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

The Journal

The immediate area provides the focus for four of the articles in this issue, and the fifth looks at how John Wilkinson was influenced by and contributed to the ideas and movements of the 18th century. The articles represent ongoing researches and reminiscences of the members of our Society and others, and we are grateful to the individual contributors. Out thanks to Steve Dewhirst for designing and typesetting this issue.

Contributions for the next issue of the Journal would be welcome and should be sent by 31 August 2003 to the Editor, Neil Clarke, Cranleigh, Wellington Road, Little Wenlock, TF6 5BH.

The Spirit of the Age: Ideas and Movements of the Eighteenth Century and John Wilkinson

by Diana Clarke

[This is an edited version of the 2002 Annual Wilkinson Lecture]

John Wilkinson's life spanned a restless century of tremendous change across the spectrum of life - cultural, political, social and economic. In so far as history can be divided into identifiable chunks of time, every era has its own particular part to play in the momentum c history, and has produced its men of influence. But the eighteenth centur in England seemed to spawn more than its fair share of genius, especially in science and engineering, and John Wilkinson stands out as one of these great men of history. He was a giant of industrial and commercial enterprise alongside a century of such giants - Abraham Darby, Richard Arkwright, James Brindley, Josiah Wedgwood, James Watt, Matthew Boulton, William Reynolds and Thomas Telford -the roll call could go on.

What I want to do here is to suggest some ideas as to why 18th century England provided the unique context in which the entrepreneurial expertise of a man such as Wilkinson could flourish so spectacularly. Effectively his lifetime saw the world begin to shift from a traditional agricultural and craft economy to the forerunner of the kind of technology-based world we have today. Other countries had resources of coal, iron, limestone and clay, but it was Wilkinson's century in England where these raw materials began to be transformed into sources of power and elements of production. What were the specia circumstances about the situation in England, which meant that the right people were in the right place at the right time for the seeds of the industrial revolution to be sown?

Cultural

I am going to begin with ideas, the cultural and philosophical issues, the kind of ideas that were influencing the way people looked at their worlc during their century. The 18th century is often labelled the Age of Enlightenment or the Age of Reason. In England its ideas base both fed o and reacted against the preceding century. It fed on an interest in science as an experimental discipline that was emerging during the 17 th century; but at the same time it reacted against the extreme religious positions that had led to a vicious civil war, the beheading of the king, and a near

breakdown of society. The 18th century didn't herald an abandonment of religious belief, as the rise of John Wesley was to show, but questioning the nature of that belief through logic, philosophy, science and mathematics was no longer a heresy. Philosophically, the 18 th century saw itself as an enlightened age, which freed people from the dependent humility that had typified religious belief since the medieval period. The philosophy of Descartes introduced the idea of the body and soul as separate entities. This was a way of thinking that released reason and intellect as dynamic forces in their own right, and John Locke's philosophical justification of the supremacy of human reason assisted the impetus for scientific enquiry, which could now no longer be regarded as something akin to alchemy or witchcraft. Enlightened man was a Humanis with a belief in the autonomy of the individual, the power of the intellec and faith in the power of human reason to contain excesses of zeal and to point the way to progress. John Wilkinson could be seen as the epitom of individual endeavour, a man of science, a true Enlightenment man wh coincided exactly with his time.

Towards the end of the century, something new began to creep into the world of ideas. What we now call Romanticism was beginning to affect people's view of the world. The collaboration of the poets William Wordsworth and Samuel Taylor Coleridge produced a manifesto o Romanticism called the *Lyrical Ballads*. What poems like 'The Daffodils' and 'The Rhyme of the Ancient Mariner' were proposing was essentially a combination of Enlightenment humanism with the addition of the creative power of the human imagination. One way in which these ideas manifested themselves was in relation to how the landscape was no something detached and external, but was profoundly affected by our ow imaginative perception. The result of this was a concept called 'The Sublime' which permeated all branches of the arts, but especially in depictions of landscape. Of particular relevance here is the application of this new way of looking at the natural landscape to a new kind of scene, the industrial environment, which can be seen, for example, in Philip de Loutherbourg's painting 'Coalbrookdale by Night'.

The feeling of excitement and challenge that comes through in looking at this painting does, I think, reflect the way the new industrialists regarded their work. At the same time it reflects how their attitude to their work was helping to shape a way of thinking about a completely new way of life, where what was man-centred and manu-factured (made by man's hand) was coming rather forcefully into centre stage. John Wilkinson's enthusiastic and single-minded approach to his work was fairly typical of

Portrait of John Wilkinson by L. F. Abbott (IGMT Collection)

the outlook of his contemporary entrepreneurs. Obviously himself a man of imagination and drive, John Wilkinson's humanistic vision was one of technological advance and his motivation was individual success. He obviously enjoyed making and patenting, especially if it meant he could preen himself as 'Father of Industry' or 'King of the Ironmasters'. He was casting himself in a truly heroic mould, but it was not the traditional heroic of the battlefield, it was a modern heroic of manufacture and business.

In the realm of ideas, as I have said, this was an age of pragmatic faith. The introduction of the idea of Deism was an example of a type of mechanical, non-revelationary faith which proposed the idea that God had just wound up the clock of the world and then let it go until it wound down; and this is indicative of some of the rather secular religious attitudes of the time which remove ethics or moral obligations as faith-based ideas. It is

difficult to say how far Wilkinson's life was underpinned by a religious faith. The monument inscription Wilkinson devised for himself, although obviously designed to enhance his public image for posterity, does however appear to intimate a belief in God. Whatever John Wilkinson's level of personal belief, one thing is certain, the fact that he came from a dissenting background is of great importance to his development in two ways; in the need of the dissenter to compensate for the discriminatory practices against him, and in the nature of the education he was given.

Political fears associated with churches not under state control meant the exclusion of Roman Catholics and Dissenters from important aspects of society such as the holding of public office and the advantages of a university education. Despite becoming a very wealthy man, Wilkinson's only public office seems to have been as High Sheriff of Denbighshire in 1799. Many men like Wilkinson seemed to react with a phenomenal determination to succeed, which set compensatory mechanisms into action. That their achievements were especially apparent in the new mining and manufacturing industries was no accident because the protocols of the Establishment had not yet got a hold on these areas, so there was a vacuum waiting to be filled. Even more important was the refusal of the dissenting community to accept their exclusion from advanced education, so Dissenting Academies were set up. In fact, the young men who attended these had the chance of the best all-round education available at the time. While their Anglican counterparts were learning the classics, John Wilkinson and his peers at Dr Caleb Rotheram's Academy at Kendal would have been offered mathematics, science and technology, as well as the more traditional Humanities curriculum.

The breadth of interest of these educated men can be illustrated by the growth of clubs and associations, which interested themselves in all things scientific and cultural, the most famous being the Lunar Society in Birmingham. Founded in 1766, members met at each other's houses on the Monday in each month, which was nearest to the full moon. The time of meeting was chosen as a matter of convenience, to give members the benefit of moonlight in the ill-lit streets of the time, but it gave the association the name of Lunar Society, which it retained throughout its existence. The Lunar Society was small and informal, but it included amongst its members some of the best-known names in the world of science and thought, such as Matthew Boulton and James Watt, Erasmus Darwin the scientist and physician, and Joseph Priestley the chemist and Unitarian minister. Numerous visitors to Birmingham also

attended meetings of the Lunar Society, in fact any person who had achieved fame in any branch of science was likely to be invited, as fo example John Smeaton the engineer and Josiah Wedgwood the maste potter.

The informality of the Lunar Society was an asset in some ways, for there was free and full interchange of ideas, both with members and outsiders. Boulton described the meetings as a 'philosophical feast', anc Erasmus Darwin wrote of the gatherings, 'Lord what invention, what wi what rhetoric, metaphysical, mechanical and pyrotechnical, will be on the wing'. Both these comments reflect the breadth of interest of the participants. There is no record of John Wilkinson attending Lunar Society meetings as a member (minutes were not taken), but he was Priestley's brother-in-law and seems to have occasionally attended meetings as a guest. He would certainly have seen the advantages of networking with like-minded people. In addition to his links with the Lunar Society Wilkinson was also a member of the Society of Arts from 1787 to 1803, and according to the influential French playwright and philosopher, Voltaire, was aware of the intellectual climate of his time. The late Professor Chaloner claimed that, 'unlike Sir Richard Arkwright and other 18th century industrialists, Wilkinson was not a semi-literate nouveau riche. Through his French connections he entered the great republic of cultivated minds which Voltaire imagined he saw forming in Western Europe.'

