

## **UNDERGROUND QUARRY WORKINGS AT QUARRY WOOD, SHERBORNE PARK, GLOUCESTERSHIRE.**

Arthur J Price.

Two, possibly three underground workings (connected underground) are situated in the south west corner of the open quarry at Quarry Wood, Sherborne Park, Gloucestershire, National Grid Reference SP 16561408, altitude 165 m. They were surveyed with the permission and help of the National Trust in September 1993. Total surveyed length: 140 m, and vertical range 3.92 m. A copy of this report was sent to the National Trust who are undertaking an archaeological appraisal of the Park.

### **History.**

A full archival search has not been undertaken, however, Arkell (1947) records the use of 'Sherborne Stone' at Windsor, and later Oxford, from 1365. More specifically, Hull (1857) shows an engraving of the open quarry at Quarry Wood. He makes no mention of underground workings, but does at nearby Windrush where the quarry was worked underground before 1840. Arkell states that three galleries could be entered at Quarry Wood in the 1940s and that the quarry had remained in use until 1915 for estate use.

This type of underground quarry came within the scope of various Government Mining and Quarrying Acts from c. 1880, however Sherborne does not appear in these mineral lists. No datable evidence was found underground for primary working, but the above data and more specifically the style of working, deterioration of wooden props, etc, points probably to a date c. 1860 - 1880, unless they were later worked 'illegally'. Subsequent to the survey, members of the Gloucester Speleological Society found clay pipe. This has not been seen by the author.

Local tradition has it that the workings were used for storage by the American Army during World War Two. Modern backfilling of the open quarry from the south has encroached towards the entrances and has already obscured others. (Robinson, 1993 and Ransome, 1994)

## Geology

The geology is: Middle Jurassic, Great Oolite Series; Taynton Stone. Approximately 3 m of white current bedded oolite was quarried with 2.5 m of a more shelly oolite in several beds forming the roof. Above are 1.75m of Hampen Marly Beds, up to ground level. The Marly Beds which had no economic value are bought down into the Park by a syncline, and their presence is the probable reason why the quarry eventually went underground.

## Evidence of Extraction and Tools Used

Quarried stone was very current or false bedded and this restricted block size. Up to seven beds were noted, depending on location, varying in depth from a few centimetres to one metre on bed. One block was noted 1.73m long. Vertical master-joints were initially exploited as lines of weakness, the 'slope' of the false bedding also aided the primary extraction process. Quarried stone was removed from two entrances (Figure 1, entrances marked A and B). Also there was the possibility of a third entrance C, towards which headed two passages backfilled with rubble or farm rubbish. A pillar in B had been 'robbed' before the quarry was abandoned. It is likely that the most recent face in use was in the southern most part of A, note section a-a on Figure 1. An unusual method of ceiling support in this passage was a wooden plank set horizontally under the ceiling.

Tooling marks revealed that picks with square cutting ends, approximately 2 - 2.5 cm (1 inch) wide were used for underpicking the ceiling and making vertical slots. Scabbling axes (square ended 8cm (3¼ in) wide) were used for widening vertical cuts during primary extraction. Horizontal and vertical wedge pits were in evidence and an iron plate 'scale' (A2) was found. Two 'scales' would have been inserted into a wedge pit, thus helping prevent the edges of the pit shattering when a wedge was driven in between. Bars and sledge hammers must also have been used but have left no visible marks. Evidence for secondary working included tooling marks of scabbling axes, chisels and saws on worked stone. Some reject paving slabs had been built into a pillar in quarry B and the resulting alcove behind may have formed a convenient tool store.

An analysis of the ratio of waste to finished article was not carried out, but it was obvious that much debris had been

dumped outside. Dry stone walls, retaining piles of waste, were noted in two abandoned side headings in quarry A.

### Artifacts

A squared stone (A1) with a chisel cut square hole in the top, surrounded by slight traces of burning is interpreted as a candle holder. Even if used, quarry trucks or carts had left no evidence such as scrape marks on the walls or ruts in the floor. The iron wheel rim (A3) may have come from a cart or more likely a wheelbarrow. The three artifacts mentioned above came from Quarry A and illustrated in figure 2.

