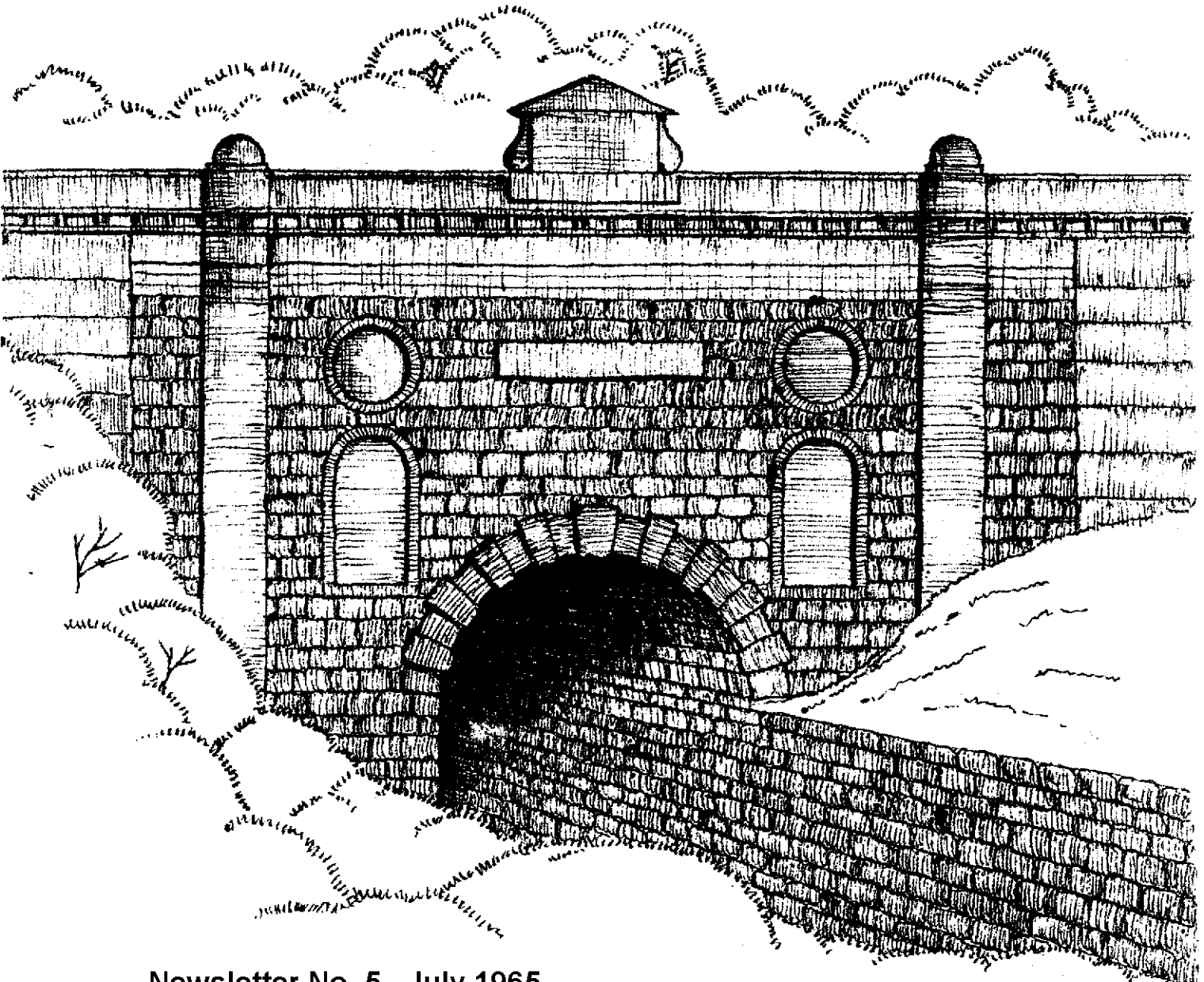
THE NEWSLETTER OF

# THE GLOUCESTERSHIRE SOCIETY FOR INDUSTRIAL ARCHAEOLOGY



Newsletter No. 5 July 1965

# N E W S L E T T E R

Number 5 JULY 1965

GLOUCESTERSHIRE SOCIETY FOR INDUSTRIAL ARCHAEOLOGY



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# EDITORIAL

"An important question is being heard particularly from within industry itself - is it reasonable to devote valuable time and energy to studying the industrial past, when the problems of the present and future are so urgent ? At the moment and in this particular field, is an addiction to history a luxury which can be afforded ?"

These words were printed in a leaflet giving details of a recent industrial archaeology course at Bristol. The questions raised are worth trying to answer.

Firstly, let us consider the devotion of valuable time and energy. Most fieldwork and research is carried out in the evenings and at weekends by enthusiastic amateurs and this, I feel, can hardly affect the industrialist's programme. Industrial archaeology is in fact a rewarding hobby for a growing number of people who are keen to carry out some original research.

It is interesting to note that of the firms supporting industrial archaeology many are amongst the most up-to-date of their kind in the world, and quite a few of our members seem to be associated with processes which are comparative newcomers to the industrial scene, such as plastics, electricity from atomic energy, nylon spinning and industrialised building. Studying the industrial past does not seem to stop these firms and their employees being forward looking in their work.

Secondly, is an addiction to history a luxury ? Personally I cannot see any difference in the principle between recording industrial history and recording all other history of mankind and the universe. Acquaintance with the facts of each adds to one's store of knowledge. Noting down the results of your work now will help to satisfy future generations seeking information; how often do we read today that the site of an industrial process is now unknown ?

At the same time there are also practical advantages in this recording; for example the plotting of mine shafts where later building may take place. In the area of the Bristol coalfield, described by Dorothy Vinter in Volume I of "The Journal of Industrial Archaeology", building can be a hazardous undertaking and mining consultants can only give rather vague advice.

Finally, fieldwork activities may yield the additional stimulus of finding a rare object worthy of preservation in a museum.

I am sure readers can think of even more answers to the questions posed in the opening quotation. I am also certain that all this adds up to the fact that we are not wasting our time; our work is worth doing both for the information we gain and for the knowledge of those who follow us.

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## SOCIETY EXCURSION TO NEWNHAM-ON-SEVERN

### 24th April, 1965

Following our 1964 visit to Chepstow and Lydney we recently visited three further places on the River Severn with shipping associations. Over thirty people turned up to hear the vicar of Newnham, Rev. R.J. Mansfield, dip into his great fund of local knowledge to tell us the history of the port and nearby pills.

From before Roman times Newnham has been the site of an important river passage which commanded access to the Forest and until the beginning of the 19th century, when the hard bottom began to break up, it was possible to cross by a ford at low tide. A piked road leads eastwards through Arlingham on the other bank.

Severn trows have plied the river for several hundred years and in the middle of the 18th century Robert Pyrke, a successful merchant, built quays and warehouses at Newnham to facilitate the handling of cider, glass bottles, pig iron, lead, coal and other minerals despatched by boat. Even after the opening of the Gloucester & Berkeley Canal in 1827 the trows remained active and there has been regular traffic between Bristol and Newnham up to times within living memory.

Shipbuilding is known to have kept many people employed there from the beginning of the 16th century up to the middle of the 18th century when the larger vessels required caused the industry to move first to Lydney and Aylburton and then to Chepstow.

We were told of Newnham's famous glasshouses, remains of which no longer exist. The present car park is near the site of a large glasshouse built during the reign of Charles I (1725 - 1749) by Edward Mansell and incorporating one of the first furnaces to be fired by coal. An earlier glassmaker was

John Wilcocks who, when he died in 1684, tenanted two glasshouses at Newnham, two at Gloucester and one each at Cannon Marsh (Bristol) and Chelwood in North Somerset.

(Gloucester County Records Office has several deeds relating to this industry which began in the 16th century, including an agreement between James Legree, a green glassmaker of Newnham and Charles Corsellis of St. Botolph with Aldgate, London for sending a consignment by sea in 1672). The glass making industry appears to have died out here between 1700 and 1740 so it is not surprising that the only surviving evidence is the presence of many dross building blocks in the riverside buildings (see Newsletter No. 4 page 12). These very dense and heavy blocks measure approximately 18" x 9" x 7" thick and were formed by pouring the scum from the top of the molten glass into special moulds.

We walked down the right bank to the site of the now defunct ferry, where Mr. Mansfield spoke of the first abortive attempt by Mr. Enoch Williams to open a car ferry utilising floating pontoons. We gathered that upon cessation of the Aust-Beachley ferry Mr. Williams may return to have another go at this project which would certainly be greatly favoured by Forest dwellers who go to work on the east side of the river.

From Newnham we drove to Collow Pill, $\frac{1}{2}$ mile downstream, once the site of a tannery using bark from the forest. Thence we walked across the fields to Bullo East signal box where we were shown a stone lined shaft in a clump of bushes nearby. A company was formed in 1810 to construct a tramroad tunnel under the river but by 1812 only two shafts had been sunk and the road approach cleared. The project was abandoned at this point and little now remains of this ambitious venture.

Our guide next led us to Bullo Pill where we parked in a yard which possessed gateposts made of broad gauge rails. We inspected the deserted stone dock with its rotting gates, grass covered quays and stone dammed pound above. Bullo Dock was opened in 1807* but by 1839 was already inadequate with the result that much of the traffic was diverted to the larger docks at Lydney. There was a temporary return of trade to Bullo between 1850 and 1890 when silting and water shortage troubles at Lydney caused many vessels to seek alternative dock facilities.

Shipping activities came to an end at Bullo early in the present century when a trow, appropriately named the Finis, was the last recorded boat to use the dock.

* This is the date of the opening of the tramroad leading to it.

The original tramroad to Bullo, laid to bring coal down from the Forest, was to 4'0" gauge. This was changed to a broad gauge railway before finally ending up as a standard gauge line. Although the engine shed was closed in 1931 the branch line has only recently been taken up as it has served a nearby rubber factory during recent years.