Political

I have so far tried to show how Wilkinson and his activities are illustrative of the way the new manufacturing community was both reflecting, and contributing to, the ideas which were shaping the spirit of the age in which he lived. I will now move on to some of the political issues which were influencing 18th century life and helping to create a backcloth favourable to the phenomenon of English industrial innovation. First and foremost, for England it was a period of relative political stability, which was the legacy of various measures taken by Robert Walpole's Whig Government from 1727 to 1742. England had not been invaded, and where it was obliged to be involved in overseas wars, it made sure it expanded its territory, and therefore its wealth, as a result. The Anglo-Spanish war which began in 1739 was seen as a means of obtaining supplies of gold and silver bullion and tropical produce, and by 1763, the year which marked the end of the Seven Years War, the whole of Canada became British, with all the potential wealth that implies. In retrospect, what was actually happening was that North and South America and the West Indies were becoming not only providers of

good but, of more long-term significance, markets for the products of the English metal industries, 'Birmingham goods' as they eventually became known. At the same time, Continental Europe was held back by expensive conflicts, such as the War of Austrian Succession and the Seven Years War. English optimism may have been dented by the American War of Independence (1775-1783), but on the Continent a great catastrophe was brewing out of Enlightenment thinking. This was the French Revolution of 1789. In its early stages it was applauded by the more radical elements who embraced its democratic principles of Liberty, Equality and Fraternity. But even radical enthusiasm recoiled from the atrocities committed at the guillotine during the Terror. France was thrown into a long period of political upheaval, which eventually involved the whole of Europe in the Revolutionary and Napoleonic Wars. However, cataclysmic though it was, the challenge the French Revolution made to feudal systems with its assertions of the desirability of individual freedom, can be said to have paved the way to modern democracy. For many, too, the Revolution created the impetus for tremendous creativity. In the arts it led to fine classical French paintings typified by the work of Jacques Louis David. The classical phase that David's paintings represent later merged into the equally creative period of European and English Romanticism. The sheer excitement and consciousness of a new era can be imagined from the words of the young Wordsworth in his verse autobiography, *The Prelude*: 'Bliss was it in that dawn to be alive, But to be young was very heaven'. As an upwardly mobile man, resisting the marginalisation implied in his background and brimming with new and creative ideas, it is not surprising that John Wilkinson had some decided views on these political changes.

As a businessman, Wilkinson exploited the opportunities that wars gave to the iron industry; he won Government contracts to supply armaments, particularly during the Seven Years War. He also benefited from trade with the growing Empire. However, embargoes on trade with France during the American War of Independence interfered with Wilkinson supplying water pipes to Paris. He managed to get special dispensation from the Government, but it did nothing to diminish both contemporary suspicion, and later legends, that the Ironmaster sold munitions of war to the enemy.

There was considerable sympathy with the French Revolution within the Priestley/Wilkinson family circle, combined with a genuine hostility towards the established order of Church and State in England, although the degree of feeling naturally varied from individual to individual. At the one extreme, Joseph Priestley challenged Edmund Burke's anti-

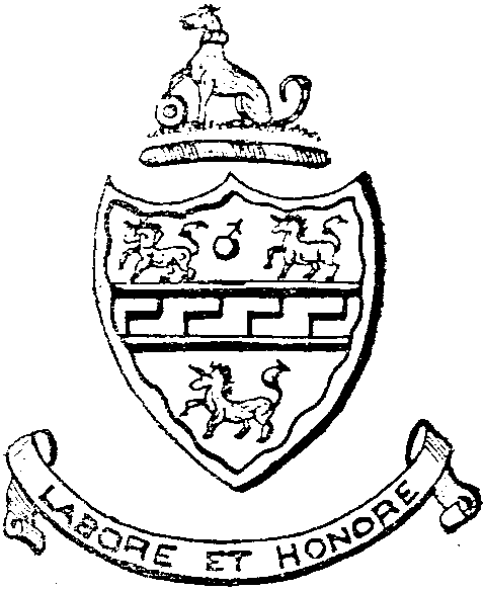
revolutionary treatise, *Reflections on the Revolution in France*, published in 1790, and went on to advise his own son William to leave for France in 1792 with these words: 'Go and live among that brave and hospitable people, and learn from them to detest tyranny and love liberty'. John Wilkinson's attitude towards the British Government on matters connected with his business affairs can be traced back to the American War. His general maxim was: 'Manufacture and commerce will always flourish most where Church and King interfere least'.

However, both Priestley and Wilkinson experienced hostile popular feeling as a result of their views, but whereas Priestley's Birmingham home was attacked in the Church and King Riots in July 1791, Wilkinson had taken adequate if alarming precautions to safeguard his property. In a letter to James Watt he wrote, 'Church and King as a watchword has been very near bursting out in this town. I have ordered six swivels to be mounted on the engine galleries at Bradley, also two howitzers for the mill yard on a carriage with a view to kill as few as you direct if necessary. We shall also prepare for a defence of like machines at Bersham ... There is more safety in a gun well-manned than will be found in a careless Justice'.

Undeterred, Wilkinson went even further. On Priestley's advice he purchased £10,000 worth of French Government bonds in 1791-2. Although it proved to be an unproductive investment in his lifetime, in 1815 under the terms of the peace treaty Wilkinson's trustees received half a million francs (worth over £20,000 then) from the new French Government.

Social

So far I have been considering some of the philosophical and politica factors which provided the background to Wilkinson's enterprise. I would now like to look at some of the social issues which could have been influential in his life and work. In the aftermath of the French Revolution a climate of suspicion in England gave rise to a huge distrust of anyone who could on any pretext be labelled a spy or a Jacobin supporter of the Revolution. Wordsworth and Coleridge, for example, were virtually quarantined for a time at Alfoxden House in Somerset while they wer investigated by the Home Office. But fear of civil disturbance on full revolutionary scale was far greater than the risk of it actually happening. Probably it was the particular nature of English society that prevented it. To a large extent the Revolution was fuelled by the grinding poverty of the lower classes in France, but perhaps even more influential there was the frustration of a resentful middle class whose desire to make



John Wilkinson's Coat of Arms

and sell was impeded by the restrictive practices imposed by a completely non-working aristocracy. There seem to have been special socia conditions which predisposed England as the platform for the industria revolution. For most of the 18th century, and even into the 19th, most of Europe was still in the grip of a dependent feudalism, a non-cash economy, predominantly agricultural, where serfs and peasants gave labour and taxes in kind in return for the right to live on a meagre subsistence level.

What John Wilkinson and his contemporaries were benefiting from was the relatively fluid social mobility of English society. Despite a definite class-based system and a continuing heavy dependence on agriculture, 18th century England had a significant and expanding middle class and the largest urban population in Europe. In any urban setting strict social norms are likely to break down, and the English middle classes were free of any dependence on the whims of an aristocratic landowner for their livelihood. They were as independent as only a wage economy could make them. Europe was still largely feudal in its elitist social structures and, as we have seen, it took a revolution in France to gain the freedoms already taken for granted by the English middle classes. It was certainly believed at the time that English society managed to avoid the

worst of extremes. A succession of overseas visitors, including Voltaire wrote of the lack of rigidity in the English class structure which enabled people to move up and down the social ladder. They were impressed by the lack of privilege; the Abbé Grosley was amazed that tolls on the new turnpikes were paid regardless of social distinction and without concessions for noblemen. To these visitors to England even the poor did not seem quite as downtrodden as their French or German counterparts, and the varying standards of living among that peculiarly English institution, the gentry class, could testify to this. And there was a whole army of professionals, doctors, lawyers and churchmen in particular, who were increasing in number and rising in status throughout the century. So what was the reason for this phenomenon? It seems that social values, distinctions and customs gave way in England before the sovereign power of cash. In England there were city bankers living as aristocrats and younger sons of gentlemen going into trade. It appeared to visitors that anyone who could dress the part could be regarded as a gentleman. An advantageous marriage or two could also work wonders. Tolerant attitudes to mutually advantageous marriages gave opportunities for advancement. The son of an impoverished gentleman could marry the daughter of a wealthy city man. Through her money, which automatically reverted to her husband on marriage, he held on to the lifestyle to which he had become accustomed, and she would gain the coveted entry into aristocratic circles.