### Graffiti

The only graffiti recorded came from the back of Quarry B.

JB  
1948



GR

### References

Arkell, W.J., 1947, Oxford Stone, Faber and Faber.

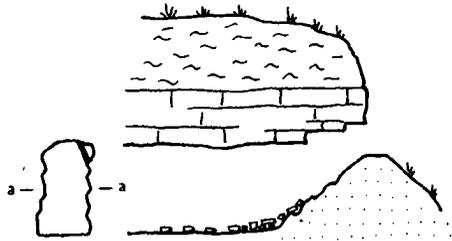
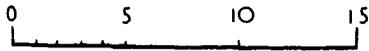
Hull, E., 1857, The Geology of the Country around Cheltenham, Memoir of the Geological Survey of Great Britain, HMSO.

Ransome, R., 1994. He mentions that an excavation in the south face was once visible. It was not so extensive as those remaining.

Robinson, M., 1993, As told to the author.

# QUARRY WOOD FREESTONE WORKINGS. SHERBORNE PARK. GLOS.

BCRA GRADE 5B. SURVEYED BY A.PRICE AND M.ROBINSON. SEPT. 1993.  
COMPUTED AND DRAWN BY A.PRICE.  
LENGTH 140M. VERTICAL RANGE 3.92 M.



SECTION AT B

### GEOLOGY

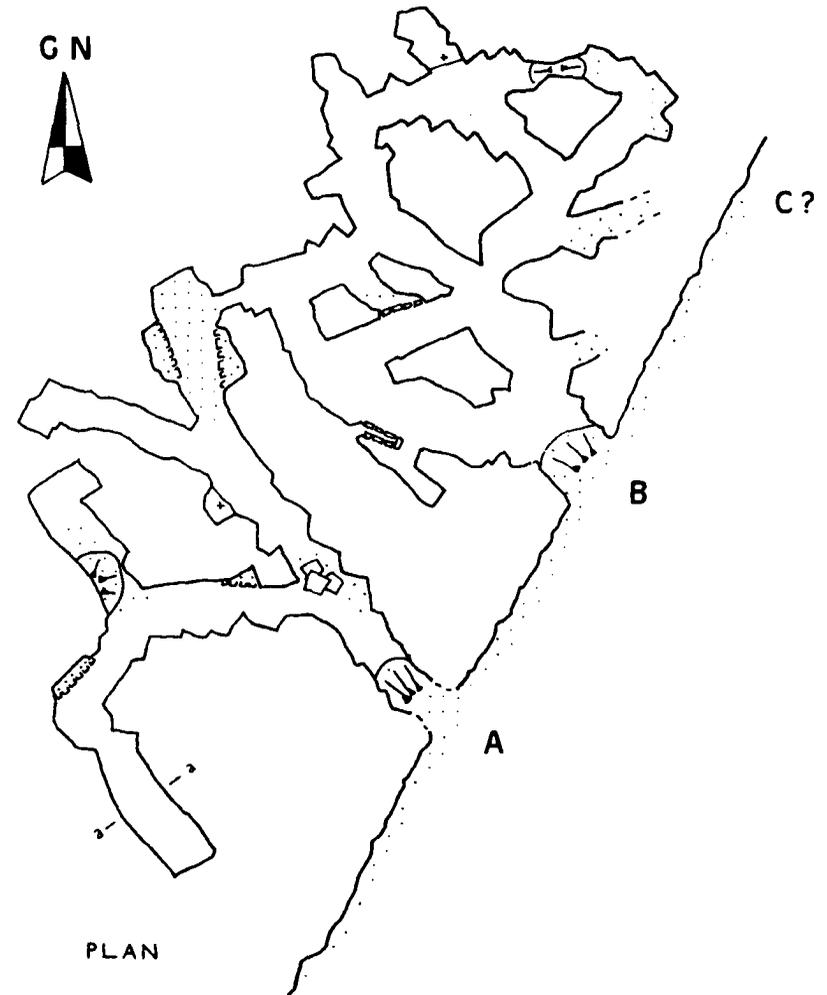
HAMPEN MARLY BEDS

TAYNTON STONE

GREAT OOLITE SERIES



MAIN JOINT DIRECTIONS

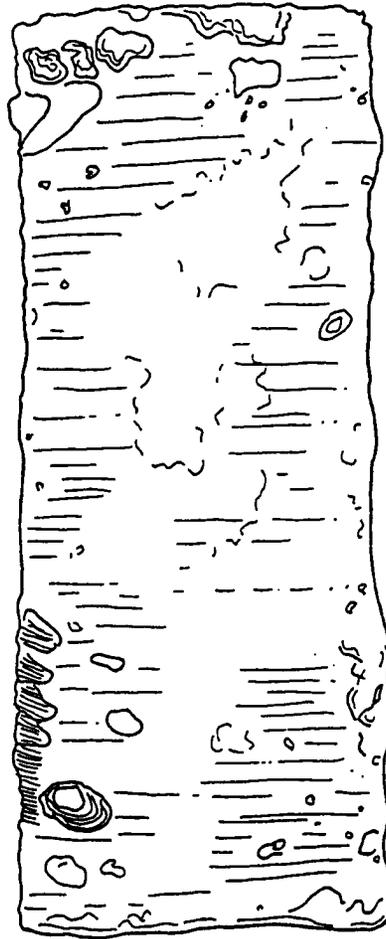
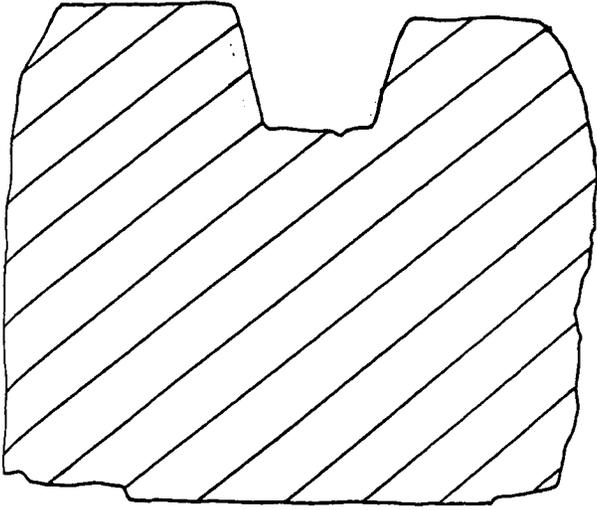


PLAN

UP TO SEVEN BEDS QUARRIED. CURRENT OR FALSE BEDDED.  
BLOCK SIZE UP TO APPROX-  $1\frac{1}{4}$  TONNES.

ARTIFACTS FROM QUARRY A.  
QUARRY WOOD, SHERBORNE.