We returned to The Green in Newnham-on-Severn where evidence has been found of a candle manufactory which supplied the needs of the Forest miners. In a final summing up, Mr. Mansfield spoke of various developments in the town's history and with a visit to the church we concluded an interesting afternoon's tour.

Warren Marsh.

## INDUSTRIAL MONUMENTS SURVEY

In an extract from a recent letter to the Society, Mr. Rex Wailes says :-

"What the Survey is needing, in addition to record cards and information, is actual reports or recommendations as to what should be recorded in detail, what ought to be measured up and drawn out, and what ought to be preserved. Very few reporters make these recommendations, and if you can encourage members of the Society to do so it would be a great help. What we do not want, of course, is indiscriminate recommendations for recording or preserving everything to hand."

## BRISTOL AND GLOUCESTERSHIRE ARCHAEOLOGICAL SOCIETY

A copy of "Transactions 1964" has been received. Of special interest is the article on "Milestones of the Stroud District" by Christopher Cox which provides illustrations and more details than those which were recorded in Volume 3 of this Newsletter.

G.N. Crawford

# THE NETTLEBRIDGE VALLEY

The second summer outing of the Society, on 8th May 1965, was to the Nettlebridge Valley, once a heavily industrialised area, lying midway between Shepton Mallet, Radstock and Frome. The journey to the area was broken at Bristol to see the Department of Technology of the City Museum (see on). We arrived in time for lunch at the Old Down Inn, which stands at the crossing of A37 and B3139 (map ref 624514). This was a coaching inn and posting station and an account of the mail coach services is in the hall.

The rendezvous with Robin Atthill, who was to guide the party, was on an embankment which once carried a 2' gauge mineral line from Moorewood Collieries to the Somerset & Dorset main line at Moorewood sidings (627509). We saw one of the pits which lies in the valley and from which coal tubs were drawn up an incline by wire to be hauled along the mineral line by 0-4-0T locomotives. The coal was transferred to main line trucks at the sidings. This line was about a mile long and its site can be traced alongside Coal Lane south eastwards from Old Down. There were two pits here: Old Moorewood, worked 1800 - 1865, and New Moorewood 1865 - 8 and 1909 - 1932. New Moorewood was finally closed by a fire which burned underground for many years. The buildings and stack of New Moorewood still stand and, until recently, were lived in.

Within half a mile of these small, abandoned, pits is the New Rock group of pits which are fully modernised and operated by the N.C.B. (648506 & 649497). These form the most recently developed colliery in the Somerset Coalfield: the coal goes from them by road to Portishead power station.

The modern A367 follows the Foss Way for about four miles south west of Radstock. At Nettlebridge it makes a big S bend to cross the steep valley. This is the latest of a series of crossings which can still be seen: the route of the old Foss Way, several alignments of the turnpike road and the present day A367. The turnpike was operated by the Shepton Mallet Trust from 1779. In the hamlet of Nettlebridge are the remains of a building once used as a warehouse for yarn and finished stockings, the product of cottage industry.

Down the valley from Nettlebridge a lane leads to Fernhill and Stoke Bottom (660480). The population of Stoke Bottom declined from over 200 in 1791 to 145 in 1841 and now there are only two inhabited buildings and these are modern. Only traces remain of the walls of the houses, shops and inn which once stood. Most of the work for the villagers was provided by a logwood mill, which is recorded as being for sale in 1784, and a paper mill

which worked from 1790 to 1840. Later there was an edge tool mill. Walls of a mill survive at a point about 50 yards from St. Dunstan's well where the stream first emerges from the hillside. Such a site favoured paper making because of the ample supply of clean water. The flow of the stream is now diminished by an offtake installed by the Water Board at the well itself.

A plan to carry coal from the Nettlebridge valley pits by a nine mile branch of the proposed Dorset & Somerset canal came to an end when the project was abandoned in 1803. Various disconnected stretches of this branch were dug, the most westerly of which terminated at a basin at Stratton Common. The towing path, stiles and an accommodation bridge can still be seen between here and the Duke of Cumberland Inn half a mile to the east, at Edford (669487). The branch canal was authorised by Act in 1796 but in 1803 capital had run out and, to quote a comtemporary pamphlet, "public attention was diverted by military preparations and repeated alarms of the day".

Edford is a hamlet lying at the south edge of the village of Holcombe where an extensive brewery was founded in 1800. Part of the brewery building remains, in use now as a garage. Brewing ceased in 1904, but malting in a separate range of buildings continued up to 1930. Parts of the maltings still remain, either in use as outbuildings or incorporated into the garden walls of more modern houses.

The journey from Holcombe to Mells took the party through Highbury and Vobster. Time and the weather prevented us from walking half a mile from Highbury to Coleford (688487), but here the canal passes over an aqueduct before plunging into a now blocked up tunnel under Highbury hill. There is also a Corn Mill containing a pumping engine to supply the village with water.

Mells is a Tudor cloth town with a fine example of a Somerset church, built about 1540. Memorials in the church commemorate the Fussels who founded the Mells ironworks, and the Horner's who were lords of the manor for 300 years. The Fussels, as newcomers to Mells, faced bitter opposition from the Horner's before they were able to establish their ironworks. The works were taken over in 1894 by Isaac Nash of Stourbridge and were closed down; this was Nash of the company which later was absorbed in the combine now known as Brades Skelton Tyzack. The Rector of Mells, the Rev. F.W. Cleverdon showed us the church and filled in many details of local interest.

From Mells we returned home via Frome and Bath, having seen many industrial relics, but these were only a fraction of what lies in this small area of Mendip called the Nettlebridge valley.

NOTES: The article on the preceding two pages is based on notes provided for the visit by Mr. Robin Atthill.

The Department of Technology of the Bristol City Museum was moved from Queens Road about a year ago to temporary premises in Upper York Street, pending the building of a permanent museum in the Wine Street/Castle Street area. Exhibits include one of the first touring caravans, rope making machinery and an early gas engine which powered a crane at the Crew's Hole tar distillery of William Butlers. There is a small horizontal gas engine by the Dudbridge Foundry amongst many other items. (ref. Newsletter No. 2).

G.S. Annis

## CITY OF GLOUCESTER MUSEUMS

The Report for the last two years covers various items of interest to members.

Six scale models of aircraft produced at the Gloster Aircraft Company's factory at Brockworth have been presented to the City Museum. It is hoped that, eventually, they may be transferred to the Folk Museum as the beginning of a collection representative of local industry.

In the Folk Museum amongst material received are the following :-

(1) Cast iron plate from a milestone, Thames & Severn Canal.

(2) Winnowing machine by Kells, Ross-on-Wye.

(3) Aptus camera with stereoscopic lens from Gloucester C.I D.

(4) Kitchen range by Herbert & Hope, Gloucester.

(5) Model of a panel sided box waggon of West Gloucestershire type.

(6) Model of barque "Oberon" which traded to Sharpness in latter years of 19th century.

G.N.C.

Since going to print, one of the dates mentioned on the inside of the front cover of this issue has been amended. Sapperton canal tunnel was open to traffic from 1789 to 1927.

# STROUD VALLEYS IMPROVEMENT SCHEME

During the two years I have now spent in this County I have made frequent journeys along the Stroud Valleys, both by train and by road. On these occasions I have been struck by the contrast between the clean unspoilt Cotswold country and the tawdry industrial landscape in the Valley bottom.

Accordingly, when the Council for British Archaeology held a conference with the object of enlisting the help of Planning Authorities in the cause of Industrial Archaeology, I thought this was the opportunity for the County Council to work with the Amenity Societies enlisting their aid in a general tidying-up and restoration of some of the amenities of the Stroud Valleys, which are to some extent in these days suffering from industrial dereliction.

With the blessing of the County Planning Committee, I addressed local District Councillors and Officials representative of the Chalford and Nailsworth Valleys in Stroud, in July last year, on the subject of the appearance of the Valleys. The main theme of my talk was reported in the local press and dealt with the desirability of eliminating much of the clutter which at present defaces the Valleys. Large scale demolition is not what I have in mind, but rather the removal of derelict sheds and outbuildings no longer serving a useful purpose, the clearing away of rubbish and some forms of industrial waste which now produce the eyesores with which we are so familar. There are examples of misplaced signs, bad advertisements and wirescapes, so ugly in their form that it is surprising they have been tolerated for so many years.

Here and there along the length of the Valleys landscaping schemes would contribute greatly to the good appearance of the area, and with this in mind the County Council will in some cases supply the trees, materials and expert labour required for the landscaping schemes at no charge to the private owner within whose curtilage the planting is to take place.

There are instances where a coat of paint could be used to advantage, in particular on the roof covering of some of the new industrial buildings. The "Dark Cotswold" colour used by the Stroud U.D.C. on the asbestos covered roofing at their London Road depot, is the correct use of colour in the surroundings. Instead of a prominent raw coloured roof, the buildings have a subdued appearance making them much less conspicuous in the landscape. Green paint and materials should be avoided as, far from the intentions of those that use this colour, it conflicts with rather than harmonises with the greens of nature.

The other features of the environment which require such a lot of attention, are the fences which of course are so prominently placed in relation to the roads of the Valleys. At present there are whole lengths of derelict masonry walls, painted and rusting corrugated iron fences, chainlink fencing supported on cracked concrete posts with rusting reinforcement and timber fences in various stages of dereliction. The Cotswold type of walling now being erected in the Bowbridge area in connection with Highway Improvements, is I think, of great benefit to the appearance of the area. But there are places where quite simple timber fences could be used which would give a neat trim to the industrial development which they would surround.

It is my firm belief that if these comparatively inexpensive sort of works were carried out by the property owners in the Valleys, a great improvement in the general appearance of some of the industrial premises could be achieved, particularly when viewed from the railway. Some of the fine examples of early industrial architecture would certainly be better appreciated when seen without some of the clutter of small sheds and out of date advertisements displayed on their walls.

