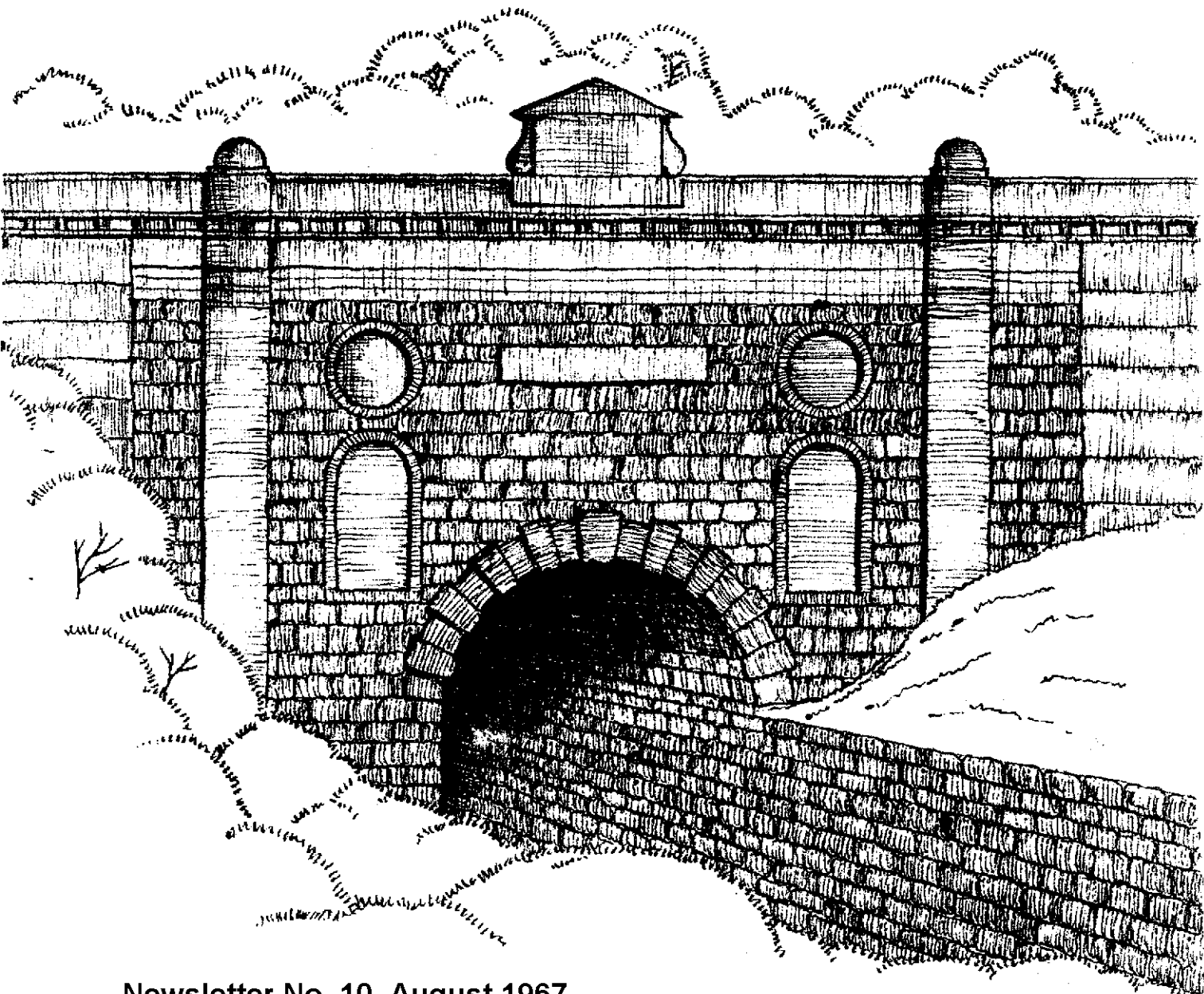


THE NEWSLETTER OF  
THE GLOUCESTERSHIRE  
SOCIETY FOR  
INDUSTRIAL ARCHAEOLOGY



Newsletter No. 10 August 1967

# GLOUCESTERSHIRE SOCIETY FOR INDUSTRIAL ARCHAEOLOGY

NEWSLETTER NUMBER 10

AUGUST 1967

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## EDITORIAL

Many readers will no doubt have read the 'field guide' written by Neil Cossons on industrial remains in the Bristol region and published this year. Our Society has had request for similar information concerning the rest of the county; all we can do is to refer them to 'The Industrial Archaeology of Southern England' which has only two pages in the gazetteer devoted to Gloucestershire, and to various specialist books. This Society would therefore fill a gap in our published knowledge if it could produce a booklet divided into sections similar to the Bristol one. Each section could perhaps be written by an expert in that particular subject.

Referring to full-length books on industrial archaeology, of which there is a steady flow at present, it is always difficult to decide when to publish the results of one's research. Some maintain that you should try to publish as quickly as possible, otherwise there is always the possibility that an accident could mean that the book would never be printed at all.

Others consider that one's research should be as complete and accurate as humanly possible before one considers publishing. This might mean that we should have to wait a considerable time before records of particular industrial sites are available.

Those who rush into print naturally hope that reviewers and others will correct their errors and note their omissions so that the second edition will be a reasonably accurate and complete essay on the particular subject. One feels that it would be preferable to wait for this second edition but of course if everyone did this there would be no second edition! Perhaps a way out would be for the publisher to include a postcard with each first edition book. This could be returned by the purchaser and, at a suitable moment, a supplement correcting errors and adding omissions could be posted to all who bought the book.

To conclude, could I please again plead for members to send articles or notes for the Newsletter. The more I receive the more often can the Newsletter be published.

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The editorial does not necessarily express the views of the Committee.

Contributions and letters for the next issue will be welcome and should be sent to :

Hon. Editor, G.S.I.A. Newsletter, G.N. Crawford,  
c/o County Architect's Department, Shire Hall,  
Gloucester.

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## PROCESSES IN HAND-LOOM WEAVING

Government 'Blue Books' are probably assumed by most people to be dull reading, but in fact the older ones often contain much material of human as well as technical interest. A good example is W.A. Miles' REPORT ON THE CONDITION OF THE HAND-LOOM WEAVERS OF GLOUCESTERSHIRE, printed in 1839. Miles had been appointed to make his investigation by the members of a Royal Commission for 'Inquiring into the Condition of the Hand-Loom Weavers in the United Kingdom', following the depression and unemployment which had been caused by the migration of trade to the power-loom in the north of England.

As may be supposed, the Report contains much of value for social history, concerning the conditions of workers in the cloth industry, many of whom were interviewed as well as representatives of the employers. However, there is also much of interest to the industrial archaeologist. On pages 368 to 374 the numerous processes in the manufacture of cloth are described in detail : sorting and scouring of wool, dyeing, twillying, beating and picking, oiling, scribbling, carding, spinning, reeling, warping, sizing, weaving, washing, burling, felting, roughing and mosing (in a gig-mill with teasles), shearing, patenting in hot boilers, drying, picking, drawing, marking, brushing and pressing. Out of 21 different classes of worker employed, only four had been able to maintain their rate of wages through the slump: sorters, engine-men, roughers, and millmen. One of the tables gives the names of individual mills, with the number of power-loom (steam and water) and hand-loom. The only manufacturers at this time possessing any large number of power-loom were T. & S. Marling of Ham Mills (45) and Stanton & Sons of Stroud (24). Of 43 manufacturers listed, only 11 had any power-loom; but these had only been introduced in 1836. Most of the power-loom hands were women and children. The reporter proceeded from parish to parish in the cloth-manufacturing districts, describing the state of the industry and the unfortunate workers. An interesting section (pp. 434-436) deals with power-loom and quotes the opinions of different manufacturers as to the value and prospects of this new development, about which many still had doubts.