John Wilkinson benefited greatly from sensible marriages, first to Anne Maudesley of Croston, Lancashire in 1755, and secondly to Mary Lee of Wroxeter in 1763. Both wives appear to have brought Wilkinson an 'ample fortune', which provided the capital that set him up in business at Willey, Bersham and Bradley between 1757 and 1766.

John Wilkinson's rewards show that there was much to encourage a man of ambition and talent who had bright ideas for making money and the desire to improve his social standing. In each of the centres of his industrial empire he owned substantial residences, such as The Lawns at Broseley. Wilkinson also purchased large estates where he built or took over further mansions, for example in 1779 he acquired Castlehead near Grange-over-Sands on the North Lancashire/Westmoreland border. Wilkinson also extended his estate ownership in his acquisition of the 500 acre Brymbo Estate near Wrexham in 1792, which he proceeded to extend further. Like any landed gentleman, he interested himself in improvements to his property and gardens which he delighted in showing off to his guests.

Is it surprising that a man who had built up such wealth and achieved such standing had several portraits painted? In addition, Wilkinson decided to consolidate his status and that of his descendants by applying for a coat of arms when he made his will in 1806. In other words, from humble beginnings, he had now acquired the much coveted trappings of aristocracy.

Economic

This brings me on to the important economic factors behind the personal success of a man like Wilkinson. Increasingly during the 18th century England was becoming Europe's most progressive society, largely because of the prosperity brought to it by an expanding empire, but also substantially as a result of the talents of its manufacturers, traders and agriculturalists. While Europe involved itself in debilitating wars, England was concentrating on wealth and commerce. In England the monied interest was taking precedence over other considerations, even ethical or legal ones. After the South Sea Bubble burst in 1720, Joint Stock companies were limited by statute, but this could not stop what the South Sea Bubble had heralded, the commercialisation of life by mid century.

Coupled with the unusually stable political regime, conditions in England were highly favourable for economic expansion from the 1730s onwards Low food prices meant higher spending on consumer goods, whic encouraged production in the new manufacturing industries. In many part of the country turnpikes were set up to improve the atrocious road network Wilkinson was quick to recognise the crucial role of improved transpor systems in the movement of goods. For example, in the 30 years followin his arrival at Willey in 1757, Wilkinson involved himself in improving transport facilities in the immediate area: he improved and extended existing tramways from the two ironworks at Willey to the River Severn; he became a trustee of the Madeley and Much Wenlock Turnpike Trusts; he was very much involved in the building of the Iron Bridge; an he launched the world's first iron boat, The Trial, at Willey Wharf in 1787

Better transport facilities in turn further stimulated production and trad especially in the metal industries of the Midlands which were producin household goods for the fast-growing internal market. By the 1750s th industrial base of the country was shifting away from the south-east to the Severn Valley, the West Midlands, Lancashire and the west of Scotland. At this time, John Wilkinson, always with an eye to personal advantage, gravitated away from Cumbria, via an apprenticeship in

Liverpool, to two of the most dynamic of these industrial areas, the Severn Valley and the West Midlands.

People were very aware at the time that extraordinary changes were taking place in England in the 1760s-70s, especially in the material life of the towns and cities where a new interest in space, hygiene and order was developing. Visitors to Manchester, for example, admired the Georgian preference for neat rows of houses and wider streets, as against the older narrow crowded streets and timber and thatch houses. The picture of the Manchester slums portrayed for example by Mrs Gaskell in the novel, *Mary Barton* in 1848, was a feature of the next century. In this early industrial period, although poverty existed, a new consumerist, middle class, urban lifestyle was emerging which demanded a constant supply of new consumerist goods to maintain it - and the new breed of manufacturers were only too willing to supply these demands by an early system of mass production unprecedented in any previous century.

Wilkinson certainly had his finger on the pulse of change. The ironworks he helped to establish at Willey, Bersham and Bradley all used the new fuel, coke. Wilkinson responded to the need for increased quantities of, and new uses for iron; and perhaps one of his greatest claims to fame is the part he played in the development of the steam engine. Wilkinson's boring mill, originally developed to bore cannon, was adapted to bore with accuracy the cylinders needed by Boulton and Watt for their steam engines.

By 1776 Adam Smith had published his influential economic treatise, the *Wealth of Nations,* which testified to a great confidence in England in the continuation of economic growth. It was this kind of confidence in the possibilities of continuing expansion that John Wilkinson and his peers were both motivated by and contributing to. There was an excitement about the age that encouraged innovation and a willingness to take commercial risks in order to achieve their goals.

Wilkinson was prepared to invest money abroad as well as in a variety of mining and manufacturing enterprises in different parts of this country. A good local example is his promotion of the Shropshire Canal in 1788. This canal was planned to run from the Oakengates area to the River Severn, and Wilkinson hoped it would directly benefit his new ironworks at Snedshill and Hollinswood. Wilkinson became by far the largest shareholder in the Shropshire Canal, owning at one time almost 20% of the total stock, worth £7,800 at the time, and almost 2 million pounds today.

The development of competitive economics in the mid 18th century concentrated the attention of the country on money. The writer Henry Fielding in 1749 said: 'The introduction of Trade ... hath indeed given a new face to the whole Nation, hath in a great measure subverted the former state of Affairs, and hath almost totally changed the Manners, Customs, and Habits of the People, . . . in particular it hath raised up the Power of the Purse'. In fact, money was wealth, gain was everything, and industrial gain was proving the commonest way of becoming wealthy. The actuality of Wilkinson's eventual fortune is staggering. In modern terms he would undoubtedly be classed a multi-millionaire. Unlike Continental Europe, England was increasingly prospering by developing its capital from its coal and iron resources. Even the landed interest was becoming a part of the general commercialisation of the English economy, land being increasingly treated exactly like an investment in stock, in trade and in manufacturing - a trend that was borne out by the depression in land prices that corresponded with any commercial recession.

Alongside this trend towards commercialisation was the development of new and creative ways of raising and using capital and managing currency issues. Again, English social flexibility was the key. By 1750, it was eminently possible in England to obtain credit, and by means of credit, for the wealth of one class of people to be productively employed by another class. As a local example, wealthy landowners who helped to finance the Shropshire Canal included the Marquis of Stafford, the Earl of Shrewsbury and Lord Berwick. Where there was the problem of only one national bank situated in London, but plenty of capital available in the country, the contingency was met by the setting up of private banking houses who could make that capital available. Wilkinson himself was involved in the setting up and running of local banks. For example, in 1793 he became a partner in the Shrewsbury bank of Eyton, Reynolds and Bishop which acted for the Coalbrookdale Company and the Ellesmere Canal Company; and in 1802 he jointly with Messrs Startin and Smith opened a bank in Union Street, Birmingham.

The type of capital investment also changed from being a floating, circulating capital to a fixed capital tied to a specific project. This made the investment permanent and gave a reliable regular income to the investor. For example, from his investment in the Shropshire Canal Wilkinson received an annual dividend that rose from 2½ per cent in

1793 to 5¼ per cent at the time of his death in 1808. Naturally there was a rise in vested interest associated with these developments which coul present its own problems, but it had its advantageous side too. The industri element in the House of Commons was becoming important, and even ir the House of Lords there were Peers who possessed coal-mines or rights to them, and were leasing land for industrial purposes, as with the Foreste investment in the Willey enterprise. Politics was becoming increasingly dependent on economics. The industrial lobby was becoming strong in policy decisions, a trend which would obviously favour the continuation o manufacturing interest.