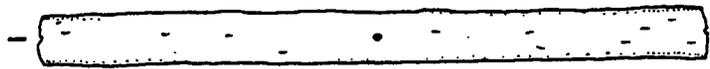
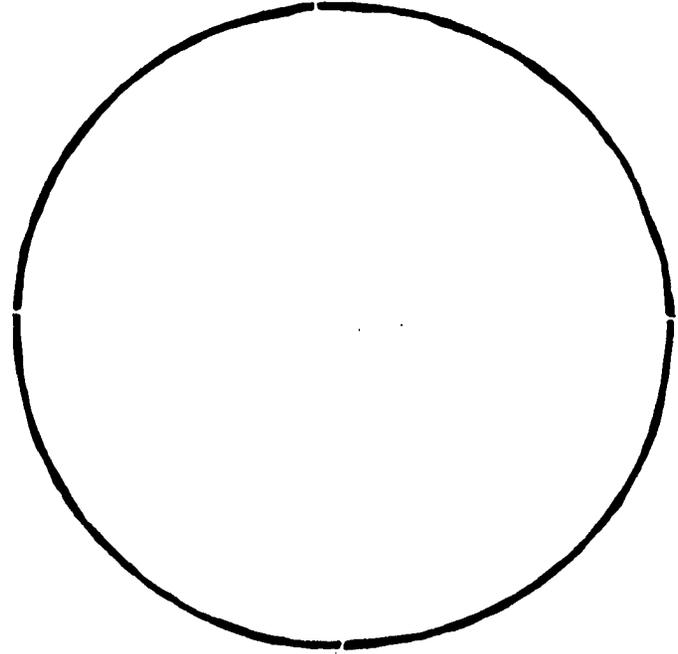
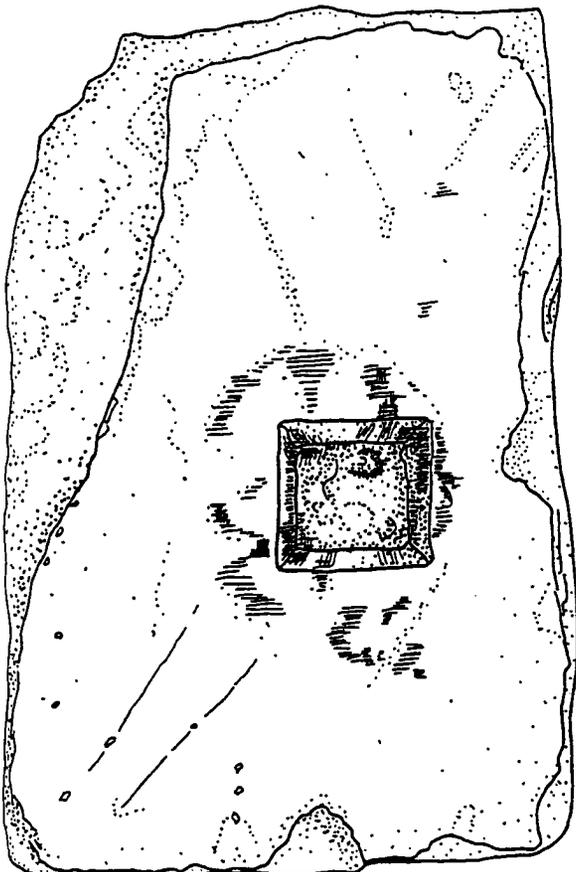
A1.½



A2.½



A3.½



## SUMMER VISITS 1994

Jim Simmons and Ray Wilson organised a full programme of visits and they have provided the following reports.

### CHELTHENHAM'S ORNAMENTAL IRONWORK

Sunday 20 March 1994

Amina Chatwin is the acknowledged expert on the ornamental ironwork on the buildings of Cheltenham and has led GSIA parties around the town in the past. Yet again, there was an excellent turnout of over 30 members and friends and we all saw some things that were new to us.

We were shown how to distinguish the earliest wrought iron patterns of c1800 - 1820 such as "heart and honeysuckle" from the later and much more solid cast iron patterns of the 1840s. Between these two periods was a time of tremendous expansion of the town. This included a number of terraces some with full length balconies. Some of these were wrought iron and there was also a gradual introduction of cast iron. Examples of all types could be seen particularly well at Oxford Terrace.

One member of the party lived in the town and explained how he had recently been able to obtain replacements for garden railings for his home.

The elegant Onion and Dragon lamp posts in Trafalgar Street were much admired and we saw interesting relics of early gas lighting mounted on large stone pillars outside Paragon Buildings Bath Road. Finally we saw one of the original Penfold octagonal pillar boxes. Copies of these are now

appearing as tourist attractions notably at the Waterways Museum at Gloucester and outside Berkeley Castle.

Miss Chatwin was thanked for a most enjoyable afternoon.

### SAPPERTON TUNNEL BOAT TRIP

10 April

Our initial booking of two boat trips had to be increased two and half fold to accommodate the massive interest in this visit. In fact there were still some people who were turned away. The boat trips are restricted to the winter and early spring months because of the likelihood of no water in the tunnel later on. Fortunately we chose an April day when there was plenty of water but the sun shone brightly overhead. Members waiting for their turn enjoyed a walk along the towpath or the hospitality of the Tunnel House Inn!

