# **GSIA**



## JOURNAL 2004

### **Gloucestershire Society for Industrial Archaeology**

#### Journal for 2004

#### Contents

Editorial2
Delving In Dean: The Delves – An Area of Unrecorded Early Coal Mining (Part Two) By Tony Youles
Samuel Bradshaw of Cam and his South African Mill By Ann and Martin Bailey
The Development of Tin Plating at Lydbrook By Pat Morris
Howard & Powell, Wallbridge Mill, Rodborough, Stroud By Ray Wilson
Coal And Steam - The Arrival of Steam Power in Stroud's Woollen Mills By Stephen Mills
William Eassie - A Notable Victorian Contractor By Hugh Conway-Jones
The Restoration of the Cotswold Canals: October 2005 Update By Theo Stening 59
Summer Visits Reports 2004
Book Reviews
Officers (2003 - 2004)
Committee (2003 - 2004)

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This year's cover illustration shows Wallbridge Mill, Stroud as depicted in a letter heading used by Howard & Powell, the owners from about 1886 to 1961. (See page 31.)

(Original illustration kindly supplied by Mrs Ruth Cook)

#### EDITORIAL

The GSIA Journal like that of many other similar societies records the transactions of the society for the year preceding the nominal year of publication. However, it would be inappropriate not to mention, two very significant events for the Society from the early part of 2005. In effect both happened on the same day, Saturday 9 April 2005, when GISA both hosted the 36th South Wales and South West Regional Industrial Archaeology Conference and launched our new publication *Exploring Gloucestershire's Industrial Heritage*. Both were very well received and reports on both of these will appear in the Journal for 2005.

Members have once again provided articles on a wide range of topics relating to the County's rich industrial past. New members, Ann and Martin Bailey have been investigating the remains of an early woollen cloth mill in South Africa known as Bradshaw Mill. They have provided an account of how it came to be built by settlers from Gloucestershire and its possible origins in the Dursley area. The transition from the use of water power to steam power in the Stroud Valleys was a vital step for the local cloth industry and is the subject chosen this year by Stephen Mills, one of our regular contributors.

The editor has written an account of Wallbridge Mill at Stroud which was almost completely demolished in 1964 although intriguingly the name of the mill was taken north and used by a business at Malham in the Yorkshire Dales until only a couple of years ago. Tony Youles has been leading a most interesting GSIA fieldwork project in the Forest of Dean investigating early coal mining sites in an area known as the Delves near Cinderford. He has provided an account of methods used and results obtained from the survey which follows on from the preliminary account in last year's Journal.

Pat Morris who wrote in last year's Journal about the introduction of the tin-plate industry to the Lower Wye Valley has turned her attention this year to the development of tin plating at Lydbrook. The annual update on progress and current plans for the restoration of the Stroudwater and Thames & Severn Canals has again been provided by Theo Stening. This series provides a valuable contemporary record of the evolving plans for the project which should enable future canal historians to compare them with the actual outcome.

Hugh Conway-Jones has written about William Eassie who built up a remarkable business in Gloucester, pioneering the mass production of wooden buildings in kit form, many of which were shipped to distant countries including hospitals for the Crimean War. The summer visits proved as popular and as interesting as ever and this year's issue concludes with the reports on these events, followed by a selection of book reviews. As ever, we must thank all of this year's contributors for the very interesting articles they have provided. Hugh Conway-Jones and Sylvia Black must be thanked for their invaluable assistance with the production of the Journal.

Ray Wilson September 2005

#### **GSIA VISIT REPORTS FOR 2004**

Once again the Society's thanks are due to Frank Colls who organised a full programme of local visits and two excursions further afield by coach. The following reports have been compiled by Frank Colls with a contribution from Ray Wilson.

#### Sunday 28<sup>th</sup> March 2004 Afternoon Walk, Forest of Dean Tramroads

A good attendance of almost 40 members and guests met at the site of the Northern United colliery for this walk around some tramroad routes and adjacent features, led by GSIA member Tony Youles. Nearby was the site of the Churchway Engine Pit (begun in 1740 and worked till around 1860), hence the 1810 tramroad was known as the Churchway Branch, running west to the Severn and Wye tramroad at Mierystock. We were soon able to gain the line of the Branch tramroad, much of it being on a slight embankment. Following the exact line was not always easy but we saw several stone sleeper blocks and heard about the distinction between tramroads (for horsedrawn wagons with flat edged wheels running on an L-shaped rail) and a tramway (wagons with flanged wheels).