Where the production of cash and coinage did not keep abreast of increase demand, Wilkinson and other manufacturers resolved the problem by producing trade tokens and notes which enabled them to pay wages for employees to spend locally. Wilkinson first issued promissory notes of small denominations in 1773 and 1774, but the practice was banned by Act of Parliament the following year, only to be relaxed again during the financial crisis of the 1790s. Perhaps the strangest practice of all was his use of French *assignats* bank notes to pay his workforce in the Wrexham area in 1792-3. However, this came to the notice of Chief Justice Kenyon and led to a Government ban of their use in 1793. Wilkinson was forced to call in the *assignats* and although he passed many on to friends visiting France, it took him years finally to get rid of them!

So far I have painted quite a rosy picture of industrial progress, and it has t be said at this point that there was a downside. The apparent necessity t put commercial logic before the ethical and moral needs of society reverberates through capitalist societies today. There can be no doubt that while industrial wealth was to some extent percolating through society, those most in need were often exploited or completely disregarded. If the businessmen who benefited from early industrial society had one thing in common, it was that they were usually self-made men like John Wilkinson who had to depend on aggressive use of their talents in an unremitting hands-on situation as investors, managers and makers. This was not a combination that lent itself to sentiment, and the were often prepared to be ruthless, not only in their dealings with competitors, but also with their workforce. Those who were perceived as providing no useful service to society were left to the tender mercies of a system of poor relief which was operated on the basis of the Elizabethan Poor Law of 1601. However, John Wilkinson to his credit was considered a relatively benign employer. As we have seen, on several occasions he overcame local shortages of small coinage by using his

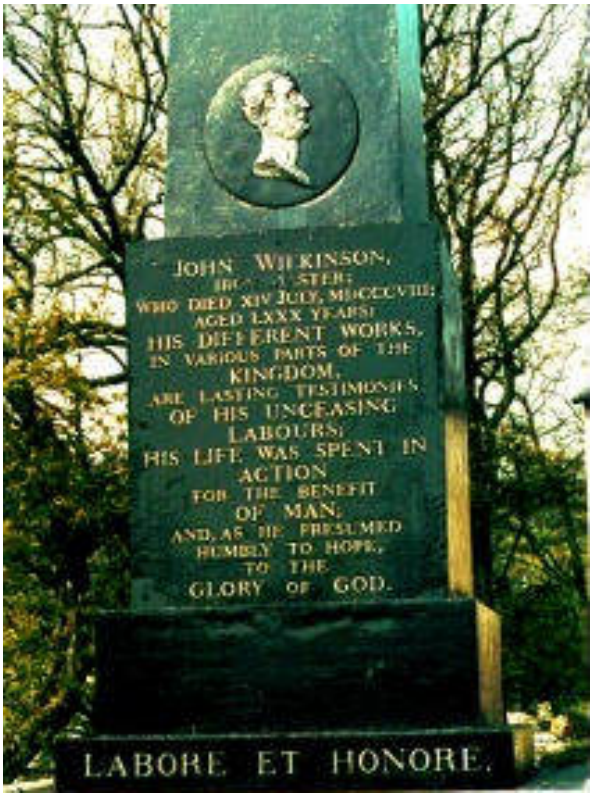
own notes and coins, and so ensuring his workforce were paid; he was reported to have granted pensions to aged workmen who had served him well; and he was the only Shropshire ironmaster to be commemorated in folksong. This is the last verse of a popular folksong of about 1800:

'Then let each jolly fellow take hold of his glass
And drink to the health of his friend and his lass.
May we always have plenty of stingo and pence
And Wilkinson's fame blaze a thousand years hence.'

Wilkinson's own version of competitive ruthlessness comes out most forcibly in his dealings with his brother, William. The fact that William wa the younger half-brother and a talented man in his own right may be factor; but the suspicion that developed between the brothers when William was working on the Continent eventually led to the acrimonious break-up of the working relationship at Bersham, and poisoned their relationship for the rest of their lives. On his own admission, John could be a resentful and angry man. 'Peace is a most desirable thing,' he said, 'and the more so to one of my constitution who cannot be angry by halves Resentment with me becomes a matter of business and stimulates to actio beyond any profits.' And no doubt Lord Dundonald, who was experimentin with coking ovens at the Calcutts, wasn't the only businessman at the time who felt strongly about Wilkinson, as the following letter to William Reynolds indicates:

'I dined with William Crawshay in London, Wilkinson was one of the party I showed them drawings of the improvements in coking coals which I shall not patent and which gentlemen in ironworks are welcome to use ... Wilkinson said my improvements were not new, but he had used them for some years On questioning, it appeared his method is that which you employ at Ketley. This is not the only instance in which the invidiousness, the malevolence and the badness of John Wilkinson's heart has been apparent to me. He tried to set you and me at variance about 12 years ago, and since that time John Wilkinson has never forgiven me and has it in his heart to do me all the injury in his power.'

Yet there can be little doubt that the efforts of John Wilkinson, his peers and his successors have made an incalculable contribution to the standard of living we have in England in our own century. What I have tried to cover are some general ideas about the cultural, social, political and economic factors which enabled men like John Wilkinson to lead the worl into the industrial age. But I hope I've also shown that John Wilkinson wa special. There are few who could match his energy or his flair. That he was in a class of his own is indicated by the legend that grew around him when



The Wilkinson Memorial at Lindale

he died. At Bradley where both his iron coffin and obelisk had been cast the belief spread that he would revisit his beloved blast furnaces on th seventh anniversary of his death; and it is a tribute to the power of his personality, that on July 14th, 1815 several thousand people assembled on Monmore Green near Bradley, expecting his ghost to make an appearance, riding his grey horse. The fact that he didn't turn up doesn't appear to have diminished his reputation! You could say the predictions half came true, because 13 years on in preparation for the sale of Castlehead, his iron coffin was dug up and transferred into nearby Lindale along with the obelisk. The obelisk was removed to its present position in 1863, and its recent restoration bears testimony to Wilkinson's enduring reputation.

The Burning Well of Broseley

by Sylvia Watts

The following description of the Burning Well at Broseley is included in a discussion of the origin of bituminous substances in various parts of the world which formed part of a lecture given by Thomas Beddoes. Notes for a series of lectures which are undated, but were probably given in the late 1780s, survive amongst miscellaneous papers of Thomas Beddoes in the Bodleian Library, Oxford. The description is similar to that given by John Randall in his history, *Broseley and its Surroundings*, but has some different details which might be of interest.

Thomas Beddoes was one of the leading physicians and scientists of the late 18th century. He was born in Shifnal in 1760 and after many years of study at Oxford, Edinburgh and Paris became a lecturer in chemistry at Oxford in 1787. The notes for his lectures show that he covered a wide range of subjects such as geology and electricity which would not be considered as part of chemistry today.

Thomas Beddoes says that he had been told that the Burning Well was about two hundred yards from the west bank of the River Severn, almost exactly opposite the more well known tar tunnel on the east side of the river. Beddoes quotes a description of the well as it was observed in June 1711 (he does not give the name of the observer). '"...after a remarkable day of thunder there was heard a terrible noise and a light which awakened several people who, rising to see what was the cause, came at last to a boggy place under a little hill about 200 yards from the river where they perceived a mighty rumbling and shaking of the earth and a little boiling up of water through the grass. They took a spade and digging up some part of the earth immediately the water flew up to a great height, and a candle they had set it on fire. To prevent the spring from being destroyed, says the narrative, there is an iron cistern placed about it with a cover upon it to be locked and an hole in the middle thereof that any one may come to see the water through. If you put a lighted candle or any thing of fire into this hole, the water immediately catches fire and burns, and continues to do so as long as you keep the air from it, but by taking up the cover of the cistern it immediately goes out. Meat and vegetables have been cooked over this flame."

'After this the well was lost till May last year... the proprietor attending to a rumbling noise under the ground like the former well made, though

in a lower situation and about 20 yards nearer the river, he happened to hit upon it again. The well to the depth of 4 or 5 feet and 7 feet wide within that is another lesser hole of like depth dug, in the clay in the bottom whereof is placed a cylindrical earthen vessel of about 4 or 5 feet wide diameter at the most, having the bottom taken off and the sides well fixed in the clay which is rammed close about it. Within the pot is a brown water thick as a puddle continually forced up with a violent motion exceeding that of boiling water and a rumbling hollow noise rising and falling by fits 5 or 6 inches, but there was no appearance of a vapour as it was hot.