The tunnel was constructed in the 1780s and was one of the great engineering feats of the age. Many problems were encountered due to the complex nature of the geology ranging from sound rock to fullers earth. The last recorded through passage was 1911. However a series of rock falls has made it impassable. One of the falls is relatively close to the Daneway portal but it is possible to enter from the Coates end for nearly a mile. We went about 1000 yards in a punt with a battery powered outboard motor, holding ten passengers and two crew. The batteries also provided good lighting and we could examine the bare rock sections with considerable overcut in some places and brick lined sections in bad ground. We were impressed by the length of the stalactites that had grown over two hundred years. We passed under one of the construction shafts from which water rained down on the party. The very clear water enabled us to see where spring water was surging up through large holes in the bottom. Later in the year these same holes act as sinks where the water disappears. Problems with such holes led to many operational difficulties at the summit level when the canal was working.

At the end of the fifth trip we were pleased to present the hard working crew from the Cotswold Canals Trust with a cheque for £100. Anyone wishing to make this fascinating trip should contact the Trust who run public trips at intervals during the winter.

## VISIT TO CARDIFF AND NEIGHBOURHOOD

Saturday 7 May

For our first coach trip of the year we crossed the Severn Bridge with a party of 45 and after a little tricky navigation around new road works we arrived at the Cardiff Maritime and Industrial Museum. This excellent museum located on the old dock at the end of Bute Street, houses a good collection representing the many aspects of the area's industrial and maritime past. We had chosen a 'steam day' so a number of interesting engines were operating, but perhaps the highlight of these was the replica of the Pen-y-Darren locomotive. (Fifteen years earlier Ray Bowen had shown us the replica in the workshops nearing completion.) Regrettably the area used for its track may be swallowed up in possible redevelopment at the dock.

Our visit was curtailed at lunch time by a complete power failure to the district. Undaunted we explored the nearby waterfront. Many visited the large model showing the Cardiff Barrage which is to be built and all the other developments. The Norwegian seaman's church has been re-located and restored and was well worth a visit.

After lunch we were joined by our friend Robin Williams of the Oxford House IA Society who was our guide for the rest of the day. Our first stop was only two blocks away and we took a perambulation round Mount Stuart Square to see the imposing and ornate buildings of the former commercial heart of Cardiff.

A short drive took us to the Melingriffith Pump. This returned water from the river Taff to the Glamorganshire Canal. The massive structure including the undershot wheel have been restored in recent years by a team led by Oxford House. Members attending the winter lectures had heard from Robin the many trials and tribulations encountered in the project which was a very fine achievement.

A few miles up the Taff Valley we visited Nant Garw Pottery by the side of the Glamorganshire Canal. The porcelain made here in the early nineteenth century is now highly prized although the enterprise was not a success. A trust is restoring the site and they laid on a very informative slide show and made us very welcome.

Our route took us via Caerphilly to Bassaleg near Newport where a short walk took us to the tramway bridge which is reputedly the oldest railway bridge in the world still carrying standard rail traffic. This marked the close of our tour and we thanked Robin for once again providing us with a memorable afternoon.

## **EVENING WALK TO SEE CHELTENHAM MILL SITES**

Tuesday 24 May

To accompany her article on this subject in the 1993 Journal Miss Amina Chatwin together with Mr Norman Hodgkinson led an urban ramble along the line of the River Chelt. Despite a dull damp evening more than 20 members gathered in Keynsham Road near the fire station and proceeded to the headrace of Sandford Mill.

Here we could see how the water course had been narrowed compared with what was shown on the maps of the last century. The stream in fact is now diverted around the mill which has been converted into an attractive dwelling. The owners of both the mill and the mill house kindly invited us into their gardens so we could inspect the buildings at close quarters.

We walked on through Sandford Park where we looked at the remains of Cheltenham (Barretts) Mill and its weir and water courses. The base of the chimney for an auxiliary steam engine was visible. Following the line of the now culverted river we looked at a possible mill site by Rodney Road and then the site of Upper Alstone mill. Here the only clue to the exact location is given by the fall of water over a weir. On this occasion there was no time to go down to the other main mill site in the area that of Lower Alstone mill. The building survives but has been converted into a Social Club for British Gas employees. The headrace and arch over it can still be clearly seen. We thanked our guides and some of us continued our discussions in a local hostelry.