A copy of Miles' Report can be consulted in the library of the County Records Office.

Irvine Gray.

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DUE ACKNOWLEDGMENT SHOULD BE GIVEN TO ANYONE PUBLISHING  
AN ARTICLE, OR PART OF AN ARTICLE, INCLUDED IN THIS NEWSLETTER.

## RESIGNATION OF THE SECRETARY

Many members will have heard by now that once again the Society has unfortunately lost its Secretary, as Mike Eastwood left on July 1st to join one of our founder members, Mr. G.H.L. Andrew, at Harrogate. In spite of this large turnover in secretaries we have been extremely lucky in those who have served us and certainly Mike was no exception. He tackled all the many and varied jobs which fall on the shoulders of the secretary with great vigour and enthusiasm and members will always remember his masterly organisation of the society's excursions and visits for two years, to say nothing of the hundreds of slides he must have projected at our lectures. We shall all miss Mike and wish him all the best in his new job. Dr. T.E. Edwards, also of ICI Fibres, has kindly agreed to act as secretary in Mr. Eastwood's place, so I hope you will all support him in his difficult task.

Neville Crawford

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## DIS-ORGAN-ISED

The Society visit to the Wurlitzer organ at Buckingham reminds one of our members of a most embarrassing yet reputedly true story.

A certain very famous church organist and composer who must remain nameless being present at a gathering of some considerable importance was invited to play the National Anthem at the end of the function. He had never seen this particular instrument before; let alone tried it. It proved to be a Wurlitzer - an asset in that not only had he a fine range of powerful chords at his disposal but he could also precede it with the customary roll of drums.

What really went wrong has never been recounted. There may have been an electrical fault, a damaged piece of mechanism or he might even have pulled the drum stop a little too far. For the first time ever our National Anthem opened not only with a drum roll but a simultaneous barrage of steam engine noises, train whistles, horses hooves, custard pies - the lot ! He has our sympathy.

Lionel Walrond

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## MILLS OF THE SEVERN VALE

### PART I - CLEEVE HILL TO TEWKESBURY

These mills all stand on streams rising on the Cotswold scarp and flowing into the Severn, though below Gloucester they act as feeders to the canal. The most northerly of these scarp - Severn streams is the Tirlle Brook, which rises on Nottingham Hill above Bishop's Cleeve. It had only one mill on it, and that was at Oxenton, just where the road to the church takes a left-hand turn. The house is a pleasant low stone one facing up to the church but the mill was demolished about 1930, and the former pond is now a garden. An old worn millstone is on the lawn in front of the house. It is the combined waters of the Tirlle Brook and the River Swilgate which run through the field on the west side of Tewkesbury Abbey, and they join the Mill Avon, an embanked channel containing more than half the water of the Avon, starting from the weir above King John's Bridge and joining the Severn opposite the Lower Lode Inn. The water which spills over the weir, except after a long drought, follows the original natural course of the Avon. On the artificial Mill Avon stand two mills, no doubt the successors of the two Saxon mills owned by King Edward the Confessor. The Borough Flour Mills owned by Messrs. Healing, are at first glance entirely modern. They consist of brick buildings of factory type, the oldest of which are late Victorian, but tucked away on the south western side, looking across the great expanse of the Severn Ham, is a much older dark brick cottage, now used as offices. This may have been the former miller's house when the mill was a water-mill, for the present day buildings are sure to occupy the same site. Next on the Mill Avon comes the famous Abbey Mill, often known as Abel Fletcher's Mill since the publication of 'John Halifax Gentleman'. It is a massive brick building with a water-wheel each side and no doubt replaces a much older building, owned originally by the Abbey, and passing into private hands at the Dissolution.

The River Swilgate rises near Queen's Wood on the slopes of Cleeve Hill. Its feeders are Prestbury Brook and Wyman's Brook, the latter rising at the Newletts, forming the lake in Pittville Park and joining the Prestbury Brook near Elmstone Hardwicke. Their combined waters flow into the Swilgate at Stoke Orchard. Here is a mill, only a plain brick building of Victorian period, but with a lovely half-timbered house as a dwelling, so obviously the present mill is a successor to an older one. This mill was once the property of Gilbert de Clare. It is tucked away in rather a secluded corner, along a narrow lane alongside the churchyard, and then through a gate along a rough drive to the farm. A small tributary stream from Woodmancote runs through Bishop's Cleeve to join the Dean Brook which joins the Swilgate below Stoke Orchard. On this Woodmancote brook, just where the scarp blends into the flat land near the Apple Tree Inn, is Cleeve Mill. It has not worked within living memory but no doubt was the

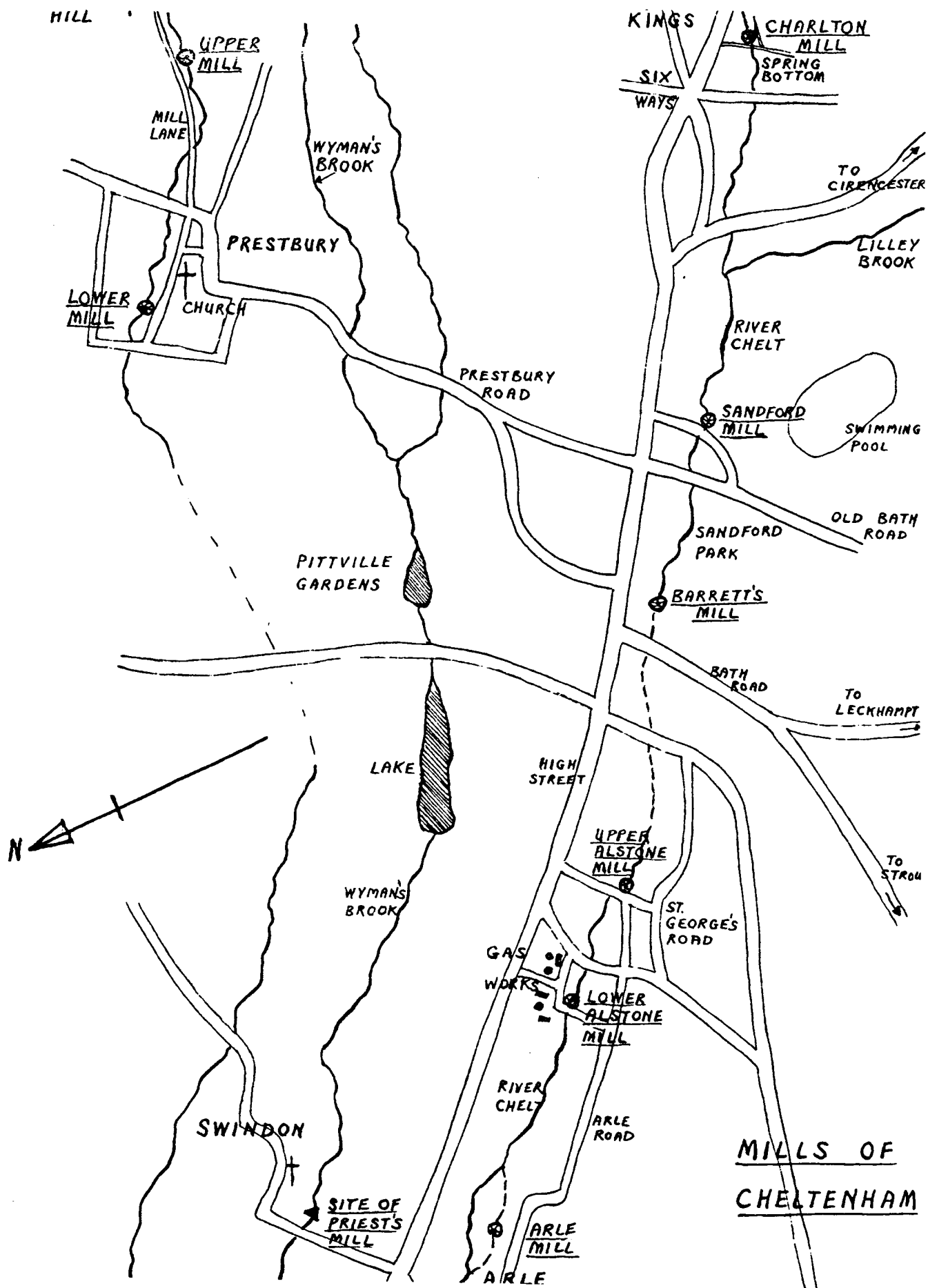
parish grist mill. It consists of a pretty stone house with an attached mill building.