'Upon putting down a candle at the end of a stick, it took fire at about a quarter of a yard distance, ... a tea kettle has been made to boil in 9 minutes time, and the well has burned for 48 hours together without any sensible diminution. Upon extinguishing the flame by closing the earthen vessel a sulphurous smoke ascended. The water was very cold to the touch.'

Beddoes added that little was known about the tar spring on the other side of the river; '... It has a thick consistency, notwithstanding it has penetrated the rock through which it flows to a considerable depth, which seems to indicate that it has lain there for a considerable time, and there it might certainly have remained for ages longer had not the drift or level carried through the rock opened it a free passage.'

Though Beddoes was writing when the study of geology was still a relatively young science, he understood the importance of stratification and that the time scales involved in geological processes were immense. He had formed the then advanced conclusion that all forms of bitumen were derived from plant decay in the remote past. Though Beddoes knew the area around Shifnal and Ketley well and shared his interest in geological matters with the ironmaster and scientist, William Reynolds, he does not appear to have witnessed the Burning Well himself but to be quoting from the accounts recorded by others.

The Subterranean Secrets of 'Rivendell'

by Michael Pope

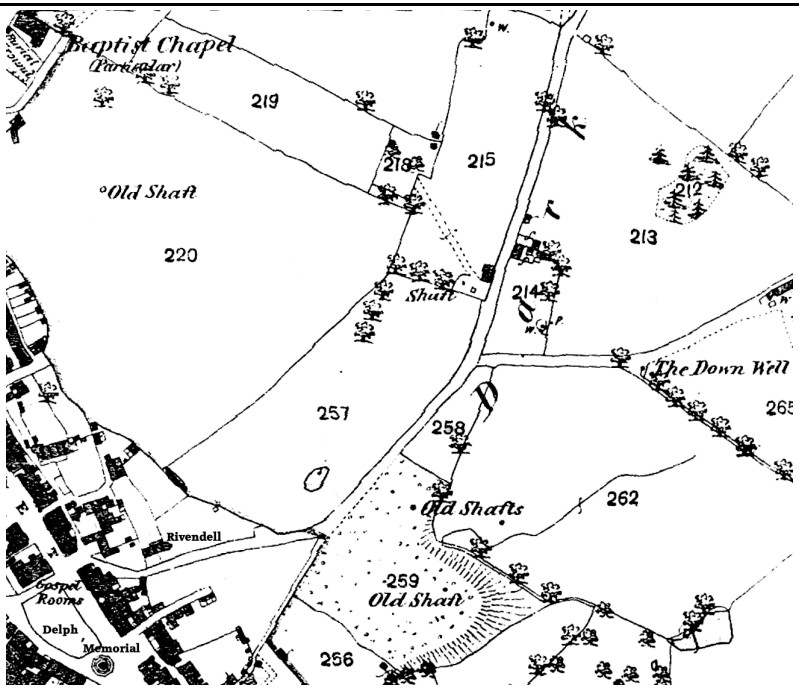
[This is an edited version of the talk given at the Society's Summer Soirée held at Michael and Gillian Pope's home, 'Rivendell', Dark Lane in June 2002]

The house was named Rivendell when it was built in 1977- a name derived from a little dell at the far end of the garden. Those of you who are fairly new residents of Broseley might not be aware that until quite recently Dark Lane was what its name implied. It was a quiet, dark, narrow lane linking Broseley High Street with the Ironbridge Road. You can tell how narrow it was because the telegraph pole on the pavement outside the little bungalow opposite was on this side of the lane. Then the school was built lower down the lane; a number of housing developments took place and the lane was widened to accommodate the extra traffic.

If you study the old Parish maps you will see that there were basically two areas of land on which the house now stands. Next to the road there was a small stone cottage with a garden which extended to about five yards behind the present house. Len Morris, who now lives in Bridgnorth Road, lived in this cottage for 43 years before moving out in 1959, following a demolition order being placed upon it. It was situated where the separate garage is now and much of the stone from the building was used in the construction of the present garden. You can see the remains of the old privy at the top of the garden. It is my intention to rebuild it.

The other area of land consisted of a very old orchard - only one or two of the trees are still alive - and what was called Doctor's Yard. It should more appropriately have been called Knackers Yard because it was the site of the old slaughter houses which served the butchers shop belonging to the Instone family - now the Wine Bar.

When my wife bought the land in 1986 it was more or less inaccessible - a jungle of nettles, brambles, Japanese knotweed and collapsed buildings. The stables and storehouses were nearest the high Street and the slaughterhouses were tucked away next to the field. Under piles of bricks and slates we discovered the original brick floors to the buildings and to the pens where presumably the animals were kept before meeting their fate. You can see an old cow chain hanging from the ash tree. Now we only have a barbeque up there! Over the wall where Mrs Sweetlands bungalow is built there was a row of cottages which I understand faced towards the car park. Where the car park is now there was another cottage where Harry and Peach Ball lived. There was a yard with a number of sheds from which he ran his business as a coal merchant and haulier.



Dark Lane in 1883 with the Delph at bottom left

Having taken on this wilderness, Gillian and I decided that we would have to do something with it. We devised an overall plan and then tackled an area at a time - pool area, top patio, the lawns and borders, the gravel area and so on. The garden is interesting because it has played a major role in the provision of a water supply and sewerage facilities for the residents of the town. Before 1861 Broseley was deplorably deficient in water. For instance, the rainwater from the Wesley Schoolroom sold for £7-00 a year. There was of course the Delph Pool in the Square, which collected rainwater from the street, but it was also the means of disposal for sewage from the surrounding houses. It was a real health hazard and was eventually filled and levelled in June 1861. This problem had pre-occupied local dignitaries throughout the 19th century. One such, the eminent George Prichard, in response to this dire need sank a shallow well in the Square near where his memorial was eventually built. The pump supplied four gallons a minute and relieved pressure on the Down Well further down Dark Lane; this previously had been the only source of water for the town and tended to dry up in the summer. Residents were therefore only allowed to collect water from this well between the hours of 6 a.m. and 8 p.m. and were restricted

to 5 gallons per day. A man was stationed at the well to make sure that this quantity was not exceeded. With the well in the Square the people of Broseley for the first time had a constant supply of clean drinking water. Local politics then came into play. George Prichard requested a payment of £10-00 per annum for the water but the local water committee refused to pay such a sum. A local fracas ensued and in the end Prichard disconnected the water pump. The whole town was in an uproar and it was not resolved until after George Prichard died on Christmas Eve in 1861

Following his death his friends proposed to build a memorial to his memory in the Square. The Town Council eventually agreed that it could be built, no over the original spring but a little distance away. They sank a 30 ft well which cut into an ironstone water course and which seems to have supplie poisonous water for local consumption. The sad story of the Prichard memorial continued. It never provided drinkable water. It seems to have been used as a latrine by the locals. One young lad fell to his death down it and of course it was eventually demolished. The saga continues with the proposed clock tower to be built on the site.

After the fiasco of the Prichard water supply, the Town Council in 1875 decided to build a reservoir at the bottom of the garden at 2 Dark Lane, th lowest point at this end of the Lane. The reservoir would hold 118,000 gallons of water and was to be fed by a spring in the adjacent field, which is still there. This supply was inadequate and so an attempt was made to pump water into the reservoir from the Down Well. The enterprise was not a success. When the reservoir was almost completed the Town Council arranged a celebration. A Supper and Dance was held inside before it was finally sealed over. Disaster struck again in 1895. The reservoir ran dry. It had been built over a mining shaft. Subsidence took place. Cracks appeared in the bottom of the reservoir. Local builders were employed to repair it at a cost of £80-00. But to no avail; the water leaked out again. The water supply dried up. The air vent to the reservoir can be seen, adjacent to the lawn at the bottom of the garden. What do you do with an empty reservoir? The Town Council came up with a brilliant idea. Many properties in the town centre had no means of disposal of human waste and so the Council decided to run th first sewer into the disused reservoir. The mains were laid down the High Street, then between the buildings opposite Carvers Road and across Instone's garden and into the reservoir. The manhole next to the car park reveals a beautifully built brick-lined culvert. Unfortunately the sewage soon sealed the cracks in the reservoir floor, it filled up and spilled out all over the Dark Jane. Another health hazard. The father of Mrs A.M. Thomas of Mill Lane, a Mr C. R. Jones, is said of have contracted typhoid at the turn of the las century because of the unhealthy state of the Dark Lane.