Further on we saw the site of the Strip-and-at-it colliery, worked from 1832 and linked to the Churchway branch to carry its coal out. Strip-and-at-it stopped production in 1861 by which time the Trafalgar colliery, just over the ridge to the south, had been opened, working related coal measures. The two collieries were also linked on the surface by a short tramroad which needed a tunnel under the ridge which was used briefly for coal traffic and later for pit props and materials. The northern tunnel portal is now totally buried but we were able to continue over the ridge and down to the Trafalgar site to find the southern tunnel portal, still in good condition. Trafalgar was a much larger colliery and needed a more substantial outlet for its coal, so the owner Cornelius Brain established a new tramway in around 1862 to run eastwards and link with the Great Western's Forest of Dean Branch at Bilson. We followed the line of Brains Tramway, which used a narrow gauge locomotive, for much of its length before returning to the start. Here we thanked Tony for a most interesting walk before heading for home. Further information on these and other tramroad routes is well documented in Tony's article in the 2002 GSIA Journal.

#### Sunday 25<sup>th</sup> April 2004 Afternoon Walk, Lechlade

Keith Newson of the Lechlade Historical Society had kindly agreed to lead a walk for us and a group of about 25 met near St. Lawrence's Church on a fine afternoon. We began in the town by looking at buildings and wharf sites alongside the Thames which had played a part in Lechlade's early development as an inland port. We saw some of the 17<sup>th</sup> and 18<sup>th</sup> century warehouses and other buildings which have survived and have been converted, mostly quite sympathetically, for residential use. Lechlade had grown since medieval times as a market town and staging point on the packhorse and drove routes between London and the West, and the gradual development of river traffic added to the town's importance. We crossed over the 1792 stone bridge with its toll house which was a key link on the north-south turnpike road. A number of inns grew up to serve all this traffic and some still survive as focal points for the more recent developments in leisure and tourism. That afternoon the whole town was thronged with visitors, many on or in the water and many just enjoying the riverside and the

happy atmosphere. A large group of Harley Davidson enthusiasts added to the noise and bustle!

We escaped the crowds by driving to the second section of the walk at St John's Bridge by the Trout Inn, a short way downstream. Here we heard about St. John's Priory (now totally gone) and the original river crossing, a stone bridge built in 1229. Nearby was St John's lock, the highest on the Thames, built in 1790, and alongside sits the famous statue of Old Father Thames, originally made for the 1851 Great Exhibition. Across the fields we could see the course of the river Leach (hence Lechlade) as it joined the Thames below the lock.

It was then on by car to Buscot, further downstream, for the final section of the walk to see the river lock and some adjacent industrial sites, and the remains of a farm estate with many technical innovations. The lock was built in 1790 as part of the navigation improvements which added to Lechlade's growth but, more importantly, enabled a better connection to the newly opened Thames and Severn Canal upstream at Inglesham. Near the lock was a 19<sup>th</sup> century pumping station (now owned by Thames Water but no longer in use) and this was the site of a factory for turning sugar beet and other agricultural produce from the estate farm into cattle cake, fertiliser and alcohol. This industrial approach to agriculture was developed by Robert Campbell, who also laid out a narrow gauge steam railway to carry produce and supplies around the estate. He also installed a water wheel for pumping water up to higher levels on the estate and we saw a small pump house on the wheel site still used for that purpose. Another Campbell innovation was a concrete barn, one of the earliest in the country, which is still in use. Before departing, we thanked Keith for a most interesting afternoon which had revealed some fascinating industrial features in a seemingly rural location.

#### Sunday 9<sup>th</sup> May 2004 Coach Trip to New Mills, Bugsworth and Macclesfield

Our first coach trip was rather low in numbers but it had a high level of interest and variety. The final stage of our journey was enhanced by a commentary from Alan Bailey about a part of Cheshire where he had once lived. We glimpsed the famous radio telescope at Jodrell Bank and heard about some of the area's former industries, ranging from mining to aircraft manufacture.