At Tredington, too, is another fine black and white miller's house, unusual in Gloucestershire in that it can boast of curved timbers. The mill building is of soft grey stone and in a very dilapidated condition. Below Tredington the Swilgate runs in a shallow valley parallel with the main Tewkesbury road, and joins the Tirlle Brook just above Tewkesbury.

The Prestbury Brook rises above Noverton on the steep scarp of Cleeve Hill. Mill lane is well signed, and here, just before the lane becomes rough and steep, is the Upper Mill belonging to Prestbury parish. The house is now two cottages, and the mill is in a yard at the back. It is a stone building, with an ecclesiastical doorway leading into the ground floor, and has long been disused as a mill, though the iron wheel is still there in good condition. Behind the mill is some rough ground overgrown with trees and bushes, but the hollow of the former millpool is still traceable. Prestbury Lower Mill is nearly opposite the church. In 1919, according to a directory, it was a laundry kept by a Mrs. Kitchen, who no doubt was tempted by a good supply of clear water to set up in business in an old mill. There was a pool here once, its site now occupied by a raised lawn, and the mill-race and wheel-pit must have been in the little paved courtyard between the road and the house wall. It is misleading to find this house called Greenlands - it is a pity that the old name has not been preserved. The brook wanders round the edge of the Race Course to Hunting Butts and Swindon, then on to Stoke Orchard, running parallel to the Swilgate for about two miles before joining it, though only a field's breadth away. There was a mill at Swindon in Norman times - 'Swintone in the Hundred of Cirencester'. (This Hundred had several isolated patches attached to it). It was awarded to Roger de Lacy, but by the 13th century was the property of Simon the Priest, and was known henceforward as Priest's Mill. In the copse by the bridge, one can still discern hummocks, channels and traces of sluices, but the mill itself was demolished long ago.

## PART II - MILLS OF THE RIVER CHELT

The River Chelt has two headstreams, one rising near Sandywell Park, the other above Dowdeswell Court. In 1886 these two streams were dammed up to form the Dowdeswell Reservoir, a lovely sheet of water alongside the Cheltenham - London road. Just below the dam there is a small farm approached by a rough track starting near the filter tanks. The farmhouse is a neat little tile-hung villa of late Victorian period, and behind it is a collection of farm buildings. One of these, an old stone one with the tell-tale upper storey door, is all that remains of Dowdeswell Mill. It is now used as a cow house, for of course, with the construction of the reservoir, the water supply to the mill was cut off, and the farm is the property





of the Cheltenham Corporation. There is little water in the stream now compared with what there must have been, for the town utilises the greater part of what must originally have flowed in the channel. It is reasonable to assume that all the Chelt mills were put out of action at the same time; owing to depletion of the water supply.

At Charlton Kings the Chelt is joined by the Ham Brook, and the combined streams flow in a deep dingle behind Millbrook House. This dingle is known as Spring Bottom, and here in this obscure corner is Charlton Kings Mill, approached by a little rough road leading steeply down to a water-splash by Tarling Cottage. The mill and house are of old red brick, with stone roofing tiles, and the mill has long been disused. Even in 1902, according to a directory, it was functioning only as a dairy.

Sandford Mill, about three quarters of a mile down stream, is easy to find as the road leading to it is named after the mill. It is an isolated building surrounded by nursery gardens and meadows, a rather striking white gabled house with an adjoining mill building, and behind it one can hear a good rush of water over a weir. There were two mills in Cheltenham in Saxon times owned by King Edward the Confessor, and Sandford Mill was probably one of them. A plaque on the mill gives the date of renovation as 1780, but, although structurally sound, it has long been disused.

Other affluents join the Chelt, from Lilleybrook and Southfield, and the river now flows through Sandford Park. Near the High Street entrance gates you will find Barratt's Mill Lane leading to an old brick house, all that is left of Barratt's Mill or Cambray Mill. The Chelt plunges over a long concrete slide, which is at the back of the house, and can be seen from the path in the Park. This mill could possibly have been the second Saxon mill mentioned in Domesday Book. The Chelt is now culverted under the very heart of the town, but its waters have a brief glimpse of daylight in the Neptune fountain on the Promenade, after which they are culverted again to the closely built-up area between the St. James Station and the Gas Works. There were two watermills in this part of Cheltenham, Upper and Lower Alstone Mills. The Upper Mill is a shabby yellow-washed brick building used only as a store opposite the Alstone Spa garage, where Millbrook Street joins Great Western Road. A plaque on the wall reads I.A. 1810. The Chelt here flows in a deep gully with an occasional willow to mark its course. Lower Alstone Mill is now used as a Social Club by the workers of the nearby Gas Works. It is situated at the end of Arle Avenue, and is an old red brick building joined on to the Mill House which has recently been refaced with a dull pink stucco. There is a good view of the back of this mill from the bridge over the Chelt on the Gloucester road, looking straight along the stream flowing in a deep channel.

At Arle there once stood a beautiful Tudor dwelling, Arle Court, with a moat fed by the Chelt. The present Arle Court on the Gloucester road is nothing to do with the original one, in fact is over two miles away, and is a typical mansion of the Victorian age. But it was probably built about the time the old Court house was

demolished, and made use of the name. Near old Arle Court stood Arle Mill, now represented by a row of cottages, on a rough track leading across the fields to the Tewkesbury road. Number 281 still retains the words 'Mill House' on its white gate, and number 279 was apparently the working part of the mill. The houses are whitewashed and the old tail-race can still be identified though very shallow and dry.