## **EASTINGTON MILL WALK**

Saturday 11 June

Our chairman Stephen Mills was on home territory when leading a party of about 25 to see the mills in the Eastington area. We met at Pike lock on the Stroudwater Canal. First we saw the range of buildings across the road of Meadow Mill now used as industrial premises. Following the river Frome we had a look at the site of Churchend Mill which has the remains of one of the transfer points on the Kemmett Canal. The path we took across the meadows to Beards Mill had been raised over the years by many tons of boiler ash to form a dry route for workers carrying materials between the two mills when in the same ownership.

We passed under the railway viaduct of the Bristol and Gloucester line and came back up to the Stroudwater at the Ocean. Following the Canal towpath we reached the Bonds Mill complex. There the main interest today was the newly completed

"Worlds First Plastic Bridge" built to enable a section of the canal to be re-opened. The bridge was formally opened on 16 July 1994 when 1000 people attended and GSIA had a very successful display stand. Continuing along the towpath we looked at Upper Nassfield lock and the newly repaired Blunder and Pike locks and we were back at the cars. Here we thanked Stephen for a pleasant and informative afternoon.

## VISIT TO WEYMOUTH AND PORTLAND

Saturday 2 July

Forty four members and friends took part in our midsummer coach trip to south Dorset. Our route via Bristol and the A37 to Dorchester was uneventful until our approach to Weymouth when we were frustrated by severe traffic congestion. Once at Sutton Poyntz Pumping Station and refreshed by coffee laid on by Wessex Water we put this behind us. This attractive Victorian pumping station of Portland Stone now houses Wessex Water's extensive collection of old equipment and exhibits relating to local water supply. On view was an assorted collection of engines, pumps and ancillary equipment. Of particular interest was a very old reaction turbine of the "Barkers Mill" type. One model showed how the funnel of the Brunel's Great Eastern had been reused to re-line a pumping well. The funnel was blown off in the disaster which befell the ship on her maiden voyage.

From here it was only about four miles to Weymouth and the walk up to the Nothe fort and lunch. The fort is in a splendid location and was a costal defence battery dating back to Palmerston days. The local Civic Society now maintain the site and have set up many interesting displays telling the story of the fort over the last 150 years. There were also more general military displays including appropriately for 1994 a very extensive D-Day exhibition.

From here we enjoyed splendid views over Weymouth Harbour and the town and in the opposite direction the magnificent breakwater which was completed in 1873 and took 23 years to build. Together with Portland Harbour the Breakwater once formed a major Naval Base.

From the fort we headed south to Portland over the narrow spit of land which joins the 'Isle' to the main land. We reached the highest ground on the island and to the north west we could see vast shingle bank known as Chesil Beach. Up here we met Peter Trim who lives on Portland and has researched and written extensively about the area. The main interest for us was the stone quarry industry. Vast quantities of high quality stone have been taken from here and used over the country. We looked at the old quarry workings and the remains of the transport

systems. These developed from horse tracks, inclined planes to steam hauled railways.

At one time on our walk we were standing at the 'back door' of the Verne, one of Her Majesty's prisons. It was formerly a battery similar to that at the Nothe.

Our final stop was at the tip of Portland Bill near the lighthouses where we were shown remnants of early quarrying. A crane for lowering stone directly into vessels was seen from the coach en route.

Our return journey was not troubled by the traffic and we had a good run back to Gloucester.

## VISIT TO SECOND SEVERN CROSSING WORKS

Tuesday 12 July

Despite being on a week day our visit was fully booked (20). We assembled in the visitor centre at the East bank construction site near Severn Beach. Our guide, Mr Gareth Howells, gave us a very clear description of the project starting with financial arrangements for the construction by the Anglo French Consortium of Laing and GTM. The bridge consists of pre-stressed concrete spans on each side leading to the long high level, cable stayed span over the navigation channel (The Shoots). The line of the new bridge in fact crosses that of the Severn Railway tunnel. The piers for the approach spans and the high level pylons are built inside concrete caissons. The latter are pre-cast on the bank, the heaviest being about 2000 tons these structures are carried by tractors and loaded onto a massive self-propelled barge. At the appropriate state of the tide the barge is manoeuvred into position and cranes on a separate jack-up rig places the caissons on the river bed with high precision. The piers are built up inside these caissons. The pre-cast elements which form the roadway are positioned using a travelling rig running on the part completed bridge and known as the "launcher".