At New Mills we met our two local guides, Derek Brumhead and John Humphreys for the tour around the Torrs Trail. The deep gorge where the river Sett meets the river Goyt was a good location for water powered industry to develop in the late 18<sup>th</sup> century. Access to the river was down steep cobbled lanes, a severe challenge for the horse-drawn carts used for supplying building material and later for taking out manufactured goods. The site of Torr Mill (first recorded 1794) was seen. This was damaged by fire in 1838, rebuilt into a 5 storey cotton mill with steam power and then destroyed in a major fire in 1912. We saw the line of the water supply leat to the mill which passed over the Sett by an aqueduct. Exactly on the site of this aqueduct was a footbridge, built in 1984 as a memorial to Dr Millward who was a key figure in opening up the Torrs area for public access in the 1970s following years of decline and neglect. We saw the remains of the mill chimney, erected close against the side of the gorge and near to the splendid Union Road Bridge over the Goyt gorge. Built in 1884, this linked the two halves of the town without the need for people to descend into the gorge. Further down-river we saw the site of Rock Mill, used for cotton spinning, calico printing and paper making up to about 1886. Then came the main extant building, Torr Vale Mill, on the site of a 1790 mill, which was rebuilt, expanded and provided with steam power in the mid 19<sup>th</sup> century. This was converted to electrical operation in 1931, though some water power was being derived up to 1940. In use for cotton manufacture until a few years ago, it is now empty and rather vandalised but it has earned listed status and there are hopes that it will be converted for residential and other uses.

We were able to view Torr Vale Mill from the spectacular Millennium walkway which allows people to continue their walk around a sharp bend of the Goyt, previously inaccessible. Opened in 1999 this is an impressive modern steel structure, about 170m long, partly supported on pillars and partly on struts embedded in the stonework of the adjacent railway embankment. From the gorge we returned to the Heritage Centre and saw a very instructive model of the area as it would have been in the 1880s. Thanking our guides for a fascinating tour, we set off for Bugsworth.

This interchange basin was a vital link in bringing limestone from the quarries of Dove Holes to feed the growing industries of north west England. The tramway brought stone to Bugsworth where a number of kilns were used to make lime. Lime and limestone were loaded onto barges for taking north along the Peak Forest Canal to Dukinfield. The whole route was opened in 1800 and the interchange site grew into a busy complex of three main basins, tramway sidings, wagon tipplers, lime kilns, warehouses, stables and workshops. Tramway and canal traffic declined and the basin closed around 1922. In 1968 the Inland Waterways Protection Society began their efforts to save and restore the section of canal, the basins and many of the associated structures. Much has been done by both voluntary and contractor efforts but much also remains. We thanked Ian Edgar of the IWPS for his guided tour before leaving for Macclesfield.

The Silk Industry Museum and the nearby Paradise Mill gave us an excellent chance to hear about the once thriving silk industry in the town. At Paradise Mill we had the chance to see working equipment covering many of the processes involved in the manufacture of silk cloth. Our two guides demonstrated a number of the stages from taking the skeins of silk thread onto bobbins and pirns, setting up the Jacquard looms and then weaving the final cloth. We saw how paper designs were painstakingly converted onto special charts (like graph paper) which were used to make up a sequence of punched cards which, when laced together, formed the "instruction programme" for use on the looms. We heard about the way silk threads were made, mainly in China, and then dyed for use on the looms. The fineness of the threads means that many thousands of warp threads have to be carefully and patiently assembled onto the loom harness. We then looked around the Silk Industry Museum, a comprehensive and informative collection of equipment, fabrics and displays, before heading home.

#### Wednesday 9<sup>th</sup> June 2004 Evening Visit, Dodwell Hill Underground Quarry

This visit was only possible through the courtesy of GSIA member Arthur Price who, with his long experience of caving, research and underground exploration, was able to arrange access to the site. Numbers were limited and Arthur and his colleague, Ashley Dickinson, guided two small groups into the underground system. Before going in, Arthur gave us a brief account of the geology of the area and the history of the quarrying period. The oolitic limestone is part of the same formation as the rocks of Cleeve Hill to the north, where it was worked by open quarrying, but here at Dodwell Hill is below the surface and required a different method. However, he pointed out that "underground quarry" rather than "stone mine" was the locally accepted term. These were worked in the early 19<sup>th</sup> century by the

Denley family and others and supplied much building stone for Cheltenham's fine houses. Quarrying finished in 1864 when Bath stone had become cheaper, despite the added transport costs.