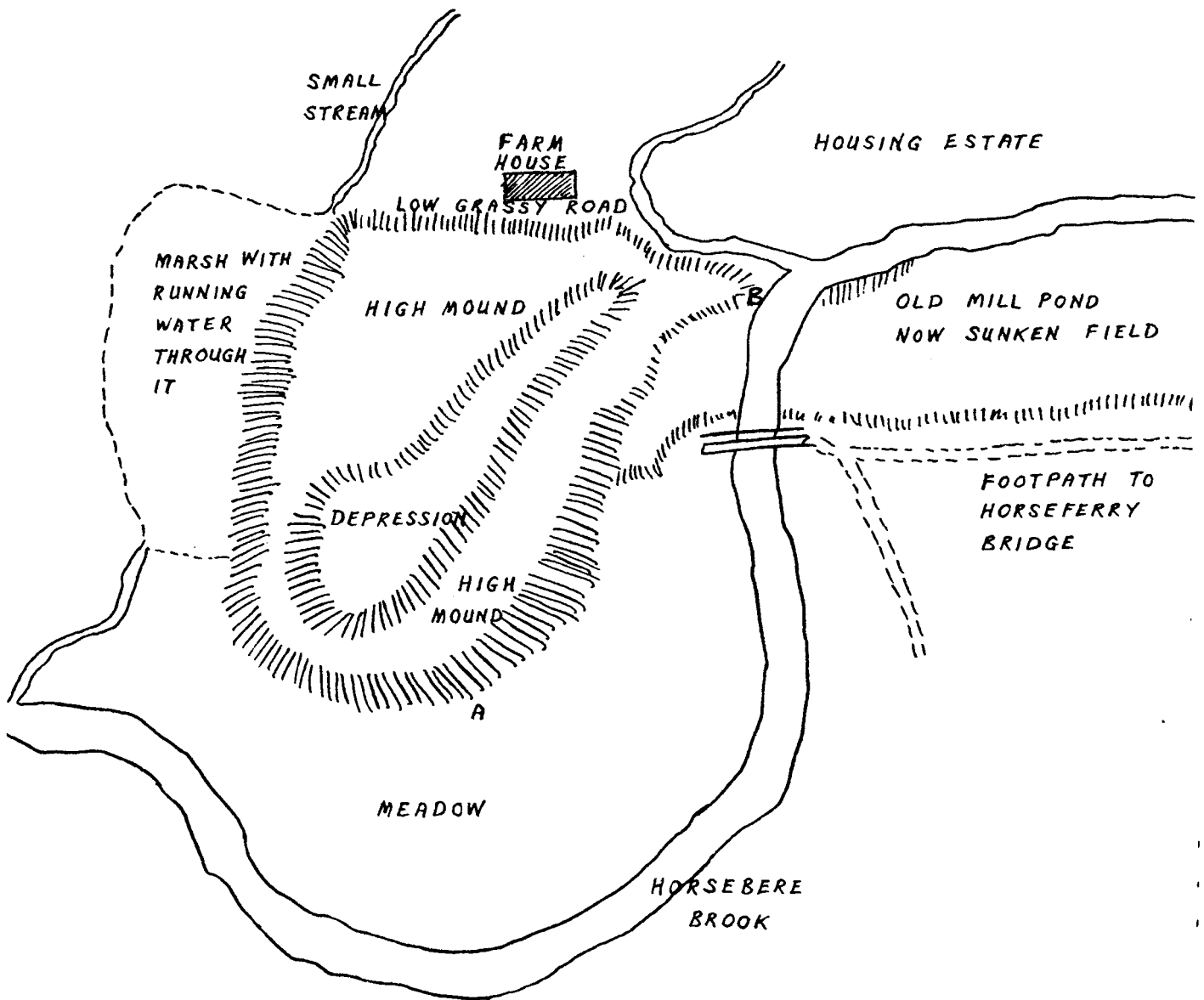
Where the Chelt crosses the lane from Staverton to Elmstone Hardwicke stands Withybridge Mill, probably the Uckington Mill mentioned in Domesday Book. It consists of a brick and wood barn-like building with a corrugated iron roof. The water here is very turgid and unpleasant owing to its pollution by effluents from the Sewage Works. The mill ceased work when water from the Chelt was diverted to this undertaking, and probably the opening of the water-works at Dowdeswell in 1886 was another contributory factor in the closure of the Chelt mills. It was working as a saw mill in 1922.

At Boddington there are no fewer than three mills. One of them was built only about 1880 to serve the needs of the farm at Boddington House, the large square brick house adjoining the churchyard. There was until recently a tall brick chimney attached to a barn on the stream side but this was felled in 1950. If you stand on the rubble site of this chimney and peer round the corner of the barn, you will find yourself close to the iron millwheel, which of course no longer turns as the Chelt no longer runs in the high embanked channel. This mill has been dismantled only recently, for a farm worker said it had done useful work through the war years, but the stones and machinery have been entirely removed. This mill must surely have been about the last to be built in Gloucestershire, and as it was never anything more than an adjunct of the farm, it would never figure as a mill in any records, except the account of the millwrights who constructed it.

Across the road from the Manor is Boddington Mill. It is a plain brick building, redeemed by a half-timbered gable end, obviously the remains of a much older building. A former miller here was the grandfather of the Mr. Healing who owns the Borough Mills at Tewkesbury. The dwelling-house is an attractive thatched cottage\* with a pretty sunken garden. The mill is no longer in use now, but is the successor to a Saxon mill owned by King Edward the Confessor. The Chelt wanders on through lush meadows containing fine old trees towards Coombe Hill, then turns sharply to the south west. At this abrupt hairpin bend stands Slate Mill, approached by a rough drive from the Cheltenham road. It consists of a brick house and attached mill, which is still working, and has been in the Cook family for over one hundred years. There is a good pool and iron wheel and water power only is used. (Mr. Cook died in 1960, and the mill ceased to work).

\* In the spring of 1961 I found the thatched roof had been replaced by a tiled one.

BADGEWORTH MILL,  
NEAR HORSEFERRY BRIDGE,  
CROSS HANDS, BROCKWORTH.



DISTANCE FROM A TO B IS APPROX. 60 FEET.

HEIGHT OF MOUND AT A APPROX. 8 FEET ABOVE  
 LEVEL OF MEADOW.

THE DEPRESSION RUNNING ALONG CENTRE OF MOUND  
 IS APPROX. 4- FEET DEEP.

The Chelt flows on now in a wide shallow valley with the Leigh Brook only a field away, and they both cross the Tewkesbury road beyond Norton. Here on the roadside is a little brick mill and a prim little miller's house, and the millwheel can be seen under the archway if you climb the slight embankment which retains the Chelt. This mill in Domesday Book was the property of the Archbishop of York, for Norton was part of the estate of St. Oswald's Priory in Gloucester which was then in the Diocese of Worcester whose Bishop, Thomas, retained Worcester even when translated to the See of York. So right through from Norman to Tudor times this mill remained the property of the Church and the miller would rank as a lay servant of the Prior of St. Oswald's, undisturbed by the changes which took place in manors with a lay lord. Below Norton Mill the Chelt and countless companion streams meander across the flat marshy fields to join the Severn at Wainlodes.

### III - MILLS FROM BIRDLIP TO HARESFIELD BEACON

The Horsbere Brook and its affluents fill the Witcombe reservoirs and its flow is, of course, much diminished since the opening of the waterworks in 1860, which no doubt was the chief cause of the mills on its banks ceasing to function as watermills. Between Horsbere Bridge and Henley the brook makes a sudden bend just where it is joined by a small tributary from Birdlip. This bend is still called Mill Corner and a field nearby Mill Croft. A footpath alongside the stream on the Gloucester side leads to a wooden footbridge, and in the field on the far side of the bridge are considerable hummocks which represent a former watermill. A reedy hollow nearby must have been a millpond once. The mill was demolished previous to 1840, as it does not appear on a Tithe map of that date, and no maps give it a name even when they indicate its existence by the little millwheel symbol. Until a recent revision of parish boundaries, the parish of Badgeworth threw out a long tongue towards Horsbere Bridge, and I believe that this long vanished mill must have been Badgeworth Mill, owned in Norman times by William d'Ow or Rous, who also owned property at Duntisbourne. The brook which passes through Badgeworth village, Norman's Brook, is of much smaller volume than the Horsbere Brook (in its former state) so this site, though at a distance from the village, would be preferable to any on the other brook.

Brockworth Mill is a fine old stone house in the lane which leads from Brockworth Vicarage out to the Shurdington road at Henley. It was owned in Norman times by Hugo l'Asne, and the occupier has been told that the lower walls are probably original, and this is easy to believe for they are extremely massive. A truncated chimney-stack will be noticed, indicating that steam power was once utilised to supplement the water power, probably about the time when the waterworks depleted the Brook.