What has been achieved so far in the way of a face-lift for the Valleys? I have written to about 50 owners and occupiers of the more prominently situated industrial and business premises, explaining the County Council's interest in achieving a general face-lift in the built-up areas along the Stroud Valleys. Discussions have taken place with the occupiers at a dozen or so of these premises when the problem as it affects the individual property has been investigated in detail. In some cases, action has already been taken by the owners on the lines I have suggested and, generally speaking, I have been very encouraged by the reception given to my suggestions. Amongst the larger firms at any rate, I would say there is a real concern over the present state of affairs along the industrial floor of the Valley and a desire on their part to remedy some of the more obvious eyesores. There is of course a problem as far as the small firms are concerned, and in particular where the original mill is now in a multiplicity of ownerships or tenancies. In these cases the financial resources of the companies are inadequate to make good the repairs which are considered desirable. A greater problem still is to be found, for example, at Brimscombe, where extensive industrial buildings are lying idle and have been so for a number of years. I am at present considering ways and means whereby a satisfactory solution might be achieved in such cases.

The Stroud and District Planning Sub-Committee has resolved to challenge some 23 advertisement hoardings and other signs in the Valleys; that is to take the first step in the statutory procedure which will lead eventually, it is hoped, to the removal

of the offending advertisements from the sites in question. The same Sub-Committee has authorised enforcement action to secure the cessation of use and the removal of materials from land near Ham Mills where the land is being used without planning permission for car breaking and the dumping of scrap metal. Similar action is being taken to secure the removal of unsightly materials from a nearby site.

On 15th April in the programme "Points West" the B.B.C. TV showed a film of a trip I made to Brimscombe and Woodchester with Kenneth Hudson, the author of "Industrial Archaeology", when we discussed the reclamation of the Stroud Valleys in relation to the Industrial Archaeology of the district. I am hopeful that this programme will be repeated later on the Midland Region of B.B.C. TV, to give wider publicity for the project.

Next October there will be an exhibition in the Stroud Subscription Rooms when the Local Branch of the C.P.R.E. will be collaborating with my department and, I hope, the District Council in a further development of the Stroud Valley Improvement Campaign. I know that members of the Gloucestershire Society for Industrial Archaeology will wish to assist in any way they can and this should result in the very buildings they are trying to preserve being seen in a better setting. Perhaps we can persuade the owners to let the buildings revert to their original form before later industrial developers added excrescences which so often appear to have been constructed without any general plan and without considering the relationship of the structures to the original mill buildings.

It may be said that industry must have its backyard, and this is often true, but in the Stroud Valleys the industries' backyards are so often their forecourts when seen from the railway line. This cannot be good for the industrial prestige of the district. A further point about the Stroud Valleys is that they are exposed to view from the surrounding hills and so the untidiness is seen from a wide area. This brings me to another reason for action in the Valleys at the present time. The Cotswolds are shortly to be designated as an Area of Outstanding Natural Beauty (under Sec. 87 (i) of the National Parks and Access to the Countryside Act 1949) and the Stroud Valleys encroach into this area like two long curling fingers; sore fingers which badly need healing. The National Parks Commission have kept back the boundary of the Designated Area around the valleys and even excluded Minchinhampton Common obviously because these areas do not measure up to the standard of the parts included within the Designated Area. Here there is a challenge. We must do all we can to improve the appearance of the Valleys and this face-lifting action I am suggesting could, I believe, achieve the desired result even though it may take a long time.

N.R. Collins
County Planning Officer

## THE NEW PASSAGE HOTEL, PILNING

This is the first of a series on historic Gloucestershire inns enjoying connections with an industrial past. Further contributions in the same vein are invited.

Driving westwards through Pilning village the main road curves away to the right towards Aust ferry and a narrower road goes straight on through Redwick to New Passage. A low embankment on the right marks the line of the old broad gauge Bristol & South Wales Union Railway which here ran out onto a timbered pier jutting into the River Severn. From this point passengers were once ferried to Portskewett on the opposite shore to rejoin the railway there. Nothing now remains of the pier except a stone abutment and recently there was talk of blowing this up.

The fifteen bedroomed hotel with its wrought iron balconied verandahs and large french windows opening onto a trim lawn is best viewed from the river bank. To the north one gains an impressive view of the partially decked Severn road bridge. Behind the main white painted buildings can still be seen the foundations of the private gas making plant which was installed when the hotel was first opened.

Upon entering the imposing buildings from the car park one is at once confronted with a truly gigantic bar and to one side a ballroom some seventyfive feet long entered through decorative wrought iron gates. Above the bar hangs a framed extract from the London Illustrated News dated 5 September 1863; this contains a good deal of information and a colour print of a contemporary scene showing passengers alighting from a train on the pier. The ferry service started on 25 August 1863 and it is said in one account that when the hotel, which was constructed solely for railway passengers, was full of good company the captain of the ferry boat would say "Can't cross today, it's too rough - we must wait until next morning"; whereupon plenty of good cheer was drunk and a good night was had by all.

Incidentally, one record states that one of the ferry boats in use in 1884 was named the Christopher Thomas after a famous Bristol soap manufacturer.

Twenty years after the ferry service began the Severn Tunnel was under construction and the hotel did a roaring trade when the navvies from the workings gathered there on a Saturday night. Much beer was consumed and frequently fights broke out over the "ladies" who had travelled from Bristol for a night out. The

Severn tunnel was finally opened in 1886 at a cost of approximately £1½ million. After the ferry closed down the hotel must soon have falled on quieter times.

The next stage of development concerns not railways but, surprisingly, cinematography. In 1921 H.G. Matthews carried out the first full scale experiments in the projection of moving films coupled with a sound track. These trials, which took place in the hotel ballroom, culminated in success but the inventor was left with no money for full scale production. The idea was offered to the American film industry but it was turned down as not being a suitable commercial proposition. Only six years later the idea was reborn and was hailed as a wonderful new American invention. Even now Matthews' name is hardly known and he gets little of the credit he deserves. The full story is told in the "Death Ray Man" by E.H.G. Barwell who is Harry Grindell Matthews' biographer.

During the last war the hotel was used to accommodate Avonmouth workers and now the licensee is Mrs. Mary Bracey, a well known local character with a colourful personality.

Callers to this Free House are assured of a hearty welcome and the good cold meats and salads offered with a wide range of keg beers should attract the discriminating enthusiast.

Warren Marsh.

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(If this is to be the first of a series as suggested, the following rules are to be observed :-

1. No claims for research expenses will be entertained by the Society.
2. The last two articles of any member submitting four or five in one day, will be treated as suspect.
3. In the event of the above happening the member is not to try to pronounce the name of the Society at the last port of call.
4. Advertisements will not be allowed because the member has been given a free meal.
5. All members on research will be accompanied by one member, with driving licence, not on research.
6. Undecipherable stained manuscripts will be returned to the senders.

Editor)

## COUNCIL FOR BRITISH ARCHAEOLOGY REPORT No. 14

It is interesting to read this report and see how our local effort fits into the national picture regarding industrial archaeology. From every region the picture seems to be the same: although many C.B.A. record cards have been issued, very few have been returned completed. This slow progress by the C.B.A. (typified by the fact that only one C.B.A. London Region member in fifty in a local society is interested in recording I.A.) has led to the formation of the North Western Society for I.A. and History.

A General Report on Industrial Monuments - Mr. Wailes has drawn attention to the speed with which railway workshops etc. are likely to be swept away. He is being provided with a programme of proposed demolitions and had visited Swindon to consider which structures should be preserved. He had recommended the preservation of Forge Mill, Redditch; the winding engine of the Middleton Incline at Cromford, Derbyshire; Bonawe Furnace, Argyllshire; some Lancashire cotton mill steam engines; Crofton pumping engines, Savernake, Wilts; and four beam engines at Abbey Park, Leicester. It was reported that the Institute of British Geographers held a symposium on "I.A. and the Geographer" last year, and that the National Trust had been negotiating for Worsley Delph, an early canal basin near Manchester, and had considered a West Country gas works containing early equipment. The Dudley Canal Tunnel Preservation Society were trying to raise funds to extend the tunnel through a proposed railway viaduct which threatens to block the tunnel's entry.

Group Reports - Amongst these many reports, the following are of especial interest :-

Group 8 - Messrs. J.L. Hobbs and R.E. James of Shrewsbury Library & Museum, have completed 300 C.B.A. cards recording Shropshire mills, mines, forges and furnaces.

The Extra-Mural Department of Birmingham University have formed a panel of speakers prepared to visit local societies and lecture on I.A.

Group 9 - A survey of water mills and milestones has been reported from Berkshire and the Oxford University Archaeological Society has continued work on the I.A. of Witney. One of the 19th century woollen mills has been measured, the workhouse building on the Panoptikon principle in 1836 has been surveyed and a general study made of industrial housing in the town. The Society is now studying surviving weaving sheds, both large and small. Outside Witney work on the Chartist land settlement at Charterville goes on, and it is hoped to collaborate with the Railway Society to study the old L.M.S. Station at Oxford.

G.N. Crawford.

## INDUSTRIAL HISTORY COMPETITION

### GLOUCESTERSHIRE COMMUNITY COUNCIL LOCAL HISTORY COMMITTEE

It is unfortunate that the competition only attracted five entries, which is rather surprising in view of the current enthusiasm for Industrial Archaeology.

The five essays which were received are all of considerable interest. Four of them show evidence of a high standard of scholarship involving much original research, and it was gratifying to find that all competitors based so much of their material upon primary sources, such as Company records and contemporary accounts. The fifth entry deserves a special mention, for it was by a fourteen year old schoolgirl, and whilst not perhaps quite the type of entry envisaged by the rules of the competition, was nevertheless a praiseworthy attempt at historical reconstruction.

Three of the entries dealt with transport undertakings, and make a most useful contribution to the history of communications in the County. The other two essays dealt with aspects of the industrial history of the Stroud area, and Mr. Rose's paper on the Lightpill Mills is a model study of the development history of a local cloth mill.