The quarry has 14 entrance points (well gated and locked of course) with some interconnections between the different workings. Arriving at a little inlet in the hillside we descended a few modern concrete steps into the darkness. We were led through tunnels and passageways and were grateful that our guides were very much familiar with the layout with its many junctions, chambers and cul-de-sacs. There are over two miles of roadways underground and we were to see only a small and easily travelled section. All the working had been with hand tools and it was explained how tool markings on the rock surface could be interpreted to determine the sequence of working. The quarries had been subjected to much exploration over recent years and many items and artefacts found.

Names of former quarrymen had been marked on to some surfaces, often by candle soot, and these provided a rich source of research information. Although the rock formations were reassuringly stable, there were points where falls had occurred and we had to clamber over these to make progress. We were glad to have good torches with us and a short spell when we switched these off and stood in the total darkness reminded everyone of the tremendous difficulties which the early quarrymen had to face. It was soon time to retrace our steps (not easy as we found out when Arthur invited one of us to lead the way!) and we were soon back in the open air. We thanked our guides for a most fascinating couple of hours before heading homewards.

#### Wednesday 30<sup>th</sup> June 2004 Evening Social Walk, Tetbury

Geoff Haines of The History of Tetbury Society had kindly agreed to lead this walk and about 20 of us met on a fine evening at the Chipping car park, the name meaning a market. We had an engrossing tour which covered a large amount of general and social history as well as highlighting the industrial features. Tetbury was a wool town but the lack of water power meant that it couldn't develop this trade, perhaps to its eventual benefit. An abundance of fine buildings, some from the 16<sup>th</sup> century, could fill any report and this account can only mention a few of the places seen and the stories related. An 18<sup>th</sup> century malthouse was doubly interesting as the place where a model had been built to prepare for the Omaha Beach landings in the invasion of Normandy in 1944. We saw the site of Horsepool Bottom which became a cattle market in 1890 when the railway branch from Kemble arrived in 1889. The practice of punishing miscreants in the original horse pool by ducking stool, known as a gumstool, is reflected in Gumstool Hill which was once part of the main Bristol to Cirencester Road. The railway closed in 1964 and only the goods shed survives but the surrounding area and the track line are being retained for recreational use. Trees from China on their way to Westonbirt formed an unusual railborne cargo. We followed the rail line before turning onto the bridge over the Little Avon, once the Gloucestershire county boundary (hence the Station was previously in Wiltshire) before it was moved eastwards to the Fosse Way.

St Michael's Church with its soaring spire was seen as we made our way down to an old packhorse bridge over another Avon tributary. Above this was the 1775 turnpike road and Bath Bridge, heavily engineered to form an easier gradient rather than just cross the stream. A toll house was pointed out as was an area which had been the site of an iron age hill fort. We passed the site of Warn's Brewery before seeing the 1665 Market House standing on stone

pillars and surmounted by a fine cupola. This was the wool market and is still the focal point of the town.

We then went up Long Street, dominated, as is much of modern Tetbury, by antique shops but previously home to a variety of trades and activities indicative of Tetbury's long history. At the far end we could see the buildings of Cook's Brewery (c.1800), now converted for residential use, and across the road was the site of the 1836 gasworks. A short walk took us back to the town centre where we thanked Geoff for all his time and effort in putting together a very comprehensive walk. Many of us then enjoyed a pint or two at The Snooty Fox, a 16<sup>th</sup> century inn, the White Hart, its name being changed in the 1950s when the new owner was apparently snubbed by the local hunt!

