveting iron plates. The construction of a boat built completely of iron would not therefore have presented any great difficulty. These boats, however, were to be purpose built to fill a specific requirement, i.e. to distribute his iron and iron products.

It may be for reasons of weight, expense or even pure expediency that the first iron boat was made from iron plates mounted on an elm framework. Although it is pure conjecture, its weight and carrying capacity indicate that Wilkinson approached the problem quite objectively and that the design was for the most efficient boat that could be made using iron as a major material and within the capacity of his work force. It must be remembered that he had had a good academic education and that his long association with Watt and the development of the steam engine would have taught him the value of a scientific approach.

It was reported at the time that his first iron boat, 'The Trial', was of nearly equal dimensions to other canal boats in use in the Birmingham area, being 70ft long and 6ft. 8½ins wide. The size of these boats was dictated by the size of the locks on Brindley's narrow gauge canals which were around 74ft. long, 7ft. wide and 4ft. deep. There was no waste of lock space. We are also told that the iron plates for 'The Trial' were made from 5/16 inch thick cast bars forged together. These were probably made under a trip hammer at Willey,

The precise reporting of the width, 6ft 8½ins, is noticeable and looks much more like a dimension from the drawing board than a physical measurement. It could well be made up of 6ft of cargo space, two 4ins ribs and two 1/4 inch plates. The plates would quite probably come down to 1/4 inch after forging. Elm 4ins x 4ins would be a very reasonable size for the framework. The depth of 'The Trial' is not recorded but we do know it weighed around 8 tons unladen and drew about 8ins of water. This indicates that it was flat bottomed. If it was built to carry the same load as the normal canal barge of the time, 25 tons, the depth, allowing 9ins of free board, must have been around 3ft 6ins. By making a few reasonable assumptions, it can be easily calculated that the plating on such a boat would weigh about 6 tons and a substantial elm frame around 1 ton, leaving a bare ton for extras, such as brackets, cabin floorboards, etc. These figures suggest either that 'The Trial' did not include much more iron than was required for the plating or that it was shallower and carried slightly less cargo than its all wood counterpart. If this is true, it seems probable that Wilkinson would choose the extra capacity rather than use iron for the sake of using it.

The model to a scale of 1/2 inch to a foot has been made in accordance with this evidence and contemporary prints of canal boats. It has been made as simply as possible with vertical stem and stern posts both because Wilkinson's workmen were not professional boat builders and because the barges of the time were very plain. The original may well have had a curved stem. The frame of 4ins x 4ins timber with ribs 3ft and strakes 1ft 8ins apart gives a regular lattice to take 3ft x 1ft 8ins plates, a reasonable size for working under a trip hammer. It is not known if the plates were riveted together into a continuous sheet or merely pinned to the frame. As riveting into a continuous sheet would have meant more work, and, as they were to be mounted on an elm frame, would have been rather pointless, they have been shown on the model riveted end on end into 'planks'. This would at least have given the boat extra longitudinal strength. The crew have been given a very small cabin as it was not the practice at the time for families to live aboard. The raised afterdeck is to allow the helmsman to see forward over the cabin roof. Wilkinson may well have used some iron

brackets and even iron bulkheads, but he could not have used much more iron without running into weight problems. No embellishments have been added, as any such would have been quite out of character. Even his fireplace in the house where this model was built is one of Thomas Pritchard's simpler and cheaper productions.

'The Trial' was launched and probably built at Willey Wharf under the supervision of John Jones, commonly known as John O'Lincoln, who seems to have lived at the Round House, one of the few remaining buildings which formed part of the Willey Ironworks. This house was occupied until fairly recently, but is now falling into disrepair. The exact location of the Wharf is not known, but Tarbatch Dingle is mentioned in this connection and it was probably near the bottom of this dingle, about a mile downstream from Coalport bridge. This is by no means the nearest point on the river to the site of the ironworks, but by following the dingle the 2½ mile route does not involve any serious gradients as would other routes over the intervening river terrace. It may be more than pure coincidence that the present overhead electric cables from Buildwas Power Station take a left turn near the site of the ironworks to follow the same route to the river and so on to the industrial areas of Staffordshire. There are local stories of rails having been dug up in the fields on the route indicating that the works were connected to the Wharf by a tramway.

The actual launching, probably sideways, on July 9th 1787, to a salute of 32 pounder guns was given considerable publicity possibly fostered by Wilkinson as a score over the recalcitrant boat builders. It is difficult to believe him when he wrote that unbelievers were nine hundred and ninety nine in a thousand, but he was quite right in thinking that it would be a nine days wonder, and after that a "Columbus Egg'. Tradition in the use of materials is very strong, but once a change is made it is very quickly accepted.

Few thinking people of the time could have doubted that 'The Trial' would float, but there may well have been many doubts as to is feasibility as a commercial proposition and as to its structural qualities. On the waterfront and in the boat yards there would also be some professional jealousy. Wilkinson himself appears to have had no doubts whatever, but the unknown quantities would be water tightness and longitudinal rigidity.