The task of allocating an order of merit to the essays was an extremely difficult one, but after lengthy deliberation it is suggested that the entries be placed in the following order :-

1. The Thames and Severn Canal - Humphrey Household (4 gns.)
2. Lightpill, A Cotswold Cloth Mill - R L. Rose (3 gns.)
3. An Introduction to the Turnpike Road System in the Stroud District - Christopher Cox (3 gns.)
4. The Navigation to Stroud - R. A. Lewis (2 gns.)
5. Life as a Clothier at King's Stanley Mill - Elaine Marshall (age 14)

A special prize of a book-token to the value of 2gns. has been awarded to Miss Marshall.

It was a great pleasure to read the essays, and all the competitors should be congratulated on producing papers which are not only of considerable historical merit, but which are also written in a pleasant literary style.

(See Editor's note overleaf)

## ARCHAEOLOGICAL EXCAVATION AT HAIND PARK WOOD

An excavation on behalf of the Gloucester Museums was carried out from 22nd April to 3rd May on a post-Medieval kiln site in Haind Park Wood, between Dymock and Kempley, Glos. The excavation was carried out by volunteer labour and directed by R.D. Abbott, Deputy Curator.

The site was originally indicated by the presence of potsherds in badger and rabbit holes, and the objects of the excavation were to ascertain the date of the kiln, to obtain a comprehensive series of the kiln's products, and to learn something of the kiln itself and the techniques of manufacture employed.

Sherds from the waste heap were found scattered over a roughly circular area, some thirty feet in diameter, and extensive trenching showed that the heap contained many tons of kiln waste, comprising broken pots, "wasters" (pots which had collapsed during firing), firebars and hard-fired clay "bats" on which the pots had stood during firing.

The kiln had manufactured a wide range of pottery ranging from fine black glazed drinking cups to more humble wares such as butter jars and chamber pots. Cooking utensils included saucepans and three-legged skillets, and cream dishes and pancheons were also made. The wares are representative of those commonly in use in 17th century England, and it is probable that the life of the kiln extended from c.1620 until after 1700.

The pottery had been fired in a small circular kiln, five feet in diameter, with a stone floor surrounded by a low stone wall. The vessels had been stacked in layers separated by the clay bats, and covered by a superstructure of bricks and clay. The bricks used in the kiln were typical hand-made bricks of 17th century date and were no doubt manufactured on the site.

The clay in the vicinity of the kiln is very suitable for pottery making, and a deposit of washed clay which had been discarded was found on the waste heap, and presumably represents surplus raw material from the last firing of the kiln.

Permission to carry out the excavation was readily given by Mr. Kenneth Leach the owner of the wood, whilst the Tilhill Forestry Company afforded every facility including the clearance of trees and undergrowth from the site prior to excavation.

R.D. Abbott *

* See note on following page.

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## Industrial History Competition

March 1965

It is pleasant to record that all the first four entries are from Society members and the essay on a clothier is by the daughter of one of our lecturers. Your Committee heartily congratulates all five on their success.

Editor.

## THE NAILSWORTH KETTLE

We are indebted to "The Ariel", journal of the E A. Chamberlain group of companies, from which the following information was obtained.

In the late eighteenth century a stamp office was established in George Street, Nailsworth and tolls were collected there from road users.

During the next century the adjoining warehouse was taken over by a Mr. Heath and the ground floor became an ironmongers shop. It is believed that Mr Heath brought the copper kettle from either Malmesbury or Marlborough.

This large kettle has the remarkable capacity of 82 gallons and together with its lid fashioned in the style of a miniature kettle it still hangs from its ornate wrought iron bracket in George Street. At one time the legend "Mazawattee Tea" was painted in gilt lettering around it. One report suggests it was erected in Nailsworth sometime between 1876 and 1881 and goes on to say that before being hung it was filled with water and boiled over a tripod in the old Nailsworth market.

Another account by Mr. W. Brown suggests that the kettle was erected for one of Queen Victoria's Jubilees (1887?) when it was the centrepiece of the Nailsworth decorations. Miss D.F.L. Smith of Bridge Street, Nailsworth tells how her grandfather is reputed to have got inside the kettle some 80 years ago; a blacksmith by trade, he may have been responsible for its erection.

Yet another local inhabitant has recounted how late in the nineteenth century there was some disagreement between the citizens of Amberley and the citizens of Forest Green and feeling ran so high that they used to fire at each other with cannon. Obviously an astute business man, Mr. Heath supplied both parties with arms and he kept his stores of gunpowder in the store over the ironmonger's shop. One day, the gunpowder exploded and blew up the store but, fortunately, the kettle and most of the irormonger's shop was undamaged.

cont. next page ....

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We have recently learnt that Mr. Abbott has accepted the curatorship of the Peterborough Museum & Art Gallery and I am sure all members will join in wishing him every success in his new position. Mr. Abbott has been a regular contributor to the Newsletter and all who heard his inspiring lecture at Stroud will not easily forget it. We shall miss his extensive knowledge and great enthusiasm for industrial archaeology but we are glad to hear that he intends to continue membership of our Society.

Editor.

Later on, the old warehouse was rebuilt as a laboratory and became part of Chamberlain's factory. The company is well aware that it has inherited an object of local pride and the old kettle is given periodic attention whenever necessary.

There are many shop signs in other Gloucestershire towns and it would be interesting to know if any members have started photographing or recording these. The Nailsworth kettle is unique and obviously will be well looked after for many years to come; other signs like the moving bell strikers over Baker's shop at Gloucester Cross will soon be demolished and it is our job to record these before it is too late. Miss Barbara Sydenham has already offered her services to the Bristol I.A. group to collect information on Bristol shop signs - who will do the same for us ?

Warren Marsh.

## MEETINGS OF YOUR COMMITTEE

The many hours of work which are put in by members of your committee can be judged by these extracts from the minutes of meetings -

12 January : Mr. Marsh spoke about the Planning Department's meeting at Mushet's Barn, Coleford, at which he represented the Society when the proposed demolition of this structure was discussed. The Highways Department agreed to erect a plaque on site. Mr. Walrond's appraisal of Damsell's Mill, Painswick was read out in reply to a letter from the County Council concerning conversion of these premises to residential quarters. (Later it was learnt that permission was not granted for other reasons).It was recorded that the sale of 825 Christmas cards resulted in a profit of £11. 0. 0. for the Society. The Summer Programme was discussed at length. (Details have been given to Members in circulars).

17 March: Talks took place on the possibility of local authorities erecting plaques on sites of industrial interest. A list was drawn up and it is hoped that authorities will favour this idea when approached. Mr. Robins spoke about his lecture to the Cheltenham Society and it is hoped that a series of lectures in Cheltenham may follow this autumn. Mr. Walrond submitted a list of the ten best examples of local mills as requested. Messrs. Townley and Strange reviewed the fieldwork programme.

14 April: Mr. Crawford reported that the Society's Slide Library now possessed 38 colour slides which were available on loan to anyone giving lectures on our subject. These photographs have been financed by the University of Bristol and it is intended to increase the collection steadily (see notes elsewhere in this issue). Mr. Marsh said he had ordered photocopies of the 1830 6" O.S. Maps for the Stroud valleys from the British Museum. These are also to be made available to members on loan. It was agreed that at the next AGM a proposal should be put forward to have a 15/- combined family membership fee. Mr Robins reported that Mr. Kenneth Hudson has contacted him about a TV film to be made about the changing pattern of industry in this region. Discussion took place about the future expansion of the Society; it was suggested that the size of the committee be increased to cope with the many activities which the Society is undertaking. Mr. Pullan stated that our membership was now 114 and the funds stood at £58. 0. 0.

## F I E L D  W O R K

AIMS

During the past six months members of the Society have been making a detailed survey of the Thames & Severn Canal. Commencing at the Round House, Chalford, details of locks, bridges etc. have been recorded as far as Bourne Lock, immediately above Brimscombe Port.

At present, a small party is uncovering the outline of the dry dock and boat building yard at the Bourne in order to note the dimensions and produce a photographic record; there appear to be no old plans of the yard in existence.

SURVEY EXPEDITION NO 1.

Having measured one lock the party divided into different groups and the combined findings are listed below.

The wharf adjoining the Round House (now used as a private museum) is at two levels, bounded by the road on the S. side, and is known to have been closely connected with the working of the mill adjoining in the days when it ground flour. On the bank itself a circular hollow and a square slot were found, possibly the bases of two types of cranes.

We noted two tethering blocks by the weir and Round House, one still with its iron ring, before passing under an original brick bridge to the lock adjoining Bliss Mill. We took measurements here, paying particular attention to the upper end with its various sluices and overflows, one of which runs to a tumbling weir at the opposite end of the lock. The siting of the weir on the north side is curious in that the water, after falling eight feet down the central well into a small stream of spring water, has to be carried under the bed of the canal at its deepest point.

Measurements were next recorded at the lock by the foot of Cowcombe Hill, now partly filled in and overgrown in places. The morning's work ended with an examination of an unusual mid/late 17th century carved doorhead at a nearby clothier's house. We returned along the Black Gutter path past a curious sluice device and the ruinous basement of an unknown stone-built structure.

CONCLUSIONS

1) The locks themselves differ greatly, especially in the construction of the upper end and the fitting of the sluices.

2) The pivot ends of the lock gates are held to the masonry by a most elaborate series of cramps and wedges.

3) Wharves greatly vary in size, the smaller ones being probably more numerous than one would imagine.

4) Tethering rings occur in several places, but their location does not appear to have been previously recorded.

FUTURE PLANS

We would like to remind you that Mr. Townley will be organising field work on other projects on either the Saturday or Sunday of the following weekends :- 26th/27th June; 31st July/1st August and 28th/29th August. Please ring Stroud 389 (evenings) a few days before the relevant weekend to ascertain final arrangements.

Also, members and their friends are invited to join Mr. Townley at Rodborough House for an informal get-together at 7.30 p.m. on any of the following Fridays :- 16th July, 13th August and 17th September.

L.F.J Walrond
J.M Strange

GREAT WESTERN SOCIETY

A letter in the Bristol "Evening Post" mentioned that it was hoped to form a local group of the Society in Bristol. Enthusiasts interested and wishing to obtain further details should contact Mr. J. Scott, 19 Lincombe Road, Downend, Bristol.