#### Sunday 18<sup>th</sup> July 2004 Afternoon Walk, Blockley

We were grateful to Jeremy Bourne of the Blockley Antiquarian Society for leading this walk and about 20 of us met by the church. We began by going to the village hall (formerly a chapel) for a short talk on Blockley's history and the age of silk throwing which was the village's main industrial activity. The settlement grew up in Anglo-Saxon times and by the time of the Domesday survey there were 12 simple stream mills using the power of the Blockley Brook for corn grinding. With an abundant supply of water, corn grinding continued as well as fulling work for the wool trade. In the late 17<sup>th</sup> century the use of water power for silk throwing started to develop and this soon became the dominant activity, lasting till around 1870. Silk throwing, or throwsting, was the stage in which skeins of silk (originating in China) were transferred to spindles for use on weaving looms, these being at Coventry for Blockley's output.

After the talk we began our tour of the village by going up to the highest mill site and then working our way down. A prominent building was the Woolstaplers Hall and we saw one property which had formerly served as a beer and cider house. Most of the remaining mill buildings have now been adapted for residential use and at one site the water wheel had been used to drive an electricity generator, from 1884. The Old Mill of 1657 had always been a flour mill and at Milldene, after the demise of the silk trade, the mill had been a piano factory and then a foundry. At Malvern Mill, this being Jeremy's house, we had the chance for a closer look at the building, thought to date from c1617. We were shown into the cellar area where the structural layout and a cast iron pillar indicated the presence of a wheel pit and drive shafts. There is also evidence that, at a time before the wheel pit was constructed, a stream wheel had been in use. At that time a bypass culvert had been constructed and much of this still remains. We saw this in the garden, which also has several mill stones built into the paths, although it is not certain which if any date back to the early corn grinding period. The layout of the mill pond and leat could also be discerned. A full account of Malvern Mill, and much useful background, appears in Jeremy's article in the 2003 GSIA Journal.

Continuing our perambulation, we heard about the need for the village to expand to cater for the many workers needed to tend the silk frames, even though the mills were fairly modest in scale. More housing was obviously required and the church capacity was increased by installing a sloping gallery (removed in 1923). The influx of silk workers from Coventry led to a Baptist Chapel being built in 1792, this being where we had started our visit. We finished up at Blockley Court Mill, a much larger building more like a factory, previously known as Gaunt's Mill built in 1760, which added to the village's silk throwing capacity. Production

here was at its peak in 1825, the mill turned to ramie spinning when the silk trade declined in 1870 and the building is now in residential use. Before heading for home, there was time to express our gratitude to Jeremy for a fascinating walk and to thank him especially for letting us see the hidden parts of Malvern Mill.

#### Sunday 15<sup>th</sup> August 2004 Afternoon Walk, Stonehouse and Nailsworth Railway, Part 4

About 30 members and guests came for this final tour of the railway branch and adjacent features led by Ray Wilson. A car shuttle was efficiently organised for the linear walk which began at Ebley Mill, now the council offices, which we had seen on the Part 3 walk in 2003. Following the Stroudwater canal for a short stretch, we looked at Ebley Oil Mill, now renamed the Snow Mill as it is now the home of Snow Business the world leader in the supply of artificial snow for film and television sets. We then set off across the field to reach the line of the railway. It was pointed out that our route on the slight embankment actually marked the short branch line which had served the mill.

The first few hundred metres of the former trackbed we walked along has been made into a linear community orchard by planting many different types of Gloucestershire plum and apple trees in the borders. Part of a bridge over the river Frome still stands as a reminder of the railway period. We reached the site of Ryeford station, now totally gone, and then left the railway line to pay a visit to Stanley Mill, just to the south. Although we were told we would see the outside of this, Ray had a surprise for us in that he had arranged with the current owner (who runs an industrial carpet manufacturing business in part of the building) for us to see parts of the interior. The mill was rebuilt in 1813 mainly in brick with cast iron columns supporting the floors. This form of construction avoided the use of timber for the most part and is often referred to as a 'fireproof' mill. It is the only Grade I listed mill in the Stroud area. We were able to see some of the old equipment still in situ, including carding machines and spinning mules, as well as admire the cast iron support columns and other structures. On leaving the mill we crossed to road to see the large mill pond that once served the five waterwheels which powered the mill.