Broseley Gasworks

by Peter Hutchinson

We all now take the supply of gas for our own domestic purposes as a matter of course, without much thought for its origins. Today it arrives at our home via a pipe from, somewhere in the North Sea. It once was very different in the days when most towns and the larger villages had their own gas works and gas was produced from coal. You would usually find the gas works in the dark by following you nose. Who would have thought that Broseley had its own gasworks? It did but not many people know that.

The works were situated over a mile away from Broseley town centre on the south bank of the river Severn not far from the Free Bridge; although the bridge was not built until 1909, whereas the Broseley Gas and Coke Co. Ltd was formed in 1873. The Shrewsbury railway down through the Ironbridge gorge to Bridgnorth was already established in 1861/62.

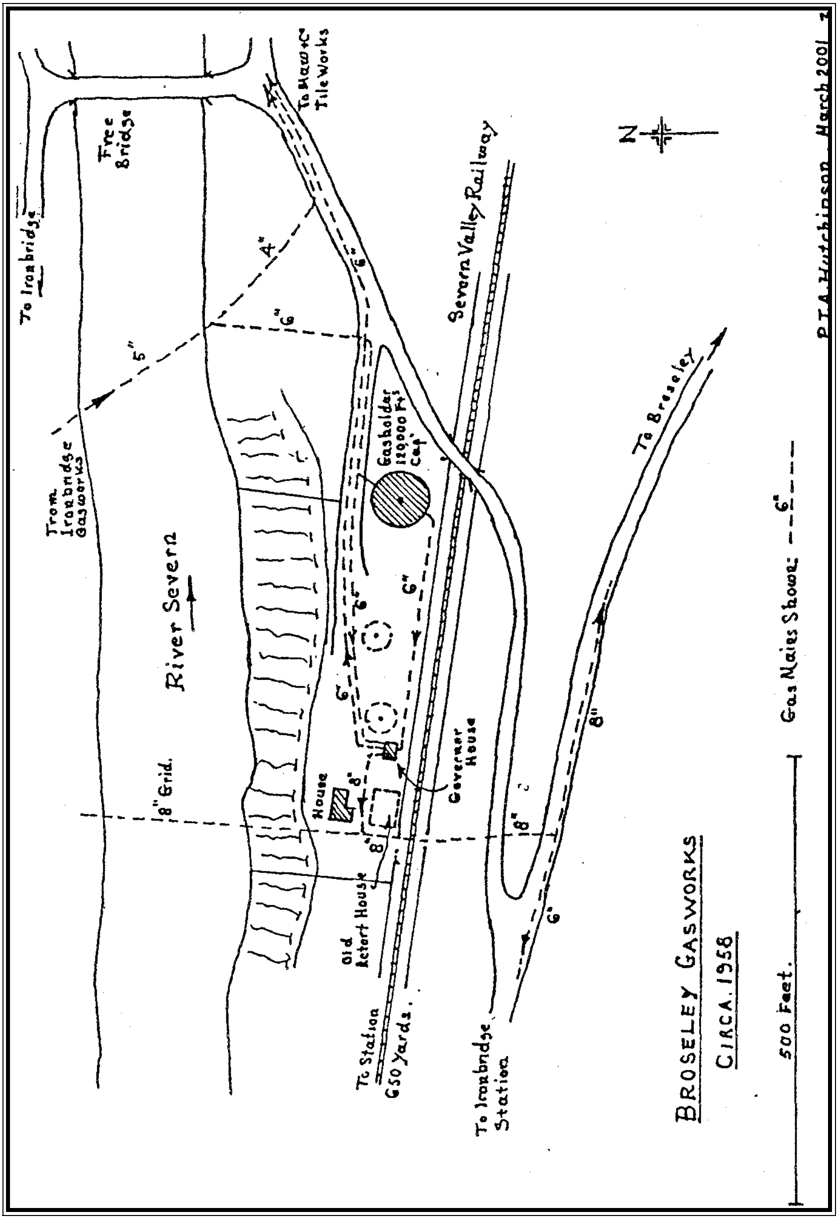
Why was the works built in such a position? The following extract from a contemporary copy of the 'Gas Managers Handbook' might explain:

'In choosing a site for a Gasworks consideration would be had to its position, which should be at the lowest or nearly the lowest part of the district to obtain the advantages of the natural increase in the pressure of the gas in travelling to the high levels.

It should if possible, be alongside a railway, navigable river or canal for convenience in the delivery of coal and other materials and the disposal of such of the residual as are despatched to a distance.'

The situation chosen for the enterprise was ideal. Broseley Gas Works was connected with the Ironbridge and District Gas Co. Ltd and was a separate gas manufacturing unit in its own right - having a retort house, gas cleaning and sulphur removal plant plus two small gasholders. The two works were connected by a gas main across the bed of the river.

Just before the 1939-45 war a new and much larger gasholder of 120,000 cubic feet capacity was built by the Donnington firm, C & W Walker Ltd. By the time the Gas Industry was nationalised in 1949 all gas


Broseley Gasworks
Circa 1958
500 Feet.
Gas Mains Shown: 6"
River Severn
Free Bridge
To Ironbridge
From Ironbridge Gasworks
To Maw & Co Tile Works
Severn Valley Railway
To Broseley
Gasholder 120,000 Ft3 Cap'
Governer House
House
Old Retort House
8" Grid.
To Station 650 Yards.
To Ironbridge Station
P.T.A. Hutchinson. March 2001

Broseley Gasworks (bottom right) in the 1930s showing the two original gas holders. The larger Ironbridge works can bee seen on the other side of the river (top left)

making at Broseley came to an end and gas was supplied from the Ironbridge undertaking.

By the 1960s all the smaller gas works in Shropshire were closed, gas being supplied from the larger units such as Shrewsbury and Wellington, and a network of connecting gas mains was installed. Broseley's small part in this was to have a new 8" steel as main laid across the river connecting it with Bridgnorth and Ironbridge. To install the main in the river, it was built on a scaffold bridge erected between the river banks and then lowered into a trench dredged out of the river bed. Two attempts had to be made to accomplish the crossing - the first attempt was thwarted by a flood which washed the scaffold away. The sketch map gives the location of the works in the late 1950 s and the layout of the gas mains.

By the 1970 s Shrewsbury and Wellington closed as manufacturing units and the County went on to North Sea Gas.

[*Text and map reproduced from 'Shropshire Unfolded', June 2001, by kind permission of its editor and the author]*

Working in the Area in the 1930s
Part 2 of my Autobiography

by Jack Owen

Much Wenlock

I got my first regular job at Hunter's Tea Stores in Much Wenlock where I started on 2nd September, 1929 at the age of 15. It was a fifty-two hour week, if you were lucky; you invariably were, as you rarely finished on time. It was four miles from home to work and I used to cycle there and back. In the dark evenings I used either an oil or an acetylene lamp and, as the road rises to over seven hundred feet above sea-level, some winter journeys were a bit rough. On Mondays Tom Salt, the manager, went out on his BSA motorcycle combination around the outlying area getting orders Before he went he gave instructions of what we had to do and if we hadn't completed the tasks before he returned, he cursed us.

My first job on a Monday was to clean the shop windows. Then two older youths and I had to re-stock the shelves and fixtures, which had been depleted on a Saturday. The work was hard and, before I was sixteen, I was carrying two cwt. (224lbs) sacks of sugar; sacks of bacon (containing one Danish side, plus four or five English flitches); and sacks of flour, wheat, bran, sharps and maize, each sack weighing 140lbs (10 stones), Cheeses averaged from 90 to about 110lbs.