G.N.C.

## COALBROOKDALE - An Extract from "THE SEVERN VALLEY" by RANDALL - dated 1862

Coalbrookdale has long been celebrated for its iron works; from time immemorial the ring of its hammers and the noise of its forges have mingled with the sounds of its streams and the whisperings of its trees. Of the origin of the works, there is neither record nor tradition, and persons unacquainted with the history of ironmaking sometimes wonder that Coalbrookdale should have been chosen for this important branch of manufactures, seeing that neither coal nor iron ore are found there. The situation, however, was formerly a desirable one, proximity to the mines being a secondary consideration, and a good strong stream near a wood a primary one; one blew their leathern bellows and lifted the huge forge-hammer, whilst the other supplied the means by which to smelt the ore. Few places have done more to help along the path assigned it the great civilising agent of modern times. Whilst the "fire-water-work" of the Marquis of Worcester, in the hands of Watt, was assuming a form that was to culminate in the modern locomotive, improvements destined to terminate in modern railways were being made by men of the Dale. "I, some years ago," said Sir R. Stephenson, "visited the great iron works at Coalbrookdale, where cast-iron was indisputably first applied to the construction of bridges; and, according to the information which I have been able to obtain, it was here also that railways of that material were first constructed. It appears from their books that between five and six tons of rail were cast on the 13th November, 1767, as an experiment, on the suggestion of Mr. Reynolds, one of the partners."

The works are famous chiefly for their fine castings. Upon entering, the first thing that strikes you is a heap of black-looking material, used for taking an impression of the model. The boy shovelling it into an iron frame-work, or the man ramming it tight down till it fills every crevice, will tell you that it is fine sand, mixed with charcoal; also that he is very particular about the quality of sand, that for some purposes he has to go miles in search of one suitable.

The mould is in parts, that it may be taken to pieces for the convenience of liberating the model when its exact impression has been made upon the sand; and when this is completed, it is separated, the model is taken out, and the parts are again restored. Not that the former will answer to the latter in every respect; cast-iron, the moulder will tell you, occupies less volume when fluid than when solid; yet, in the intermediate act of arranging its moleculae, it is of larger bulk than at any other time. The men were moulding, during a recent visit paid to these works, John Bell's statue of Cromwell, for the Exhibition of 1862; the casting of which, or of a more bulky object, such as a cylinder, is an exciting time among the men, and a successful

operation is usually deemed a triumph. With tact and art, you see them ramming the sand firmly but equally round the mould, taking precaution against a contingence not uncommon in the cooling, called the expansion or separation of the interior and exterior of parts of the mould. Cranes, crabs, and strong chains are employed in moving and swinging about monster cauldrons of liquid metal. The men, all activity, skip about with blazing torches; some skim the metal with rods dripping hot, that let fall drops of liquid iron. All are grimy with charcoal dust; voices are raised to the highest pitch, and everybody appears to be looking for something he cannot find. The hissing cauldron being swung over the entrance to the mould, the sparkling metal in a golden stream is poured in; but it is not enough, and ladle after ladle is brought, till, being full, the surplus goes splash upon the ground, in molten drops that sparkle like stars. But after the monster has been filled, and the metal has run over, it requires more. Other ladles full are poured in, and rammed down the runner of the mould, to supply the shrinkage, an iron rod being worked up and down to prevent the metal settling till it has percolated into every chasm formed, either by air or the shrinking of the mass. Supposing the article cast to be a statue, it is taken to be filed and chiseled, and if a cylinder, to the mill to be bored. Hard as its interior is, there are knives that peel off the iron from the interior as easily as you would peel an apple. It may groan and growl beneath the operation, but still it moves up to the knives, compelled by the dread force of wheels and straps, till the process is complete.

The advance made in what may be called fine art and ornamental casting, - those finer manipulations by which a sense of beauty is conveyed by man to metal, is amply illustrated by grates, fenders, fountains, vases, and statuary, that issue from these works. None, probably, look more to the culture of their men, or have made greater provision for those with yearnings after the beautiful and true, than the Coalbrookdale Company. They have placed before them elements of knowledge needed in their profession; and to the training of the hand they have added opportunities for that of the head and of the heart. Side by side with the works, are schools, a church, and a literary and scientific institution, the latter princely both in structure and appearance. Such advantages give heart and hope: they serve to sweeten daily toil, and to make men intelligent citizens as well as clever workmen.

## KENNET & AVON EXCURSION - 24th JULY

Circulars have already been sent to members and some seats are still available on the coach.

W.M.

# BOOK REVIEWS

CRAFTS, TRADES AND INDUSTRIES - a book list for local historians by Andrew Jewell. Pub. National Council of Social Service. 24 pp. 1964. Half-a-crown.
This booklet mentioned in the last issue of the Newsletter, gives sources of information about the tools, processes, development and working conditions of the traditional crafts, trades and industries. Although crafts predominate, readers will find many useful references, especially amongst the sections headed General, Brickmaking, Charcoal Burning, Metal Crafts, Milling, Pottery, Stone Working and Textile Crafts.

In the foreword, a useful paragraph states that the National Film Archive, 81 Dean Street, London, W.1. welcomes enquiries from those undertaking research work into crafts, trades and industries and who would gain from seeing films showing working processes, etc. The N.F.A. has many films recording past, or fast dying, crafts, trades and industries.

G.N.C.

THE STORY OF THE MUSHETS - F.M. Osborn. Pub. T Nelson & Sons Ltd. 1952. 195 pp. 32 photos & plates.
David Mushet 1772 - 1847 spent his whole life as a metallurgist studying the various ingredients for iron making (assaying) moving from the Clyde Iron Works, through the Calder Iron Works, both in the Clyde Valley, and the Alfreton Iron Works in Derbyshire, to Coleford in 1810, and the Whitecliff Iron Works. John Percy, lecturer on metallurgy at the Royal School of Mines, says in his classical work 'Metallurgy' of 1869, "Another remarkable example is furnished by the black band iron-stone of Scotland, which has contributed enormously to the wealth of the Scottish iron-masters. Its nature and value were first discovered about the year 1800 by the late Mr. Mushet, to whom we are further indebted for much valuable information concerning the history of the development and progress of the smelting and manufacture of iron in Great Britain. Mr. Mushet moreover made numerous and important experimental investigations on the subject of the extraction and working of iron, which, considering the period when he lived and the incessant demands upon his time in the management of business connected with the ironworks, were in a high degree creditable and praiseworthy."

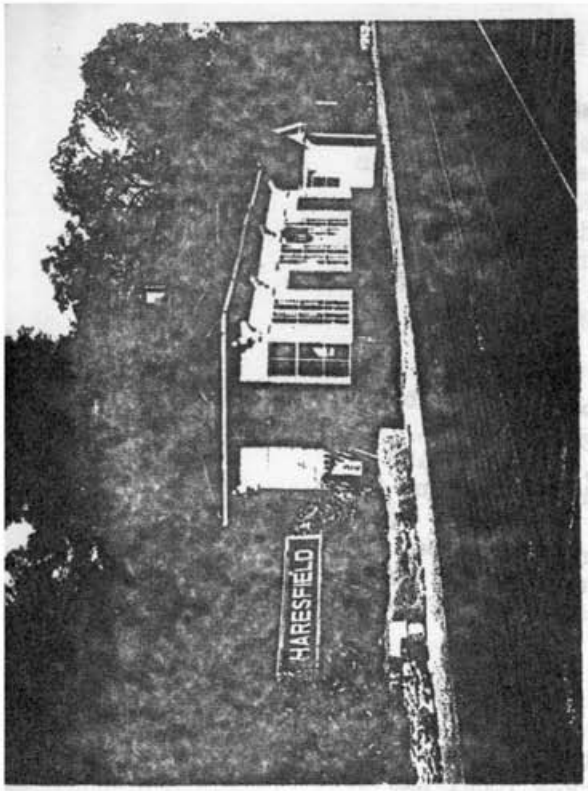
Robert Forester Mushet 1811 - 1891, one of David's sons, was born at Coleford and continued his father's work, by inventing ordinary cheap steel, and toughened steel for tools. The American metallurgist James Swank wrote in 1893 "Bessemer the Englishman, invented in 1855 the process which bears his name and is the flower of all metallurgical achievements, - a share in the honour of his invention, however, being fairly due to the co-operating genius of Robert F. Mushet .... it was not

until 1858 that complete success was achieved by Bessemer in the conversion of cast iron into cast steel. Without the assistance rendered by Mr. Mushet, Mr. Bessemer's invention would not have been of much value .... the Kelly Pneumatic Process Company in America resolved to acquire the patent of Mr. Mushet for the use of spiegeleisen in the conversion into steel of the raw materials used in the open hearth process (Siemens) and consider that the invention of Mr. Mushet is indispensable."

The author of this book was chairman of Samuel Osborn and Co. Limited of Sheffield, who made the toughened steel, then, from materials secretly mixed at Dark Hill, Coleford and despatched there by tortuous routes to avoid detection. To those who know the Forest, or wish to know more, this book, which is pretty easy reading, makes it abundantly clear how very important is the work of these two men. Surely the few remains of their ironworks in the Forest ought to be recorded before it is too late ?

OLD MENDIP - Robin Atthill. Pub. David & Charles 1964. 204 pp. 43 photos and plates. 7 drgs. 7 maps.
Really the blurb on the book jacket puts the coverage of this book quite neatly. "Robin Atthill is a true local historian for he is interested in everything that lies around him; and which speaks some word of the past." Here in that extraordinary corner of England between Bath and Wells come vanished mansions and cottages; John Billingsley the agricultural improver and his work; paper mills past and present; the great story of the Fussells and their ironworks; beacons; turnpike roads; toll-houses and mile-posts; the disused Somersetshire Coal Canal and the never-completed Dorset and Somerset, planned with lifts instead of locks; little railways and old inns; nameless rivers and forgotten pools. Here is interest for all who know or wish they knew the Mendip country. Even those who know it well will find much new to them in "Old Mendip". It is a book, too, for the industrial archaeologist, for in the valleys and on the hills of Mendip lie fascinating traces of manufacturing and transport history." All this is true enough but for the stranger this book can be hard going as the author, in his enthusiasm, races ahead and, to savour the wealth of information contained therein, it must be read slowly with a one inch ordnance map alongside; but then this is one of the difficulties of including a variety of topics in one volume. Even so it does make one ask whether our Society could produce a similar book as a joint effort.