We then returned to the line of the railway but here it is now largely obliterated by the main road and so we cut north to join the canal at Ryeford. Of particular interest here is the coal pen which was the subject of an article in the 2002 GSIA Journal. A pair of openings in the perimeter wall of the coal pen alongside the towpath were noted as these were used when coal was being unloaded from a barge tied up alongside. Each opening could accommodate one end of a stout wooden plank with the other end of the plank placed on the side of the barge. Coal could then be conveniently moved in a wheelbarrow across the 'bridge' formed by the plank.

We followed the towpath but canal and railway soon come together again with the bridge which took the line over the canal at a very oblique angle. When built this had a timber section on land on the west bank followed by a steel span of single track width. Shortly before closure in 1966 the timber section was set alight and badly damaged which accounts for its replacement by the present concrete structure.

Continuing along the canal we crossed Nutshell Bridge to head northwards to look at the preserved bridge that took the old A419 road over the railway. From here we picked up the line again until our route took us through a modern housing development. We emerged frrom

this at the site of the branch passenger station just before it joined the Gloucester to Bristol main line. We found no trace of any of the buildings or indeed of the platform and so we followed the line of the long demolished corrugated iron walkway which linked the branch station to the former Stonehouse Bristol Road station on the main line. Only the former station master's house remains and it is now used as a training centre. We followed a narrow path northwards to a footbridge over the main line from which we could see the route of the Branch coming in from the south east. It was then a short walk to the centre of Stonehouse where we had left the cars. On the way we passed the Stonehouse Milleneum Stone which depicts the cloth and brickmaking industries. On arrival at the car park we thanked Ray for an interesting afternoon before returning by car to Ebley. The overall walk from Nailsworth to the junction had involved 4 separate stages and we had seen a great deal both on and off the route. We must thank Ray for his customary attention to detail and all his efforts to provide us with a fascinating and enjoyable set of walks.

#### Wednesday 8<sup>th</sup> September 2004 Evening Visit, Lower Balls Green Underground Quarry

Following on from our visit in June to the Dodwell Hill Quarries near Cheltenham, we were very fortunate again to have Arthur Price assisted by Ashley Dickenson as our guides for our second underground visit of the year. A party of 12 GSIA Members met at Lower Balls Green Quarry, situated just above Longfords Mill, in the parish of Minchinhampton. We split into two parties and spent two hours learning how the stone was won under extremely difficult conditions.

The extensive workings started about 1800 and cover about 10 acres underground. The main 'roads' through the quarry total about one mile in length. The quarry was last operated for building stone in about 1905 by Charles Essex. However, in about 1938 large quantities of stone were extracted by a Mr Brown of the Nailsworth Stone Company and taken up to Ashton Down airfield which was being enlarged at that time. We could see some of the track that was laid to get the stone out at that time and even one or two of the old wagons. At its furthest extent we found a large quantity of stone blocks of various sizes which had been long since abandoned. Near here and somewhat older than the wagons is an old winch that survives in a loading hole off one of the roads. Our guides explained to us the various techniques the quarrymen used to extract the stone from the rockface.

The whole area has been surveyed by Arthur and his colleagues over a period of many years This has lead to a detailed plan of the quarries being drawn up. Fortunately neither Arthur nor Ashley needed a map to get us safely back out and again we failed miserably when at one stage Arthur invited us to find our own way out. Finally we adjourned to The Weighbridge Inn were we could thank our guides for another very interesting evening and could continue to learn more about the fascinating history of the quarry.

Ray Wilson

#### Sunday 26<sup>th</sup> September 2004 Coach Trip to Witney and Whites Bellhangers

Our autumn coach trip attracted over 40 members and guests and, as we approached Witney, we could see one or two mill sites in the valley of the River Windrush which provided the water power on which blanket making and the town's prosperity was based. We also passed

the site of the aerodrome with its two 2<sup>nd</sup> world war Bellman hangers, and the base for De Havilland aircraft manufacturing which helped to realign Witney's economy from textiles into engineering. We met Stanley Jenkins who was our guide around parts of the town to see some of the remaining mill sites and other buildings and hear about aspects of Witney's history. We walked along to the site and remaining buildings of Witney Mill (from c1820), run by the Charles Early company, and heard about the original water powered activity, the growth of the mill, the arrival of steam power, the 1905 fire, and the newer buildings, many now derelict. We went on to Bridge Street Mill, closed in 1972, but with much of the original building still standing and in commercial use.