In Larkhay Road, which runs past Hucclecote Church, is Pitt Mill, a plain brick building partly covered with creeper. There was a good pool here until the floods after the heavy snowfall of 1947 carried away the sluice and part of the dam, since when it has been dry and is now grassed over. The house is a pleasant mixture of half-timbering, stucco and brick, with a fine old chimney built of Breton bricks abutting onto the lane. This mill, like Norton, was in the barony of Churchdown, which formed part of the estates of St. Oswald's Priory, and so came under the jurisdiction of the Archbishop of York until the Dissolution, when it passed into private hands. Below this mill, there are no others on the Horsbere Brook, which crosses the Cheltenham road near the Greyhound Track, and the Tewkesbury road at Longford to join the western arm of the Severn near Ablode's Court.

There is a rather insignificant stream rising at Sneedham's Green behind Robinswood Hill, and flowing across fields to Whaddon School, thence along Grange Road to Lower Tuffley and into the Canal at the Two Mile Bend. A woman living in this district had heard that there was once a mill on this stream, and certainly there was a mill at Tuffley in 1889, according to a County Directory, with a steam-engine, but today there is no trace, although the most likely site would be somewhere near Grange Farm.

Paradise Mill at Harescombe has been dismantled for many years. The stream from Stockend is quite small, but the mill is built where there is a good natural fall, so this must have compensated the lack of volume. The mill is on the left as you approach the church, a stone building with a corrugated iron roof, and a door sill at a convenient height for waggons. The little brick house, a comparatively modern one, is now empty and all the buildings very dilapidated, so it will be only a short time before the whole property is in ruins.\* A sluice on the righthand side of the road once dammed up a long narrow pool, and an iron pipe led under the road to the crown of the wheel.

The Standish Brook rises in the valley between Haresfield Beacon and Ruscombe, and crosses the main road near Standish Church. It is embanked along the foot of the little green hill, Court Hill, with the tumuli on its summit, and feeds the ornamental ponds in the grounds of the Court. As one went along the lane to Moreton Valence, one could, until 1950, see the ruins of a burnt-out mill. This was Court Mill, which must have been a fine substantial building of Cotswold stone. There was a fenced-in archway, and the axle must have been an entire tree trunk. The building has now been removed, the wheel-pit filled in and only the bottom four feet of the stonework retained as a wall to hold up a raised garden plot. Another mill, totally demolished many years ago, once stood behind the Court, near the present farmhouse, and two brothers named Prout, a famous farming family hereabouts, ran the two mills.

At Moreton Valence is a mill, now only a farm. The Standish Brook crosses under the Bristol road just before one reaches the lane

\* The Mill itself has been converted into a house during the 1950's.

to the church, and here, close to the road, is the old brick farmhouse with a Dutch curb roof, and a red brick mill building, of more recent construction than the house, now used only as stabling. There is no record of this mill ever having been used for grist and the only information about it, and that handed down by word of mouth, is that it was a pin-mill. It seems a queer place for a small factory - one wonders where the workers lived in such a completely agricultural village - but a few miles down the Bristol road was a wire-mill at Cambridge, so the Moreton Valence pin-mill may have had some connection with it. The Standish Brook empties itself into the Canal at Castle Bridge, but a broad ditch running alongside the road to Epney appears to be the original channel of the brook which must have joined the Severn near the Anchor Inn. The next stream from the Cotswolds is the River Frome or Stroudwater, with its own prolific series of mills.

(Miss) G. M. Davies

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#### SOCIETY VISIT TO THE LECKHAMPTON INCLINES

On the evening of the 19th May, 1967, David Bick led a party of approximately twenty members over the inclines, starting at Tramroad Cottage and then visiting the former level-crossing over the main Cheltenham-Leckhampton road.

After a steep climb through the woods up the Middle Incline we reached the focal point of the whole system. Past the former lime kilns fed by a 2ft. gauge tramroad we saw the line of no. 6 incline before reaching that well-known landmark, the Devil's Chimney. The line of no. 1 incline goes between this pillar of rock and the hill and Mr. Bick thinks that the workmen may have left the Chimney as a joke.

Climbing to the top of the hill we made our way along to the summit of the Top Incline and could see the shallow Brownstone Quarry. It was by the Top Incline that David Bick pointed out some of the blocks still in their original positions.

Reaching the focal point again we descended the incline, which had standard gauge railway track, and soon reached the car park in Daisybank Road after an interesting evening, helped by the issue of maps and notes.

Editor.

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## STEAM ENGINE AT GLOUCESTER DOCKS

Many members will already know that a Gwynne stationary 2-cylinder compound steam engine, built in 1896, modified in 1900, and used to pump water from the River Severn into the Berkeley and Gloucester Canal, has been presented to our Society by Messrs. Nott Brodie of Bristol. A few people, especially our Chairman and Treasurer, have worked extremely hard in dismantling this engine, approximately 17 ft. long, 6 ft. wide and 6 ft. high, and organising the loading.

The President of the Society has kindly offered temporarily to store the parts at Messrs. Newman Hender's factory in Woodchester and volunteers are required to grease the components at weekends. Anyone who can spare a few hours is asked to contact the Chairman or Treasurer.

The loading and transport of the engine will cost the Society between £30 and £40 and members are asked kindly to send a donation towards the cost of this valuable work. Cheques and postal orders should be sent to the Treasurer (address on inside cover) and endorsed "Gloucestershire Society of Industrial Archaeology".

G.N. Crawford

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## GLOUCESTERSHIRE TECHNICAL INFORMATION SERVICE

The County Technical Library at the North Gloucestershire Technical College, Cheltenham, has now purchased the Newcomen Society Transactions from 1920 - 1940. This is in addition to the previous holding of 1947 to date. Anyone wishing to borrow a copy should contact Mr. I. Rogerson, Technical Librarian.