Ian Parsons.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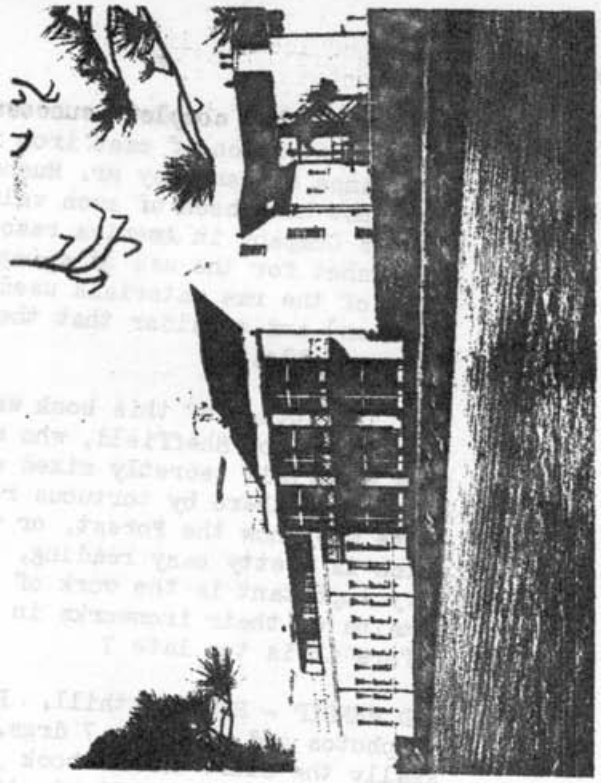

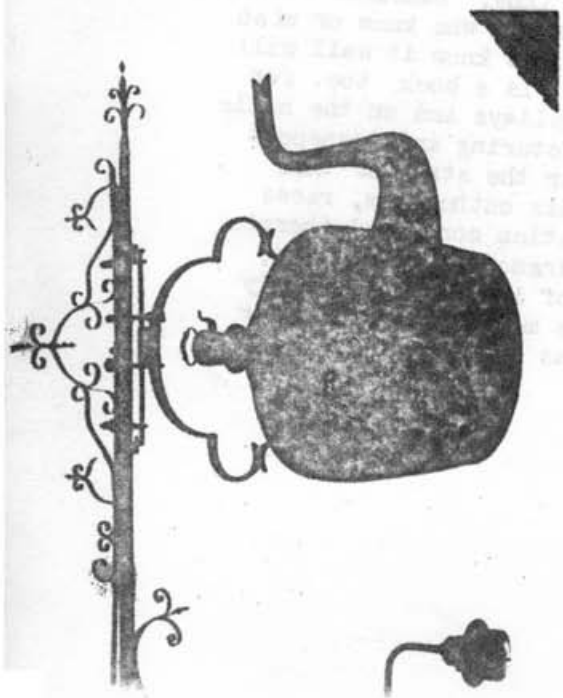

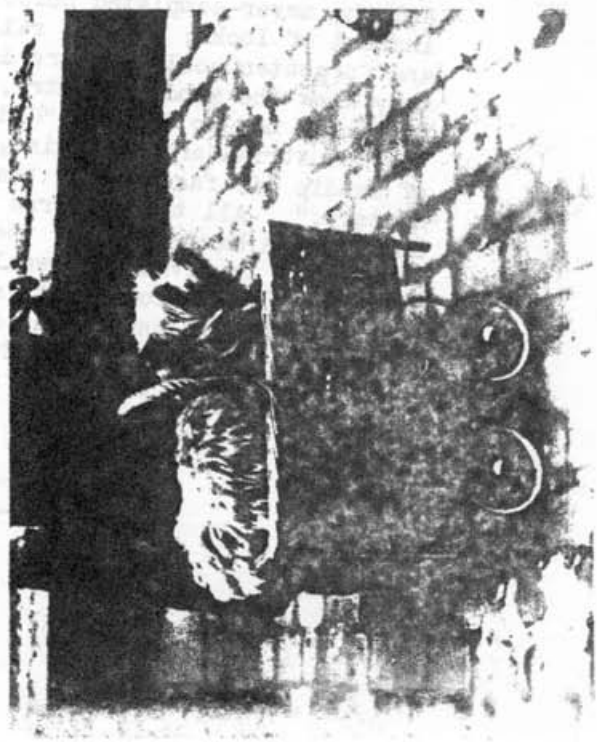

## PHOTOGRAPHS

1. The Nailsworth Kettle. Photo: W. Marsh

(see page 17).

2. Haresfield Station. This ex-Midland Railway station was finally closed to passenger traffic on 5th January 1965.
Photo: A.S. Apperley.

3. "Dixie". This learned animal has attended most of our Stroud lectures and has been busy on several private "digs". Students of road transport may not accept his carrier as a natural development of the dog-cart.
Photo: A.S. Apperley.

4. The New Passage Hotel. Photo: W. Marsh

(see page 12).

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## SUBSCRIPTIONS AND ANNUAL GENERAL MEETING

Subscriptions are due on 1st September and members are asked to send their 10/6 cheques or postal orders direct to the Hon. Treasurer, Mr. R.H. Pullan, Greenacres, Painswick Road, Brockworth, Gloucester. A proposal is to be put forward at the A.G.M. that there should be a new family subscription of 15/- for those who live in the same household and only receive one copy of the Newsletter. Members who are affected by this change should wait until they receive notice of ratification by the Meeting. The A.G.M. will take place in Stroud on FRIDAY, 24th SEPTEMBER 1965 and it is hoped to combine this with a film show. Details will be circulated later.

W. Marsh.

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## LETTERS IN THE PRESS

Illustrating the widespread interest in I.A., letters with photographs from readers in Devon, Northumberland and Somerset have recently been published in "The Daily Telegraph".

One photograph showed a cast-iron canal bridge with a very graceful balustrade in a rural setting near Coventry. Although not mentioned in the letter this was one of the standard bridges built by Telford on the upper part of the Oxford Canal.

A follow-up letter shows the first block concrete bridge to be built in England, spanning the River Axe at the eastern end of Seaton in Devon. It was built in1877 to the design of a London civil engineer.

The final photograph illustrates a church bench-end at Spaxton, near Bridgwater, and shows a fuller at work surrounded by a knife, shears, fuller's comb and a three-pronged teazle holder.

G.N.C.

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## S L I D E  L I B R A R Y

Your committee has decided to build up a library of slides for lecture purposes and this has been financed by a grant from the University of Bristol Extra Mural Studies. Good colour slides of suitable Gloucestershire subjects are required and a payment of 2/- each will be made for each one accepted. Alternatively, with the owners' co-operation, copies can be made at the Society's expense. Black and white slides or negatives from which slides can be made are also sought after.

In due course a list of subjects covered will be published and the collection will be available from me for loan over short periods.

G.N.C.

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# THE STONE INDUSTRY OF THE SOUTH COTSWOLDS.

The colite limestones of the Stroud District have been used for almost every building purpose: floors, windows, doorframes, roofs, and in the walls not only the blocks of stone themselves but, after burning, the lime mortar in which they are set.

The stone was obtained in three ways - 1) by quarrying, 2) by driving adits and 3) by mining.

Most of the large quarries had trucks running on rails to convey the stone from the face to a range of open fronted huts. Here the large blocks were sawn, water constantly dropping onto the saw to prevent it from overheating. Inside the huts worked the banker masons. Each banker consisted of a square bench of stone topped by a single slab upon which was placed several layers of sacking to prevent damage to the soft stone being worked. Here were produced a multitude of ornamental stone finishes, lintels, mullions and the simpler carvings such as roof finials. With the exception of saws, a mason's tools - and these might weigh as much as 2 cwt. - have hardly changed since Medieval times.

At one time, probably the latter years of the 18th century and early 19th century, small quantities of building stone were obtained by means of adits, sometimes opening from a bank and sometimes from a steep shaft. These opened into a single chamber up to 10 ft. high, the roof being often less than 2 ft. below the ground outside. Many were probably made by people acquiring small plots of land and building a house from stone obtained on the spot. In at least one instance the chamber extended under one corner of the house.

The stone mines almost invariably open out from traditional quarries, and were probably more numerous than we now believe. Though less pleasant to work in, they had certain advantages over more traditional methods; good stone was available without the encumbrance of unwanted overburden, lifting apparatus could be installed nearer to the rock face than usual , and stone could be stored 'green' and worked to order. Some mines may be too small to be worthy of the term, yet at least one near Nailsworth has galleries totalling approximately a mile in length. This one remained in use till the late 1930's when blasting was attempted with disastrous results. Its final bout of activity was the output of stone rubble used in the making of airfield runways during the war. The driving of a gallery involved first the breaking up of a layer of stone beneath the roof. Before too much useable stone had been levered out, diagonal roof struts were inserted leaving the 'floor' free for further extraction. These roof struts, like the cranes, barrows and other wooden objects, are almost totally decayed and should not be touched -

roof falls are unlikely, but even small ones could involve over 100 tons of rock.

In the traditional type of quarry, the disposal of stone rubble was no problem. A kiln was built and it was burnt for lime. Successive layers of stone and poor quality coal were thrown into the open mouth of the kiln. The heat generated in burning reduced the stone to lime which was raked out at the bottom. In recent years there has developed a market for reconstructed stone, and rubble is now crushed and mixed with cement for the manufacture of these blocks. Very few lime kilns remain standing in the Stroud district.