It was then on to the Wood Green area where many of the mill owners lived and we saw some attractive houses, as well as buildings which had been used for hand loom weaving, and an 1860 tannery supplying the glove trade. A Quaker meeting house was pointed out and we heard about the importance of non conformism to the lives of many of the mill owners and weavers of the Witney area, with the Early family being keen Methodists. It was then back to the town centre, passing a fine baroque building, the Blanket Hall, built in 1721 as the home of the weavers' guild. We finished at the Witney Museum, formerly a builder's premises and now full of many excellent artefacts and displays covering the history of Witney and the surrounding area. While blanket making was a main feature, there was much to interest us about the railway branch (and its role in transporting bales of blankets to the wider market), the many other local trades and activities, and the social life of the town. Before leaving for our lunch break, we thanked Stanley for an interesting tour and for opening up the Museum for our visit.

We then drove southwards, to the point where the Windrush joins the Thames, and over this towards a village near Abingdon to visit Whites of Appleton Ltd, Church Bellhangers. Trading continuously since its founding in 1824, the company undertakes work on installing and refurbishing church bell fittings. Brian and Diana White welcomed us to their small factory which was set up in 1985 with modern machinery. We were shown all aspects of the work and several current projects. Each job is different and new or refurbished frames are made up, mainly in steel, to suit individual bell towers and bell layouts. Mr White explained the various items, bell headstocks, wheels, and ringing fittings and showed us examples of how these were made and fitted in the works before being taken to the site for installation. It was clear that much skilled joinery and engineering expertise were involved. They don't do any founding or bell tuning themselves but they do have a computer system which enables the sound qualities of the bells they handle to be recorded and analysed. This was a fascinating place to visit and before leaving for home we thanked Mr and Mrs White for letting us see some aspects of the art and craft, and science and engineering of bell hanging.

#### Sunday 10<sup>th</sup> October 2004 Afternoon Visit, Flourmill Railway Repair Works.

Almost 40 members came on this visit to the Flourmill Colliery site near Bream which is home to a railway locomotive repair business run by Bill Parker. Their workshop is housed within the main colliery building still standing amid a large site covered with various steam locomotives, components and equipment. Before showing us around, Mr Parker told us briefly about the colliery, opened in 1869 and worked till 1928 though it was used for ventilation after this for the interconnected Princess Royal colliery. Underground, water was a severe problem and electrical pumping was introduced from 1908 powered from two Belliss and Morcom triple expansion steam engines installed in a power house on the site. This building survived the closure and had periods of other industrial use before being purchased in 1995 by Mr Parker for his railway repair works (originally based at Swindon). Alterations to make it suitable as a workshop needed listed building consent, and general renovation and painting have preserved a fine building with a practical function. The hand operated overhead crane is still there but a new electrically operated crane running on the same overhead track, recently acquired from an older works, is a welcome and necessary addition.

We saw various repair projects on mainly standard gauge engines, with some narrow gauge, all related to railway preservation societies and others who find the Flourmill Works offers competitive prices and provides a good quality of engineering expertise. Mr Parker, clearly a long-time railway enthusiast, was quite open about running the business as a hobby. He spoke about various past and current repair jobs and the many technical challenges which they have to overcome. The large and heavy nature of the items being handled was impressively obvious with boilers, fireboxes, frames, wheels, cylinders and other items spread around. While the work is at the heavy end of the scale, much requires very precise machining and fitting. The main current job is on Raveningham Hall number 6960. This had arrived by low loader and was dismantled using the firm's Ransom and Rapier steam crane which can lift loads up to 45 tons.

After a tour of the workshop and a look at some of the outdoor items, we had the chance to see some features of the Oakwood tramroad, the line of which passes through the site. Built by David Mushet around 1825 to serve his iron and coal workings, the tramroad was still in use when the Flourmill colliery was developed. There are two short tunnels, still in fair condition, which we were guided through and we saw several tramroad blocks. After thanking Mr Parker for a varied and fascinating visit we returned to the workshop area to pick up our cars.