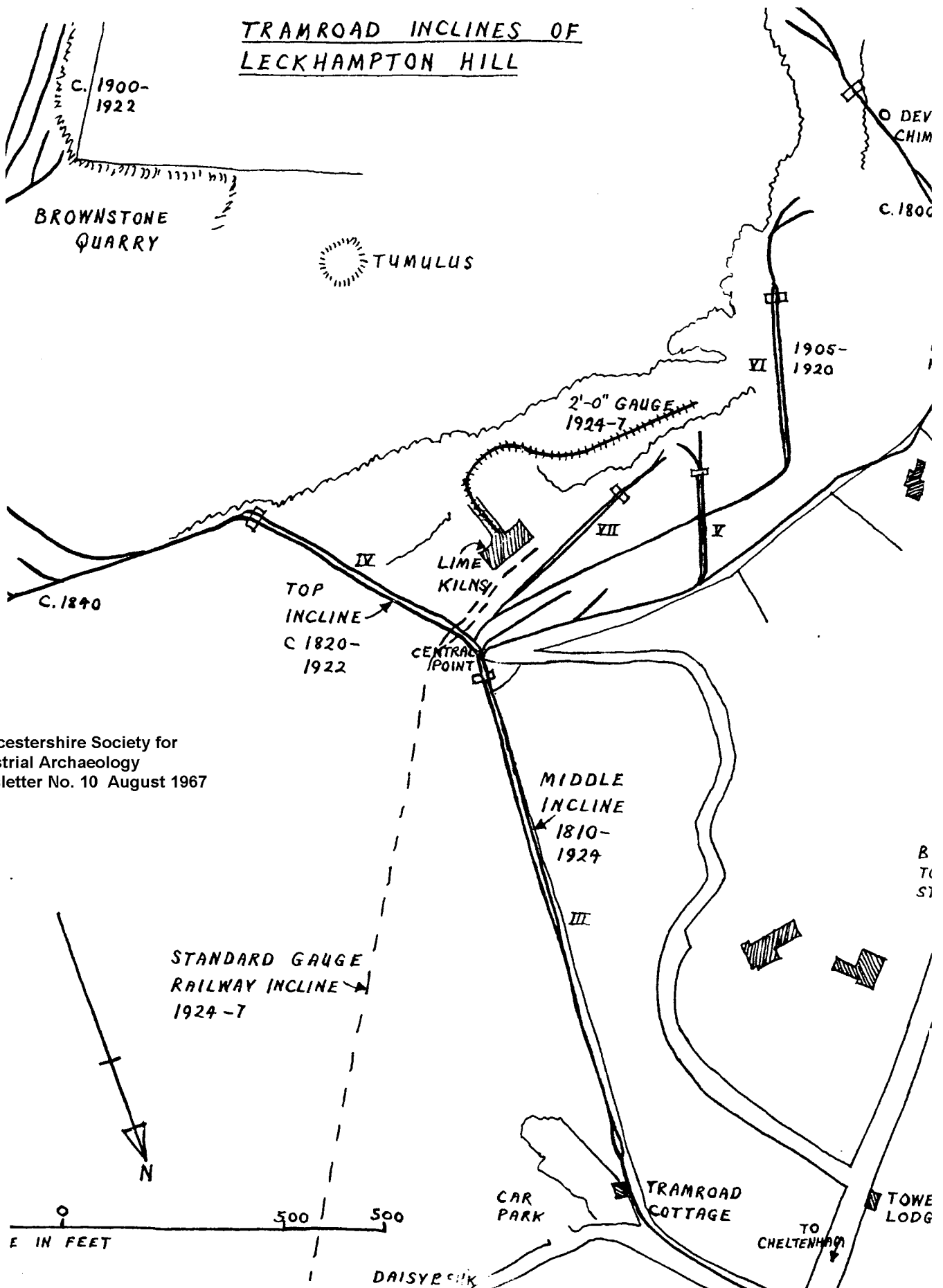
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## MILE POST AT BERKELEY

Thanks to the County Surveyor, Mr. Downs, and to the farmer, Mr. Chamberlayne of Pedington Manor, who found it as a gatepost, a mile post formerly on the Berkeley and Bristol Turnpike has been restored to its original position.

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# TRAMROAD INCLINES OF LECKHAMPTON HILL



Gloucestershire Society for  
Industrial Archaeology  
Newsletter No. 10 August 1967



## THE TRAMROAD INCLINES OF LECKHAMPTON HILL

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For the easier conveyance of stone quarried on Leckhampton Hill, there was a 3 ft. 6 in. gauge tramroad (plateway) and incline at the Devil's Chimney well before 1809, but the rails did not reach Cheltenham, 2 miles to the north, until the Leckhampton branch of the horse-operated Gloucester & Cheltenham Railway was opened in 1810. The branch came to the foot of the hill and the landowner, C.B. Trye Esq., F.R.S., built at his own expense two further inclines to connect it with the lines already laid down near the top.

These facilities, combined with a strong demand for building stone and limestone, resulted in a rapid expansion of the quarries, and by 1838, 22,000 tons of products were carried annually by tramroad to Cheltenham & Gloucester.

As the quarries grew, new inclines were built and eventually, in respect of their number, concentration and peculiar design of winding machinery, the seven tramroad inclines of Leckhampton Hill were unique in the south-west of England. Locally known as 'Jinnies' or 'Jennies', they must have been an impressive sight when in use, most of them being visible from the main road below.

The machinery for operating the Devil's Chimney incline probably set the pattern for Bottom and Middle inclines; a horizontal winding drum was employed with its axis straddling the tracks, the trams passing beneath. These drums had a manually operated band brake and each end of the rope was hooked onto a tram, the descending vehicle pulling up the empty one by virtue of its greater weight; only one was allowed to descend at a time.

According to an early drawing, the Devil's Chimney incline had over its upper length a single track, which presumably divided into two below, in order to allow the trams to pass each other. The later inclines, other than Nos 4 and 5, which were double-tracked over their entire length, had this layout reversed, the upper half being double and the lower half single. Switch blades were fitted where the tracks converged and were automatically knocked over by the wheels of the descending tram, thus ensuring that it would ascend on the return journey by the same route.

A peculiar mode of working was applied to the two very steep inclines Nos 4 and 5. The conventional method was discarded in favour of a continuous chain which ran round a wheel about 6 ft diameter, similar to a colliery pit-head wheel, but having a vertical axis with the trams passing on either side and beneath the wheel. A similar wheel was of course necessary at the foot of the inclines, and both had peripheral notches to accommodate the links of the chain, braking being in the usual manner. The ascending and descending tram was attached to the chain by a shackle.

This system was used until 1922 when incline No 4 closed and the machinery from the top of No 5 incline was possibly moved to Middle incline at some time before 1846 when the latter was modified from rope to chain operation. Bottom incline was also converted to chains, probably at a similar period, but its drum, the frame of which still stands, remained horizontal till the end.

A horizontal wheel instead of the more conventional drum was also used on No 6 and No 7 inclines and when the quarries finally closed in 1927, four of these fetched £1 apiece.

The inclines varied greatly in length, Middle being longest. It had a steeper slope near the top to compensate for the weight of rope or chain when the tram was in the early stages of descent. In later years, if not originally, the rails on the precipitous Top incline, No 4, were laid on longitudinal timbers with cross transoms, reminiscent of G.W.R. broad gauge practice - a technique which was also used for the incline, No. 6, to Dead Man's quarry.

All five inclines above the 750 ft contour, other than Trye's first, were probably built by the quarry tenants as need arose. The estimated cost of Bottom and Middle inclines were produced in September 1808 by John Hodgkinson, one of the best known tramroad engineers of his day. He allowed £1,900 for 'Two incline Planes, including a flat part between, of 950 yds in Length with all necessary Machinery at £2 per yard'.

Operation had hardly begun when a fault manifested itself which remained to a greater or lesser extent during their whole existence : the rope broke. A lady riding (probably unofficially) in the tram, had the misfortune to lose her nose in the crash; her face was saved by the timely presence of C.B. Trye, F.R.S., and surgeon to the Gloucester Infirmary, who quickly replaced the severed appendage with needle and thread. The outcome of this delicate operation was not recorded. In spite of such accidents, the temptation to take advantage of the trams must have been almost irresistible - a third class ride is better than a first class walk, especially uphill !

A much more unfortunate accident happened in November 1827 :-

'Two boys, one about seven, and the other about ten years old, were at play on the rail road - one of the trams was descending with upwards of a ton of stone, being let down by a windlass, when the rope broke, and the tram came down with the greatest velocity, and killed both boys on the spot. The father of one of them was working the windlass'.

The inquest on the children was held at the 'Hamletts', then a public house, but now better known as Tower Lodge, on the main road near the tramroad level crossing. The father's name was Harding and a namesake, perhaps a descendant, looked after Middle incline nearly a century later.

Wilful damage was another problem for the quarry tenant, as in May 1812, when John Walford & Co. offered five guineas reward for information of the offender or offenders who had 'maliciously and feloniously cut the ROPE (there fixed on the engine) through in three different places'.

Even after chains had replaced the ropes, the occasional spectacular accident still happened. In 1904, it was said that when breakages occurred on Middle incline, trams sometimes leapt 10 ft high and cleared 40 ft in free flight - alarming for pedestrians on the lineside footpath !