After its launching at Willey Wharf 'The Trial' appeared in Birmingham some fourteen days later laden with 22 tons 15 cwt. of bar iron, having presumably travelled by way of Stourport and the Staffordshire and Worcestershire canal. Its skipper, at least on this voyage, was Edward Palmer who lived near The Woodbridge Inn at the end of the Coalport Bridge, then a wooden bridge. There appears to have been some speculation as to who would be skipper. This may have been because this historic task was much sought after or possibly because of misgivings as to the boats performance. Prudence would surely dictate that it was not sent down river on its maiden voyage fully loaded, but it would be unlike Wilkinson to send it completely empty, so perhaps some of the bar iron it took to Birmingham travelled direct from Willey, a rare economy.

Having entered the canal system at Stourport, it is extremely unlikely that 'The Trial' was ever seen on the Severn again. Because of its deep banks often covered with bushes, and because the deep water channel could be in mid stream or even on the far side, Severn barges were towed by a rope attached to a sizeable mast mounted about a third of the boat's length from the stern. Such an arrangement would be quite impracticable with a boat 70ft long and only 6ft 8ins wide. This made transhipment on entry to the canal system at places like Stourport quite unavoidable under normal circumstances.

'The Trial' was launched in July; a second canal boat of similar construction was launched early in the September and a barge of forty tons for use on the Severn around the middle of October. The building of this barge, something like 50-60ft long and 16-20ft wide must have been quite an undertaking, but such was Wilkinson's confidence that he was not even present at the launching. Within a week it was at Stourport with a load of bar iron. The rapidity with which these launchings followed each other, the nature of the boats and their cargoes, suggest that in spite of its name and the publicity given to its launching, 'The Trial' was as far as Wilkinson was concerned, much more in the nature of a prototype than an experimental model. The object of his excursion into boat building seems to have been the speedy acquisition of a balanced fleet designed to transport his 'good iron' from Willey to the smiths and founders of Birmingham.

Although 'The Trial' was certainly the first boat of any consequence to be made largely of iron, a fact quite legitimately exploited by Wilkinson at the time of its launching, the use of iron for this purpose is only one facet of a remarkable enterprise by a truly remarkable man.

In spite of Wilkinson's success, iron boats did not become popular. Canal boats of similar construction were built by John Onions and Son to serve their Brierley Foundry some time later, but even to this day boats of this size are quite usually built of wood. The use of iron offered no advantage, but to the Iron Masters who built them, these iron boats were an effective substitute when normal boats were not readily obtainable. The iron boats and ships we know today are the result of a quite different line of development.

RALPH PEE

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BRADLEY IRONWORKS PLAQUE

Three members of the Committee (Audrey Morton, Maurice Hawes and Neil Clarke) were recently invited to a rather special occasion.

The John Wilkinson Primary School at Bradley is actually built on the site of Wilkinson's "pioneer furnace of the Black Country", and a plaque commemorating this was unveiled on Tuesday, 15th July.

Following the unveiling ceremony and a splendid buffet tea, the Headmaster of the school, Mr. P. Staley, showed a group of the guests the famous cast-iron pulpit in the local chapel.

Incidentally, a greetings card depicting Robert Noyes watercolour 'Bradley Ironworks 1836' is available from the Black Country Society, 15 Claydon Road, Wall Heath, Kingswinford.

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SHROPSHIRE RAILWAYS IN PRINT

The railways of Shropshire have certainly received a fair amount of attention from a variety of people during the past few years. Individual lines within the county have been well researched, in some cases more than once; for example, the Cleobury Mortimer & Ditton Priors Light Railway - by M.R.C. Price in 1963 (Oakwood Press) and by W. Smith & K. Beddoes in 1980 (Oxford Publishing Company). In addition, there have been several photographic albums which include sections on local railways; e.g. *West Midlands Branch Line Album*, by Anthony J. Lambert (Ian Allan Ltd., 1978) and *Branch Line Byways, Vol. 1 The West Midlands*, by G.F. Bannister (Atlantic Transport Publishers, 1986). But I want here to note publications covering the development of railways within Shropshire as a region.

Following the two volumes which gave some coverage of this county in the definitive *A Regional History of the Railways of Great Britain* (volume 7, *The West Midlands*, by Rex Christianson, and volume 11, *North & Mid Wales*, by Peter E. Baughan - David & Charles, 1973 and 1980), the most recent works have been:

Shropshire Railways Revisited (Shropshire Libraries, 1982) - a selection of photographs edited by members of the Shropshire Railway Society, with an introductory portrait by Barrie Trinder;

Railways of Shropshire : a brief history, by Richard K. Morriss (Shropshire Libraries, 1983) - surveying railway development in the county right up to the present, with a final chapter which looks at future prospects;

Rail Centres : Shrewsbury, by Richard K. Morriss (Ian Allan Ltd., 1986) - examining not only the development of an important regional railway centre but also the history of the many lines which served it;

The Great Western North of Wolverhampton, by Keith M. Beck (Ian Allan Ltd., 1986) - tracing, inter alia, the history of the Paddington-Birkenhead main line through Shropshire and its branches.

Most of the above works deal mainly with the operational side of the railways. There is still much serious research to be done on their social and economic effects in Shropshire in the late 19th and early 20th centuries. One recent contribution is the chapter *Shropshire Navvies : the builders of the Severn Valley Railway*, by Iris L. Harris in *Victorian Shrewsbury, Studies in the history of a county town*, by the Victorian Shrewsbury Research Group, edited by Barrie Trinder (Shropshire Libraries, 1984).

(This review originally appeared in the Newsletter of the Telford Historical and Archaeological Society, June 1986)

NEIL CLARKE