Dry stone walling is another aspect for study. Techniques vary from one craftsman to another, and also according to the character of the raw material available.

Roof tiles were obtained at Througham and Tetbury. Certain stone beds have the tendency to split to the desired even thickness with the minimum of effort. But no local roofing stone could equal for weathering quality that of the 'pendle' beds which were mined near Stonesfield in South Oxfordshire. This stone had, however, to be exposed to severe frost before it could be worked.

The 19th century was the great age of local stone workings and by 1900 there were more stone structures to be seen in the neighbourhood than at any time before or since. Today with the exception of material for the restoration of Gloucester Cathedral, virtually no building stone is quarried in this area and it is almost impossible to find a banker mason at work In July 1964, the stone-masons class at Stroud Technical College was closed due to lack of numbers. One ponders on the future character of the Cotswolds, a rolling landscape of bricks and concrete ? Horrid thought !

L.F.J. Walrond.

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## TWO DAY EXCURSION TO SOUTH WALES
## 25/26 SEPTEMBER 1965

Since the last circular has been sent out more details have been made available. In view of the limited support for this trip we cannot run to the expense of sending another circular to everyone. Those who have shown interest are listed below and will be sent final details :-

Messrs. Bick, Clayton, Crawford, Harris, Marsh, Pullan , Reinhold, Robins, Strange, Townley, Walrond and Western.

The cost will be up to £6 each depending on numbers. The leaders will be Ray Bowen and Gordon Rattenbury, the acknowledged experts

in this field. The following sites have been suggested for inclusion in the itinerary :-

a) disused Glamorgan canal with locks & aqueduct, including the Aberdare branch.

b) lines of six pre-1923 railway companies.

c) Abercynon canal with basin where Trevithick's locomotive terminated its run from Merthyr.

d) Penydarren tramroad.

e) Quakers Yard with tramroad, bridges, viaduct, etc.

f) Merthyr ironworks and Pentrebach

g) General survey of tramroads and industry at Dowlais.

h) Aberdare ironworks

i) Hirwaun ironworks.

j) Melin Griffith tin works at Cardiff with beam engine pump.

We hope to travel by train to Cardiff and thence by coach around the valleys. Overnight accommodation will be arranged in Cardiff. All of you who met Ray Bowen on his last visit to Stroud will have no doubt that his great enthusiasm will enable us to enjoy a most informative and lively weekend. There is no restriction on numbers and I shall be pleased to hear from any new supporters provided they contact me before the end of July.

W. Marsh.

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BRISTOL COLLEGE OF SCIENCE & TECHNOLOGY

Ashley Down, Bristol 7.

CENTRE FOR THE STUDY OF THE HISTORY OF TECHNOLOGY

Bulletin No. 1 of the survey of the I A. of the Bristol region gives a classification of monuments to help people assisting in the survey to decide on particular tasks. The numbers refer to the classification in the filing system of the Centre but additions can be made. An asterisk denotes a declared interest by a member of the survey: the organisers will be glad to put in touch people interested in the same subjects.

cont. overleaf .....

4.10. Heavy Industry (Coal, Iron, Metals, Engineering, etc.)
* 4.11 : Warmley Spelter Works
4.12 : Redcliff Shot Tower and Factory
4.13 : Port of Bristol Authority Workshops
* 4.14 : Keynsham and district Brass Works, etc.
* 4.15 : Coal Mines
* 4.16 : Iron Mines and Works
4.17 : Quarries

4.20. Light Industry (Textiles, Glass Food, etc.)
4.21 : Great Western Cotton Factory
* 4.22 : Glasshouses
* 4.23 : Sugar Refining
* 4.24 : Leather processes
4.25 : Snuff Manufacture
4.26 : Lime and Brick Works
4.27 : Pottery manufacture
4.28 : Soap Manufacture

4.30. Power I (Wind, Water, Electricity)
4.31 : Windmills
4.32 : Water-wheels

4.40. Power II (Steam and Internal Combustion)
4.41 : Bathurst Bridge Engine
4.42 : P.B.A. Tangye Engine
4.43 : Coalpit Heath Haystack Boiler

4.50. Industrial and Commercial Buildings
4.51 : Warehouses
4.52 : Shops (frontages and fittings)

4.60. Transport (Roads)
* 4.61 : Toll Houses
4.62 : Milestones

4.70. Transport (Rail)
4.71 : Mangotsfield Tramway.

4.80. Transport (Water and Air)
4.81 : Bristol Docks (including fittings)
4.82 : The Severn Trow "Safety"

4.90. Domestic (Industry, crafts, fittings)
4.91 : Household equipment
4.92 : Doorknockers
* 4.93 : Street furniture

(Members of our Society engaged on similar surveys might find it worth their while to contact the Director, Dr. R.A. Buchanan.
Editor. )

# SOME ASPECTS OF INDUSTRIAL ARCHAEOLOGY. PART 2.

by Senior Girls of Upfield Preparatory School,
Paganhill, Stroud.

## CIDER MILL AT HAMMOND'S FARM, Old Painswick Road, Stroud.

- based on an essay by Penny Burcombe.

The mill was last used about 20 years ago, though it appears a similar one is still used by the Monks at Prinknash Abbey and there is another at Upton-St.Leonards; doubtless there are others.

The cider mill at Hammond's Farm reputedly dates from the beginning of this century and consisted of an octagonal wooden central rotating pillar 1' 9" in diameter, attached to a large beam at the top and pivoting on a stone base containing a circular trough at the base. This stone base was 7' 8" in diameter, 2' 0" high, the trough being 1' 11" wide at the top sloping gradually on one side to a width of 1' 0" at a depth of 9". To the upright was attached, by means of a pole, ( 9 sided gradually becoming smooth towards the end), a large granite roller 1' 0" thick with horizontal grooves 3" apart. At the end of the pole that passed through the roller was a curved piece of iron 4' 10" long attached to an overhead wooden yoke by means of which the horse pushed the roller. Behind the roller ran a radial bar 3' 8" long with a scraper to remove surplus apple pumice from the sides to the middle of the trough.

For use, apples were placed in the trough and the horse slowly drew round the stone roller gradually converting the apples into a pulp or pumice. Wooden shovels were then used to remove the pumice to a press by means of which the juice was extracted. No trace of the press remains. There is a tradition that there was some law that only a certain amount of cider was to be made each week, and that this work was done by men specially employed for the purpose.

The cider mill at Hammond's Farm has now been dismantled but some of the parts have been preserved on the premises.

N.B. A considerable number of these cider mills at one time existed in the county as witnessed by the almost indestructible bases now in use as garden ornaments. In few cases has the woodwork survived and fewer still remain in use.

It is an odd fact that this type of mill appears to be absent from a wide area of Somerset in spite of the greater number of cider orchards there.

L.F.J.W. (see over ...)

(Work was done by several other pupils on other local objects, a turnpike house, lamp standards, the verandah at the Shambles, the iron bridge at Stratford Park, etc. The information is being kept but many of the illustrations are inadequate as they stand. This, and the lack of accompanying text unfortunately render their reproduction in this Journal impossible.)

## AN EARLY GLOUCESTERSHIRE RAILWAY

One of the first horse-operated tramways in the county was the 'Gloucester and Cheltenham Railway'. It has received scant attention from local historians, and this article is an attempt to give a very brief account, making use of some recent research.

The chief impetus behind the building of the tramway was the rapidly-expanding town of Cheltenham Spa and the shocking state of the turnpike road between it and the inland port of Gloucester. Such a line would enable the price of coal in Cheltenham to be reduced by one-third, as well as provide ready transport for other goods. An important source of traffic in the opposite direction would be stone from the Leckhampton Hill quarries, for which a branch line about two miles long was projected.

An Act of Parliament authorizing the line was obtained in 1809, and the first stone laid by the Earl of Suffolk on 21 November of that year. The engineer in charge of construction was John Hodgkinson, who had been connected with the Gloucester-Berkeley canal proposals and who also built the Brecon-Hay tramroad during the following few years.

The branch from the terminus in Cheltenham to Leckhampton Hill was opened on 2 July 1810 and the main line to Gloucester, before schedule, on 3 June 1811. To mark the occasion there was a public dinner at the Assembly Rooms in Cheltenham High Street (where Lloyds Bank now stands).

### The Route Described

Although several other routes had been surveyed (including one via Hucclecote, Brockworth and Badgeworth, ending near Sandford Mill), the one chosen ran for most of its distance along the south side of the present main road between the two towns. Starting at Gloucester quay it coursed south-south-east for about half a mile, then, turning through almost ninety degrees, crossed Barton Street at the present level crossing. It continued eastwards, across Barnwood Road, to meet the main road at Longlevens. From here,

apart from short cuts where expedient, the line followed it on the south side as far as Hayden Court, near Staverton Bridge. When the line was built the turnpike road swung left at the Plough Inn, over Staverton Bridge, and made its way to Cheltenham via Hayden Hill and Arle (this is now a comparatively unimportant route but is still referred to as the 'Old Gloucester Road' by many local people). The tramway left the turnpike road at the Plough and followed a more easily-graded route, mainly across open fields, via Benhall and the present Lansdown Castle, to a wharf at the Knapp Toll Gate, opposite the site of the present Cheltenham gasworks. Shortly afterwards a new turnpike road was built from Cheltenham to the Plough Inn, and this followed alongside the tramway; thus the road came later than the tramway, and not vice-versa, as is so often assumed to be the case. In fact the tramway company even bought shares in the new turnpike trust.

The Leckhampton branch left the main line near the site of Lansdown station and made its way over fields to the foot of the hill, where there were lime kilns and a stone depot. Beyond this it ascended to the hill-top via three gravity-operated rope-worked inclines, and the building of this last section was financed by C B. Trye, F.R.S., who owned the hill. Subsequently Queen's Road, Tivoli Place, Andover Road, Norwood Road and Leckhampton Road were built alongside the tramway. The original route, although starting at the Severn quay at Gloucester, was later modified to provide a connection with the docks of the Gloucester-Berkeley canal, which was not finally completed until 1827. It is worth mentioning that in 1811 another tramroad was proposed, starting from quarries near Hawling (on the Cotswolds) to join the Leckhampton branch near the site of the Malvern Inn. It would have been about nine miles long with continuous heavy gradients and a half-mile tunnel at Hawling. A detailed survey was made but this ambitious project soon evaporated.