Much earlier, in 1819, the inclines had developed faults of an apparently serious but unspecified nature. As a result, 'it was determined that a survey should be taken by Hamblett and Mr. B. Newmarsh - to see whether they could agree on the requisite repairs and the expense thereof'. Unfortunately, details are lacking although it is known that the suggested remedies were carried out.

It is now over 40 years since the last tram rattled down, and nature has practically buried Bottom incline in undergrowth. The others, excepting No 5 which long ago succumbed to the quarrymen's labours, are easily identified, although most of No 1 and No 7 have suffered a similar fate.

#### THE TRAMROAD INCLINES : APPROXIMATE DIMENSIONS

Plan Ref.	Name	Length ft	Rise ft	Average Gradient	Built	Abandoned
1	Devil's Chimney	820	120	1 in 2.7	1795*	1820*
2	Bottom	830	162	1 in 5	1810	1924
3	Middle	730	210	1 in 3.5	1810	1924
4	Top	440	210	1 in 2.1	1820*	1922
5	-	250	-	-	1820*	1850*
6	-	330	118	1 in 2.8	1905*	1920
7	-	240	70	1 in 3.5	1920	1922

\* Conjectured date based on available evidence.

D. E. Bick  
5. 6. 67.

VISIT TO BUCKINGHAM AND STOKE BRUERNE ON  
6th MAY, 1967.

A coach of members and their children started off early on the first Saturday in May to pay a visit to Buckingham where our Society had been invited by the Theatre Organ Preservation Society. After picking up various members en route, including, at Bicester, our Chairman who had just flown back from the States, we enjoyed an interesting lecture given by Mr. Stuart in Buckingham Town Hall. This was on the three manual Wurlitzer organ, which had taken their members three years to assemble, and was illustrated by short demonstrations of the various sounds possible on the organ.

At the end of the 19th century, some people wanted to get away from the church organ and have something more like an orchestra. Robert Hope Jones built a movable organ, separate from the pipes, in Birkenhead, but failing to gain support, in 1910 contacted the Wurlitzer company in the U.S.A. In this year the Robert Hope Jones Unit Orchestra was built and organs like this were used to accompany silent films, incorporating the sound effects required.

In England, however, it was not until 1926 that the first cinema organ was introduced, just as silent films were to be superseded by sound. After 1927 600 organs, of which 99 were Wurlitzers and 350 were Comptons, were installed in the next ten years. These organs were therefore used for recitals which started with serious music but gradually got lighter and lighter, and showmanship became all important. The 30's were the heyday of the cinema organ and today there are only a handful remaining in use.

After lunch we arrived at Stoke Bruerne on the Grand Junction Canal to visit the Waterway Museum. Before examining the main exhibits the Curator gave a talk on canals with particular reference to various items in the Museum, such as the original deposited plans, subscription lists and the water cars etc. decorated with roses and castles. The latter he thought might have dated from the time when local sanitary inspectors started to inspect boats.

Members then wandered round the three floors of the Museum which was once a mill. Amongst the exhibits which attracted attention were a full-size reconstruction of a narrow boat cabin completely furnished; a large model of the Anderton boat-lift; an 1890 steam engine for barges; clothing worn by boat people; Telford's model of one of the Pontcysyllte spans; and numerous prints, photographs, maps and documents. Outside we saw a boat weighing machine from Cardiff and also a pair of rare cast-iron lock gates.

Most of us walked along the towpath to see the entrance of the Blisworth Tunnel,  $1\frac{3}{4}$  miles in length and now the longest tunnel in use in Britain. The steady chugging of a boat in the canal could be heard,

and soon we were lucky enough to see a pair of narrow boats loaded with coal. These proved most useful for the photographers present, especially when they tied up together to go through the first of a flight of locks almost outside the Museum. Later on quite a few other craft arrived and it was difficult to leave all this for refreshments in the Boat Inn, before returning home after a most interesting day.

G.N. Crawford.

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I.A. FIELD COURSE AT MATLOCK, DERBYSHIRE.

The University of Nottingham has arranged a course which will include the recording of two 18th century blast furnaces at Morley Park and the surveying of water mills. The course will last from the 19th August to the 2nd September, 1967.

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SOCIETY VISIT TO  
MESSRS R.A. LISTER'S CENTENARY EXHIBITION,  
FRIDAY 9th JUNE, 1967.

Members met outside the attractive Elizabethan Head Office of the Company at the bottom of Long Street in Dursley on a pleasant June evening. A member of the Lister family pointed out the letters E.W. over the doorway, the initials, he said, of Ernest Webb, a Huguenot who started spinning in this building. Later the present office became a monastic establishment and a cross was added above the porch.

Our party were then taken into the garden at the side of the house where there was once a lake but which is now a bowling green. Built on the bank behind is a chapel from which there is an underground passage to the Parish Church.

We next walked between the buildings of the old part of the Factory, passing on the way the first building of all, with name-plate "This Building was Sir Ashton Lister's Original Foundry 1867". Here Mr. Lister started with three men and a boy, mainly on repair work to agricultural machinery, while today at the Dursley factory alone there are approximately three thousand employees and the foundry makes twenty thousand castings a week.

We continued through some of Dursley's narrow streets, past a door faintly named Pederson Gauges Ltd, where the cycle of that name was tested, and shortly afterwards we came to the building where the cycles were made. At the end of this block the site of a waterwheel was pointed out to us.

Back in Long Street again we reached the Exhibition Hall where various old exhibits were on view mixed with the very latest that the firm manufactures. These old items were sent in from all over the world as the result of a competition to try and find the oldest Lister products still extant.

The most prized exhibit was a  $2\frac{1}{2}$  h.p. petrol engine C.1907, the sixth engine to be made and still being used for shearing sheep. This was the forerunner of the 6 h.p. diesel engine which is made at Cinderford, large numbers of which have been used in India and Africa for pumping and generating.

Other old exhibits included the following :-

- (a) Pederson racing bicycle 1900 - 1910 together with an interesting advertisement.
- (b) Dies and tools for shaping tinware used in dairies.
- (c) End-over-end butter churn C 1900.
- (d) Farmer's stone mill C.1910
- (e) Milking machine C.1916.
- (f) Hand-driven sheep shears C 1900, converted for belt drive.
- (g) Wyles Tractor 1917 for pulling a 1 or 2 furrow plough.

Finally in the Apprentices' School we examined a 4 h.p. Blackstone engine of 1911 in superb condition, found still working on a farm in Faringdon.

G.N. Crawford.

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#### ANNUAL GENERAL MEETING

THE SOCIETY'S A.G.M. WILL TAKE PLACE ON FRIDAY, 22nd SEPTEMBER 1967.  
WILL MEMBERS PLEASE BRING ALONG ANY SLIDES THEY HAVE TAKEN OF INDUSTRIAL  
ARCHAEOLOGICAL SUBJECTS ABROAD.

## HISTORY OF WESTERN NATIONAL

### STROUD BUS SERVICES

#### Sprang from Essex

The 'National Steam Car Company' was first registered at Chelmsford, Essex on 19th June, 1909 and after running supplementary to the London General Omnibus Company in North East London, began proper services of its own on 2nd November, 1909. However, services mainly operating in the London area and based at Lambeth were reduced in July, 1913 when the bus services of the Great Eastern Railway were taken over. About 170 buses were involved in this one acquisition. At the close of the first world war in 1919, the National services were withdrawn from the London area totally and also the L.G.O.C. ones in the Bedfordshire area, following an agreement with the Underground group. Operations finally ceased in London on 19th November, 1919. Due to a drop in passengers after the London routes had been surrendered and observing that the services then being operated of the old Great Eastern Railway weren't being altogether well patronised, it was realised that expansion had to take place elsewhere. The Midlands were already being covered by the Tramway Associated Companies and it was time to look further afield. It was decided to invade the West of England as there were no really large operators in that area.