When main crop potatoes were ready the manager would buy a ton or more in one hundred weight bags. These had to be carried up three flights of stairs to the room where they were stored until required. With the exception of packets of tea, everything had to be weighed up. Sugar was the hardest job; the manager only allowed a team of three, twenty minutes to weigh up two hundred weight into one pound, two pound, three pound, four pound and six pound sugar bags.

As the youngest my job always meant delivering grocery orders by carrier bike around the town, also to outlying villages such as Walton, Shirlett, Sheinton, Homer, Callaughton and Harley. On my half day off I had to leave my bike at the shop and take the carrier bike loaded with grocery parcels to deliver at Benthall and Broseley; all for eight shillings a week. This amount lasted until I was sixteen, when my wage was raised to ten shillings a week; but then I had to pay one shilling and one half penny for National Insurance!

My parents were worried about the loads I was having to take on the carrier bike. Because they were too large for the proper basket, they loaded them

in either a large clothesbasket or a half tea chest. Both these were too large to fit in the carrier so had to be perched on the top of it; thus they severely restricted the steering, which caused me to have a few spills.

Some things of local interest happened while I was working there. Much Wenlock church steeple was dismantled in 1930, leaving the church with just it s tower, as you see it today. The steeplejacks fixed ropes to the top of the steeple then sat in their cradles suspended a little above the tower. Kicking their feet against the lower part of the steeple they enjoyed themselves swinging around, while people in the street below gazed up at their antics in amazement. Also a very sad thing happened, which shocked the town; Mr Christopher, the chemist, committed suicide.

Maw's

As I said, my parents were worried about the loads I was expected to take on the carrier bike and the weights I had to carry. The outcome was that I left on 4th October 1930 and my father got me taken on in the engineering department at Messrs Maw & Co. Ltd, where I started work three days later. I was employed as an apprentice and, as such, had to do the menial tasks. My first job was to fetch a shovel full of gleedy coals from the boiler house, about 200 yards away, and bring it back to the workshop, i.e. fitting shop, and get a fire going in the stove. The main purpose of this stove was to be able to place the bottom dies, which were used to press the dust to make encaustic tiles, on the flat surface of the stove. This had to be done as they needed to be made sufficiently hot enough to put a patch of solder on them, on which would be stamped the type of the dust the tiles were made from, together with the month and the year and the press they were made on. As they did not employ a labourer I had to sweep the workshop floor, tidy the benches, wash dirty, oily blitch* - covered machine parts in paraffin so that they were clean and could be worked on. This was because, although the main work in the fitting shop was the making and repairing of press tools for producing tiles, we also did maintenance of all the works' plant.

The source of power for the works was steam. This was supplied by two Lancashire boilers, which were stoked by Thomas Poole, who lived at Barnett's Leasowe, Jackfield, and Frank Palmer who lived at The Lloyds, Coalport. They did alternate fortnightly day and night shifts. The boilers supplied steam to stillages for drying the clay cake, which had been made in the slip houses. When dry, the cake, as it was called, was put into bins; these were really brick cubicles where it was stored until required. Then it

(*A local name for black, oily dirt)

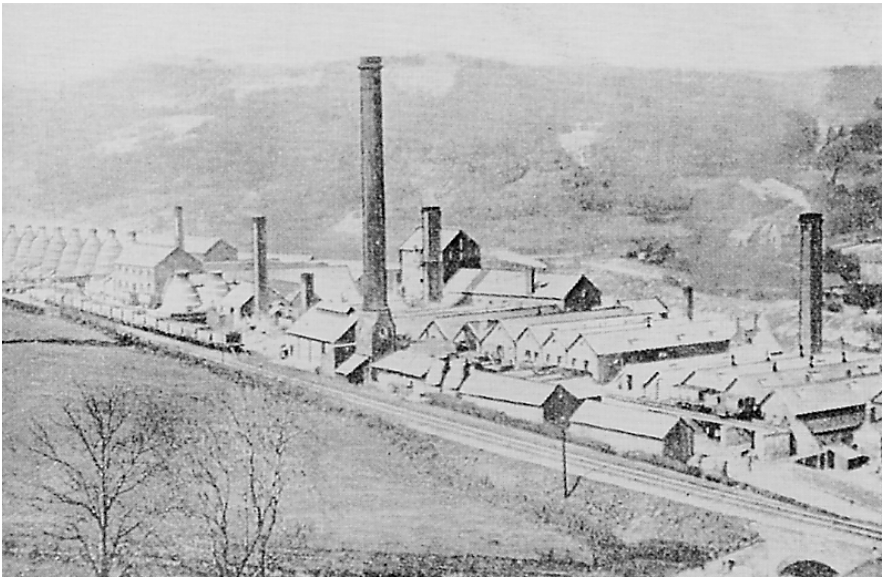
was taken in trams to the mill, where it was ground into a consistency like flour, ready for pressing into tiles. When made, the tiles were taken into the steam-heated drying stoves, before being put into the biscuit kiln for the initial firing.

Driving power was provided by six steam engines of varying sizes; the main engine was near the boiler house and had a 12ft diameter flywheel. This engine was the pride of Mr Durnell, the driver, who kept it spotless an the brass and copper gleaming bright. It drove two blunge pots and slip pumps for the white sliphouse, also two blunge pots and slip pumps for the dark sliphouse. It also drove a dynamo, which supplied electric light at 220v DC for the workshops. Nearby was a smaller engine driving a smaller dynamo, for the lower demand for electricity at night. This was situated in an underground room between the railway siding and the boile house. Also in this room was a vacuum pump to suck the condensed steam for a boiler feed pump to return into the boilers.

The mill engine was also a large one, driving a hoist, which lifted the trams of cake to the top floor, where the cake was shovelled into the mill hopper The mill, also driven by the engine, reduced the cake to dust. The engine supplied power to the press shop by line shafts to drive several power presses and semi-power presses, plus an extractor fan which was suppose to take dust from the press shop air. Unfortunately, it was very inefficient and a number of workers eventually died from the effects o breathing in the dust.

This engine also drove two other presses in another workshop. One was a saggar press and the other a mosaic press which, at one pressing, made a large number of small tiles that were cut into smaller pieces to make mosaic patterns. Will Jones, who lived at Broseley Wood, operated the saggar press. The mosaic press was only occasionally used. One other large engine was called the brickiln (pronounced brickel) engine; this powered the machinery for making all sorts of firebricks.

All the engines I have mentioned so far were horizontal engines; the two will now tell you about were small vertical engines. One was situated in the blacksmith's shop, which was directly below the fitting shop. This engine was driving a Rootes Blower for the smith's hearth, a power saw and a water pump. The water pump pumped water from the river up into a brick built storage tank, located in the field above the works near to The Tuckies House. This water was used for everything, except drinking. Also, a belt from this engine went up into the fitting shop to drive all the machines therein. These comprised of three shaping machines, a lathe, a drilling machine, a screwing machine and a grindstone made from yellow



Maw's Tile Works in the 1920s. The engine and boilers would have been located by the tall chimney in the centre of the picture

sandstone. All this machinery was very old and all driven by flat belts from idle shafts and counter shafts. The second engine was used in the tile cutting department, to drive two grinding wheels, which ground smooth the cut edge of the tiles.

Coming back to the dynamo, which supplied electric light and some power during the daytime. The demand on it gradually increased until it had to be replaced by a larger one; this was considerably heavier, weighing about two and a half tons. To get it into the engine room it had to be lowered down between the railway lines of the siding, which were about eight feet or so above the engine room floor. We had a crane, which ran on the railway lines, but the S.W.L was only one and a half tons, so tackle was made to clamp the crane firmly to the rails and two strong wooden props, to support the wooden jib, were put into place. We then lowered the dynamo down onto a pile of wooden planks, which were piled to the engine room floor level. Then, the dynamo was moved on rollers into the building, through a hole the bricklayers had made in the wall.

A concrete bed had been prepared to mount the dynamo on and also a pedestal to mount the bearing on. The latter would support a stub shaft, which was coupled to the dynamo shaft. On the stub shaft was mounted

a pulley to take a 14in wide Balata flat belt. As the flywheel was not wide enough for this belt, an outside firm had to make a wider outer rim to fit around the flywheel. When all was ready, Will Roberts and myself fitted the belt. The stub shaft and half coupling had been turned and fitted by Jack Price, the Managing Director's son.