The Tramroad

Hodgkinson was probably responsible for the adoption of a 3' 6" gauge, a common choice in the tramroad era. The nominal gauge is the measurement between the inside faces of the L-shaped flanged plates which formed the road, the track of the flangeless wagon wheels being about 3' 11". The plates were of wrought or cast iron, one yard in length, and at least two different patterns were used, judging by surviving examples. They were supported at each end by a heavy stone block into which a hole was bored to receive a wooden plug. A four-inch-long iron spike was driven into this and its head served to form a location in a rectangular notch cut in the end of the plates. Some of these stone sets are still visible on Leckhampton hill, and it is interesting to note that the joints were staggered, one plate with respect to its parallel neighbour. The plates were evidently not quite up to the task, for in 1838 replacements cost nearly £160, corresponding to approximately 1,000 plates, or one in every thirty-five.

Free rides, even for the drivers of the horses, were frowned on. Rule 7 of the Bye-Laws states that "if any driver of a wagon seen riding thereon or shall put his horse or horses beyond a walking pace shall for either offence forfeit or pay the sum of 10s." This rule was probably designed to prevent horses trotting on downgrades with the consequent risks of collision or derailment. It is reported that one horse never pulled more than one wagon at a time, but this seems unlikely as the gradients were not severe, and it was a common practice on other tramroads for several wagons to be coupled together. The maximum permitted laden weight of the wagons was 2 tons 16 cwt. Passing-places were provided at every half-mile for the convenience of loaded wagons travelling in opposite directions, and a post marked 'D' stood midway between these points to prevent any arguments as to who had to reverse, but if empty wagons met loaded ones the former were obliged to retreat irrespective of whether or not the post had been passed.

Finance and Absorption.

The estimated costs of the project, made by Hodgkinson, totalled £25,261, but the final cost was approximately £40,000. As a rule the tram wagons belonged to those whose names and allotted numbers, together with the wagon's unladen weight, were displayed on each side. The Tram Road Company, however, although not legally a carrier, hired out trams as required; in 1838 repairs to these cost £151 and revenue amounted to £242. Maximum rates were one penny per ton per mile for road-repairing stone, threepence for building stone, coal and other minerals, and sixpence for goods and general merchandise. In 1838 26,215 tons of coal, 6,897 tons of road stone and 2,762 tons of 'Sundries' were carried by the main line, and no less than 22,938 tons (presumably stone) by the Leckhampton branch. This brought in £2,916 which, together with rents, hire of trams, wharfage and other charges, gave a total income of £3,549, sufficient to pay nearly 6% interest.

In 1836 the Tram Road Company shares were bought up for £35,000 by the Birmingham and Gloucester Railway Company and the Cheltenham and Great Western Railway jointly. In the early days of steam railways it was common practice to buy up old tram roads to use part or all of their routes for the new line. This did not happen here, and the take-over was largely to placate the Earl of Suffolk, an important tramroad shareholder and landowner. Rather surprisingly the tramroad survived for nearly twenty years after the completion in 1840 of the new main line. Indeed, the new joint-owners built a branch from the tramroad near Barton Street turnpike, Gloucester, into the new railway goods yard to facilitate trade with the docks. Later, in about 1850, when the 4' $8\frac{1}{2}$" gauge lines were also extended to the docks, the tramway still continued in operation, although by then some of its extensive branches in that area had been abandoned. But traffic inevitably diminished, and by 1859 had fallen to such an extent that an Act

of Abandonment was obtained and the line and all materials sold by public auction in 1861.

## The Use of Steam

Were steam locomotives ever employed to replace horse traction ? There are reports of experiments being made, including an announcement in the Gloucester Journal of 17 January 1825 that "A locomotive engine on an entirely new principle will be exhibited in the course of a fortnight on the Cheltenham & Gloucester Railroad". If the trial took place it was presumably a failure, as no sequel was recorded. The Company persisted in its efforts and in about 1831 an 0-6-0 engine called the 'Royal William' was put through its paces; according to independent eye-witness accounts it never got further than Longlevens, mainly because of the complete unsuitability of the permanent way. The engine was never used in regular service, as some authors have suggested. What became of it after the trials is a mystery, although it is believed to have rested for some years in the Company's yard in Park Road, Gloucester. Eventually it may have been sold and used elsewhere.

Two interesting bronze medallions have survived and are on view in Cheltenham Museum. They depict a six-wheeled engine pulling a "stage-coach"-type carriage and a mineral wagon. Round the reverse is written 'Gloucester and Cheltenham Railway', and in the centre 'Royal William locomotive class No. 1'. The second medallion is similar but quotes class No. 2. It has been suggested that these were tickets issued to passengers, but it is more probable that they were struck for the occasion of the locomotive trials. Passenger traffic was never catered for to a serious extent, although in 1831 Cheltenham was complaining of vagrants who entered the town via the tramway.

## What Remains Today

Not surprisingly the route has been extensively built on in both towns, but its course is indicated by roads or streets constructed alongside practically the whole length. The Leckhampton inclines were not abandoned until 1926 and can easily be traced from the hill-top past Tramway Cottage in Daisybank Road to the stone depot (now a caravan works). A public house in Norwood Road is still called the 'Railway Inn'. Near Lansdown station and opposite Libertus Road is a short length of embankment which carried the tramway towards Lansdown Castle and thence to Gloucester. The very wide grass verge on the side of the main road at Benhall marks the course of the line. At Staverton Bridge it took one of several short cuts, going behind the Plough Inn and a low Cotswold-stone building, reputedly stables for the horses. This building was demolished a few years ago but the foundations are still visible. Beyond the site of Staverton aerodrome the route ran over undulating ground; a double hedge

and embankment still exist where a tributary of the Hatherley brook was crossed. Several stone sets and a broken tram plate were recently discovered during road-widening operations near this point. The last real trace before Gloucester is near Elmbridge Court, where the main road follows a sinuous course. The tramroad took another short cut and its track is still visible across a field.

Beyond the Barnwood Road crossing the line went over Wootton brook by means of a long embankment, now used as a footpath. Beyond here the course is flanked by British Railways locomotive sheds (now abandoned). There was then a deep cutting (since filled in) with an 'over bridge', and beyond this the course of the line is a footpath which leads directly to the level crossing in Horton Road. The main-line railway junction is still known as 'Tramway Junction'. From here to the docks almost all traces of the route have disappeared, although part of the tramway yard and depot buildings still exists near the junction of Brunswick Road and Park Road. Several contemporary paintings and lithographs showing the tramroad have survived, but unfortunately there are no known illustrations of the wagons used on the Gloucester to Cheltenham section. These were reported to have been of a peculiar design, unlike the Leckhampton hill wagons which were of conventional type and survived until the final closure.

An unexpected connection with the old line is found in Westbury-on-Severn churchyard, where one can read this epitaph:

"In Affectionate Remembrance of
William Wilkins who departed this
life 21st July 1867 aged 81 years.
He was for forty three years a
faithful servant of the Gloucester
and Cheltenham Tram Road Company."

D. E. Bick

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## L E C T U R E S  I N  S T R O U D

### INDUSTRIAL ARCHAEOLOGY AND THE CHURCH by Michael Rix.

This lecture was confined to iron castings, the earliest of which has been found in the form of tomb slabs in Sussex. (See "A history of Cast Iron in Architecture" - Gloag & Bridgwater). The oldest are in the churches of Burwash and Crowhurst (16th c.)

and 40 slabs in Wadhurst church (17th c.). Drawings of the first two can be seen in "Decorative Cast Ironwork in Great Britain" by R. Lister.

The interest now passes to the West Midlands where there are tomb slabs in profusion, especially at Bridgnorth (St. Leonard's), Leighton, Onibury and Burrington near Ludlow (all 17th c.). Near the last church lived the Knight family of ironmasters who had furnaces in the area. There are also later slabs at Madeley (due to a pit disaster) and Bilston, the latter also having a cast iron foundation stone dated 1826 with the architect's name, Francis Goodwin.

Tombs in the West Midlands are more numerous than one would expect, for example Stourport, Madeley, and the fine memorial ten feet high at Wellington. Most were crowned with at least one urn. In Lancashire at Lindale is the huge obelisk to John Wilkinson.

Cast iron columns were used to support galleries, the earliest known was by Dodds at St. Anne's, Liverpool (1770) which no longer exists. Next are Wellington (1790) and St. Chads, Shrewsbury (1792) both by Steuart, followed by a remarkable group in Liverpool by Rickman; St. George's, Everton & St. Michael's Toxteth Park (see Turpin Bannister's article in "The Architectural Review", April 1950). These were the prototypes for every Non-Conformist chapel and form an interesting subject for further research.

Furniture includes a pulpit by John Wilkinson at Bradley nr. Bilston, the only remains of a complete C.I. chapel; lecterns at St. Thomas's, Dudley and Attenborough, Norfolk; window tracery at Adderley Salop; Royal coats of arms at Stoneleigh (Warwickshire), Castle Bromwich and Weston-under-Lizard; a twenty foot high door at Great Packington nr. Coventry; strongbox by the Coalbrookdale Co. in Moreton Valence, Glos; lamp brackets on Stroud Parish Church and, finally, bells at Chalford, Glos.

Heating apparatus includes Tortoise stoves and the vast cathedral finned heaters, one of which in Gloucester Cathedral has the lettering mixed up. At Ombersley, Worcs., there is a heater shaped like a church spire.

Finally, there are several fine examples of epitaphs, especially in Ely Cathedral and at Bromsgrove, both of which commemorate men killed in railway accidents. At Broseley, Salop and at nearby Benthall are verses to a bargee and a trowman.

G.N.C.

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Ian Rogerson
County Technical Librarian.

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