Following the description and a lively question and answer session we walked along the sea wall and here were able to see the operations in progress.

From this viewpoint, which is a public right of way it is possible to appreciate the enormous scale of this project.

## **SOCIAL EVENING STROUD**

Thursday 28 July

This year's social evening followed the established pattern of a short walk of general interest followed by the chance for members to get together in a local pub. This year the venue was Stroud and we were very pleased to have as our guide, Lionel Walrond, one of our members. It was a warm evening and it drew a good turnout of about 30 members.

We met at the Cheapside car park by Stroud Railway Station and located at the Hill Paul Clothing factory, now destined to be turned into apartments although there had been a vigorous campaign earlier in the year to make this Stroud Museum. The unusual gateposts to the goods yard were pointed as being made from a pair of "Barlow Rail" sections bolted back to back. This type of rail was used by Brunel on parts of the broad gauge system. We looked at the former goods shed, which unhappily is still without a suitable new use. The story of the black corrugated iron omnibus shed built by the GWR about 1908 was related. Most users of the station are probably unaware of its significance.

We moved down to Wallbridge and looked at the recently restored Upper Wallbridge Lock, the remains of the approach road to the Midland Railway station over the canal and the vestiges of Wallbridge Mill.

We walked up Rowcroft and looked at the attractive terrace of town houses sadly truncated by the GWR Railway viaduct. Our walk took us past various interesting buildings such as the Subscription Rooms, the Medieval Hall and the Old Town Hall in the Shambles. The latter celebrated its 400th anniversary in 1994.

Here we thanked Lionel for an extremely pleasant evening and many of the party adjourned to the Imperial Hotel to continue the discussions.

## **VISIT TO LOWER WYE VALLEY**

Sunday 21 August

John Foley was our guide to the sites in this very scenic area.

About 25 members met at Lower Redbrook and first crossed the footbridge attached to the now disused railway bridge (Wye Valley Railway). A short but steep climb took us into the millstone quarries at Penallt .

Returning across the bridge we looked at the site of Lower Redbrook tinsplate works. This has now been cleared in readiness for housing. The only features now discernible were the ponds and the flues and base of one chimney.

From here we followed the line of the leat bringing water from Upper Redbrook Valley. We passed the remains of the Wye Valley corn mills and Redbrook Brewery to reach the celebrated Redbrook Tramway Incline and Bridge. This was threatened with demolition in the early days of the Society who played a large part in securing its preservation. Unhappily a plaque affixed to the bridge by GSIA has not survived.

We walked down past the site of the Upper Tinsplate works though nothing was apparently visible. There was more to see at re-used buildings of Redbrook Railway Station, which was only half a mile from the terminus at Penallt across the river.

From here we sped down to Tintern to the site of the old station on the Severn and Wye Railway. This has been developed over recent years as popular picnic site with exhibitions and miniature railway and importantly for us a tea room.

Suitably refreshed, a small contingent carried on back up the Wye to Brockweir Bridge (18 ) and the site of Brockweir wharf to the north of the Bridge on the east bank of the Wye. Finally we went four miles further upstream to look at Bigsweir bridge. Now it was 7 pm and after thanking John for a most interesting and pleasant excursion we separated to return to various parts of the county

## VISIT TO STOKE-ON-TRENT

Sunday 2 October

The final coach trip of the year got off to an early start from Gloucester and we reaped the benefit with an excellent run up to the Potteries.

Forty three members and friends took part. First we explored the extensive remains at Froghall wharf at the terminus of the Caldon Canal which was opened in 1779.

The main features we saw were the canal basin, two massive banks of limekilns and the routes of several tramways and inclined planes by which limestone was brought from Caldon Low Quarries. The output of kilns was used locally for agricultural and building purposes and stone was transported along the length of the canal to assist in the development of the Potteries.