The first day the dynamo was running, the support bearing, which had a white metal lining, started to heat up and there was a fear that it would seize. So, yours truly had to go with a bucket of cold water and slop it on with a rag; this kept it running all day. Luckily, once it was run in, it gave no further trouble. However, with the coming "on stream" of the Ironbridge Power Station in 1932, Maw's soon turned over to mains electricity. That was the end of the era of steam engines there and, very soon, they all went into the scrapyard.

My later work at Maw's was mainly toolmaking, making dies for the tile presses, and maintenance generally. We ought to have been classed as a toolroom, but we weren't because it would have meant paying us more. The process was to put the clay dust between dies and press it to make a tile. Men would carry stacks of tiles, called "bungs", on a plank to the drying oven. Women called "harrisers" would use a piece of carborundum paper wrapped around a piece of wood to take the sharpness off the edges of the tiles. Next they would go into a steam-heated stove, and then into the firing kilns. There were six kilns. My grandfather worked on the kilns, and father was the works blacksmith - three generations of us at Maw's.

Jack Williams was foreman in the white press shop, making the white tiles from clay from Cornwall. The dust was always dangerous, getting on the lungs, and there were deaths from silicosis. For making ordinary brown floor tiles we used the dark clay from the bank behind the works. One day one of our lads dived into the bushes by the clay bank and came out holding a snake by its tail - lashing around trying to get at him! Further up there was a pit from which water used to flow, very salty, and there was a house along there called The Salthouse.

Father was the blacksmith and general fitter. He constructed a system so that the bungs of tiles could go on a trolley that ran by the offices to the sliproom. The kilns were generally coke-fired. Maw's had their own gas plant, producing gas and coke for the kilns. I haven't mentioned that we also had presses to squeeze out the water from the clay to prepare it for use. The clay mill was fed with the raw clay from the clay bank. Dad used to make the hardened beaters that would break down the clay. We had underground blunge pots in which beaters went round to produce slip.

When it was necessary to put a machine right, as happened when a new machine was delivered with the wrong direction of rotation so that we had to dismantle and rebuild it, we had to work to one o'clock in the morning. Then I had to walk back up the hill to Benthall.

My Future Wife

A young woman, Ethel Owen (no relation to me), started work at Maw's about 1932-33. She was employed in the White Press shop as a 'harrisser' for Fred Doricott, who worked a hand-operated fly press. Occasionally the press operator would send the girl to the Fitting Shop to get a small job done, and that is how Ethel and me got to know each other. She always brought the jobs to me and it was her that made all the moves - not me. Apparently, one day when she brought a job to be done, she deliberately dropped her handkerchief, thinking that I would pick it up and take it back to her. I didn't even see it, but another press operator came to my bench, recognised the handkerchief and picked it up and returned it to her. Some time later she told me about it; she said she felt like striking him for upsetting her plan. Much later she told me that, even at the age of 16, I was the one she'd decided to marry.

As I've said previously, the white dust contained flint and the extractor fan was inefficient. The dust in the atmosphere was harmful, so I persuaded Ethel to try for another job, which she did. She got taken on as a wardmaid at the Lady Forester Hospital in Broseley. This job she loved. The work was hard, but healthy, and she had her 21 st birthday there on 7th March 1937.

Coalbrookdale Institute

During my seventeenth year I had the urge to learn, so I started to have The *Mechanical World & Engineering Record* magazine. I could not understand all that was in it and showed it to Mr Durnell, the driver of the main engine. He told me that I would have to learn algebra; so the old saying, 'If a person doesn't want to learn you can't make them and if they want to learn you can't stop them!', took over.

A good friend, Arthur Bagley, who had been to Coalbrookdale High School, came to my rescue and gave me some of his old school books. I had to start at the beginning again, doing adding, subtracting, multiplying and dividing. I spent all my dinner breaks and spare time at it and progressed until I got to powers and roots. Powers were no problem but square roots were; it was here that Jack Price, who had also been a pupil at Coalbrookdale High School, stepped in. He had learned to extract square roots long hand, and he taught me to do them. Then I had the urge to

The Coalbrookdale Institute where Jack was a student (IGMT)

progress further so, in August 1934, I enrolled to attend evening classes which were held at The Coalbrookdale Institute, to learn engineering drawing, maths, English, applied mechanics, electricity and magnetism. At this time Maw's were very busy and I was working until 7pm, then cycling from Maw's to The Institute, where I was allowed to have a wash. The caretaker, Mr Saunders, would give me a cup of tea, and then it was into the classroom. The Headmaster, Mr William Smith, taught maths, English, also electricity and magnetism. Mr Frank Evans, who was a bridge designer at Horsehay Works, taught engineering drawing. Mr Frank Jefferies taught applied mechanics.

Mr Smith was headmaster of Madeley Wesleyan School and was an exceptionally clever man. He took a great interest in me, because I was keen to learn. I have known him doing a demonstration multiplication sum on the blackboard, as fast as he could write and, partway through it pick up the duster and apologize, saying, "I'm sorry about that, but I'm working it out in my head faster than I can write." He used to say you only needed an average brain to be successful.

One thing I picked him up on raised his opinion of me, I think. One evening I said to him, "Mr Smith, do you sometimes make a deliberate mistake on

the blackboard?"
He looked at me and said, "I might. Why do you ask?"
I replied, "Well, yesterday evening you were doing a multiplication and you put a figure 7 halfway down the sum, which was incorrect, but you didn't erase it. You said to the class, 'That's right, isn't it?' Then you continued to finish the sum."
"Yes," he said. "I did, because they all said it was right when I asked them, didn't they?"
I replied, "Yes."
"Ah," he said, "that's how I find out if they're paying attention!"

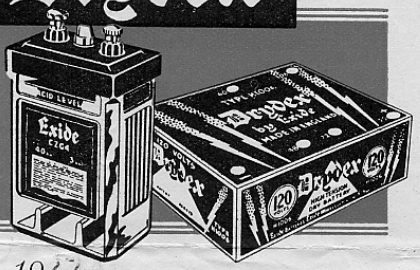
I was interested in all the subjects, but the thing I liked most of all was th maths. That I really enjoyed, and because I was interested in it, the headmaster, Mr Smith, took an interest in me and helped me greatly. One evening, at the Applied Mathematics lesson, Mr Smith came to have a few words with me about the lesson. That evening he didn't seem his usual cheerful self, so I mentioned it. "Yes," he said, "I've been to a meeting today and I've had some very disappointing news. When I was asked to take on the headship here, the Institute was in a bad way. There were only about 30 students attending, so the authority was considering closing it. However, they promised me the headship of the new school at Hilltop if I made a success of things here, but now they have gone back on their promise unless I change to become C of E". He was already the head of the Wesleyan Methodist's school in Madeley, and he had made a great success of the Evening Institute at Coalbrookdale. He was a fantastically clever man who could teach anything. He used to give me extra homework to take home and bring back to him the next day. I was doing four or five subjects, maths including algebra and geometry, but I don't think we did calculus then. Mother was so proud of me and the reports he gave me - I won the headmaster's prize!

Evening Institute classes went on to nine, after which we would go to Billy Norry's chip shop for the chips and for a joke with Billy. One evening he opened a penknife, stuck the blade in the ceiling, and asked us if anyone could make it drop into a bottle. We couldn't do it, so he did it by lifting the bottle up to the knife!

I went to Evening Classes from when I was 17, but Maw's would not give me anything for going there. If I'd stayed at Maw's things might have got better; I was friendly with Ernie Exley, who was main director there, but John William Price, whom we called John Willy, was Managing Director and very careful with the money.

Exide and Drydex

BATTERIES FOR RADIO



Aug 5th 1934

M^r Burnet

Sold by **OWEN BROS.** (Proprietor—A. H. Owen)
Domestic Electrical Installations :: Accessories
FOX LANE
BROSELEY, Shropshire

1 - 1 way switch	2	4½
1 Wood Block		8
2 doz nails		6
2 " clips		4
	4	1½

Paid
H. M. Owen

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