The basin of the 1813 Uttoxeter Canal could just be discovered in the dense undergrowth and the outline of the lock joining this to the Caldon was visible. We were fortunate in that the rain held off until our departure and then it rained all day.

The ten mile trip to Etruria brought us to the other end of the Caldon Canal which follows a 17 mile loop to the north between the two points.

We took lunch at Etruria and then visited Jesse Shirley's Bone Mill which is now a working museum owned by the City Council. We had chosen to come on a steam weekend and had great pleasure in seeing Princess an early 19th century rotative beam engine operating. This used to drive 12 wet grinding pans and other machines.

The grinding pans operate by pushing large blocks of chert limestone around the pan with the materials to be ground in water. They were used for bone, calcined flint and other materials for the potteries. The wet process reduced the severe health hazards associated with dry grinding.

A small horizontal steam engine drove a jaw crusher for preliminary reduction of flints. Steam for both engines was supplied by a 1903 Cornish boiler removed a few years ago from Tunstall swimming baths. The museum is fortunate in having a very enthusiastic permanent staff backed up by volunteers. We had last visited the site in 1986 when the engine was still under restoration. It was good to see it and the massive mill work in motion.

We made the short journey across Stoke to Longdon, the southern most of the six towns. Here over 20 years ago the Gladstone pottery was converted into a Museum not for its fame in operation but simply as a typical pot bank. It retains four of the characteristically shaped bottle kilns which were used to fire the pots. Today there are less than twice this number in the whole of the district whereas once there were hundreds.

On our guided tour we saw the process used to prepare the clay and slip. A Marshall horizontal steam engine was on display operating on compressed air and driving some of the machines. Of particular interest were the demonstrations of throwing a pot, decorating fine china pieces and making a wide range of delicate china flowers. We also learnt exactly what a sagger makers bottom knocker did. One of the bottle kilns showed the method of loading with wares to be fired in saggars and another had been adapted to show the conditions during firing.

There were galleries showing the development of sanitary ware, tiles and techniques for applying coloured designs to pots.

All three sites had been visited previously by GSIA but there had been considerable developments at each one which made the

return worthwhile. The very heavy Sunday evening traffic forced a detour through Wolverhampton but this did not detract from a most interesting and enjoyable day.

### **VISIT TO D.R. PRICE ENGINEERING OAKLE STREET**

Saturday 15 October

About 30 members and friends gathered at David Price and son Donald's agricultural engineering business at Oakle Street Churchdown, near Gloucester. The proprietors are steam enthusiasts and have amassed a very good collection of engines, generators, pumps, saws and miscellaneous objects. They hope one day to display the collection to the general public but meanwhile kindly open their doors to interested groups. An oil engine was running and generating power for the works during our visit. One of the most impressive sights was the beautifully restored traction engine which is a regular visitor to local rallies. Many members were impressed by the well-equipped machine shop. Of particular interest was Donald's miniature steam powered electrical generator. This was neatly packed in a wooden case and could be quickly assembled to provide a grate, boiler, chimney, engine, feed pump and electrical generator. Its use we now understand may have been to provide power for a "jungle radio" system capable of operating on any available fuel.

Mrs Price generously provided coffee. We thanked the Prices for giving us a most enjoyable morning and we wish them well in their endeavours.

### **THE ASSOCIATION FOR INDUSTRIAL ARCHAEOLOGY**

The AIA organised three successful conferences in 1994. The first was the Working Week-end at Ironbridge and it was primarily concerned with typologies. Most of the time was given to local societies' work on lime kilns and establishing, at least, local typologies. In July there was a very successful seminar, organised in conjunction with English Heritage and the Royal Commission on the Historical Monuments of England, on Managing the Industrial Heritage. Although designed mainly for professionals, it did enable one to realise what are the current developments. Finally, there was the annual conference, held this year at the Agricultural College at Sparsholt, near Winchester. It was a most enjoyable event and there was a wide variety of visits to local sites. If you are interested in joining any of the AIA's activities, please let me know.

Amber Patrick