#### Base Camp - Stroud

There does not appear to be any significant reason why Stroud became the National's first west of England depot. In one respect it continued the policy of operating in rural market towns but it may have been the intention to absorb Bristol services. This could have proved too big a proposition so they settled within a stone's throw of the City and secured a foothold in Stroud approximately November/December, 1919. Vehicles were drafted in from Shepherd's Bush garage in London which was still the company's main body overhauling shops. Typical of many early National garaging facilities, the arches of the L.S.M.R. viaduct carrying the Stroud to Dudbridge branchline near the Nailsworth Road at Wallbridge served ideal parking space for the time being.

On the 13th February, 1920 the company's name was changed to the 'National Omnibus & Transport Company' and the registered office was at 206, Brompton Road, London S.W.3. The reason for the change in name was that most of the old Clarkson steam buses had, by this time, been replaced by petrol ones mainly of A.E.C. and Dennis makes. Vehicles were of charabanc, saloon, open-top double-deck and lorry versions, the latter being employed for the haulage side of the business. All were numbered in a series from 2001 onwards, the plates being carried either on the bonnet sides or just above the running board.

### Local operators acquired

Now firmly established in the west, the company began to expand by taking over any small operators it could. The first of these was Arnold of Nailsworth who sold out on 17th March, 1920 thereby starting a chain of takeovers which was to follow for the next two decades. Among local operators to pass to the National were Ireland, Painswick circa 1920 and the Minchinhampton to Stroud service of Major Rowlett circa 1926. The inhabitants of Stroud favoured the Ruscombe and Whiteshill service of Rynee who had a garage on the Lansdown. Although the National competed with him for some while, his buses were always packed whilst the National's ran empty. However, this drawback didn't hinder the company to a large extent because they took over a garage in Slad Road in the early '20's where they had better facilities all round. Outstations were set up at outlying districts and a small garage was worked at Coombe Valley, Wotton-under-Edge for about twelve months circa 1920/21. This was due to the takeover of Scadding's 'White Lion' buses who ran some small capacity Chevrolets. Almost simultaneously another outstation was established at Uley. This lasted until 1939. Also, expansion was rapidly taking place at Trowbridge, Bridgwater, Taunton, Yeovil, Bridport and by 1924 Weymouth had been invaded.

### Second change in name

By 1928 the N.O. & T.C. had grown to a vast size and covered a broad territory. With services extending into Cornwall and further takeovers continued in the Essex area, it was becoming too large to control from one office.

On 28th February, 1929, due to an arrangement with the railways whereby the latter's bus services were transferred to the bus companies, the N.O. & T.C. was split into three operating companies to coincide with the three railway regions in which they ran. Eastern National (Great Eastern Railway), Southern National (London South Western Railway) and Western National (Great Western Railway) which was the region in which Stroud fell. So from 1st March, 1929 vehicles and timetables began to appear in the name of Western National and the local office was moved from Locking Hill to George Street. By now, vehicles of larger size and standard types were common in the fleet and a larger garage and workshops were built in London Road during the early '30's.

In 1932 the head office for Western and Southern National was moved to Exeter and that of Eastern National to Chelmsford. From then on vehicles of Bristol and Dennis manufacture were familiar in the Stroud area and during the last war, five utility Bedford buses with wooden slatted seats were based here. Although Western National was still expanding further west, the Gloucestershire area of services became somewhat isolated from its nearest depot, Trowbridge, due to being surrounded on that side by Bristol Tramways & Carriage Company.



## New ownership

In 1950, Bristol Tramways & Carriage Company took over Cheltenham District Traction Company and their depot in Stroud and local routes of the Red & White Motor Services. On 20th May that year the London Road garage of Western National complete with its staff, 46 buses, 1 van and 1 lorry were also similarly taken over. The Western National service numbers which were in the range 220 - 253 were renumbered 420 - 453.

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If any of your readers can confirm, clarify or enlarge on this section of the Western National's history, such information will be very welcome indeed. Dates are very important and in some instances are only vaguely known. Any literature, photographs or information will be helpful and acknowledged.

R. J. CRAWLEY

82 Attwyl Avenue,  
Heavitree, EXETER,  
DEVON.

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## TRANSACTIONS OF THE BRISTOL & GLOUCESTERSHIRE ARCHAEOLOGICAL SOCIETY

Volume LXXXV contains some additions and alterations to Christopher Cox's article on the MILESTONES OF THE STROUD DISTRICT. The contents include an article on the deserted mediaeval village of Upton near Blockley; records of the Cordwainers' Society of Tewkesbury (the shoe-makers' guild); an account of the Daubney family of sugar refiners in Bristol and rivalry with those of Gloucester; a short article on the bore diameter of Clay Tobacco Pipes made in Bristol and, finally, book reviews of interest to us.

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## ROAD ROLLERS

A publication received by the Society from the Lincolnshire Local History Society mentions a book called 'A HUNDRED YEARS OF ROAD ROLLERS' published by Messrs. Aveling Barford of Grantham (price 18/-).

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CORRESPONDENCE

8 Cranleigh Gardens,  
Stoke Bishop,  
Bristol 9.

4th Feb. 1967

The Editor.

Dear Sir,

The article on Local Inventors appearing in no. 9 of the Society's Newsletter refers to a patent granted to one 'John Halls' of Chipping Campden in 1736. According to the 'History of Chipping Campden' by Christopher Whitfield (Shakespeare Head Press, 1958) the patentee was Jonathan Hulls, member of a well-known local family. A full account of the man & his invention will be found on pp. 164-6 of the book.

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24th Feb. 1967

Dear Sir,

In one of your issues you published an article - with illustrations - of various types of Victorian letter boxes. I was delighted recently to find three 'Penfolds' in a single morning's walk in Cheltenham.

1. In Bayshill Road.
2. In Montpellier at the foot of the row of shops.
3. In Lansdown Road.

All three are hexagonal with the high level letter-slot, royal cipher & characteristic top with leaf-like pattern. That in Lansdown Road also has the royal arms.

Yours faithfully,

(Miss) B. Sydenham.

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Gloucestershire Society for  
Industrial Archaeology  
Newsletter No. 10 August 1967

continued ....

Records Office,  
Clerk of the Council's Dept.,  
Shire Hall,  
Gloucester.

21st March, 1967

Dear Mr. Crawford,

I read Mr. Bick's article on the Newent Coalfield with great interest, and should like to add one or two short notes. Coal was mined at Peter's Farm in Oxenhall before 1775, an estate map of that date now in the Gloucestershire Records Office marking a field called Mine Pit Field. It was claimed that the pit near Hill House referred to in Mr. Bick's notes, would be producing coal by Christmas 1796.

The canal branch of 1796 did in fact run all the way to this Colliery and some traces may still be distinguished. It is marked - although already abandoned - on the Oxenhall tithe map of 1842. The best account of the history of this canal so far in print is by I. H. Cohen in the Transactions of the Woolhope Field Club, Vol. XXXVI (1959), pp. 167 - 179.

Incidentally, despite the small size of the parish the rolling fields and daffodil woods of Oxenhall conceal an area rich in industrial enterprise. There are disused coal pits, iron mine and the well-known Furnace; canal with tunnel and locks, branch railway and modern motorway; former quarries and brickworks; mill site and Gloucester Waterworks Pumping Station; farms with cider presses, obsolete Lister engines, and other old machinery.

Members of the Society are welcome to call at my home at Coldharbour near the canal tunnel (Grid Reference 32/714276) for relaxation or refreshment while working in the area.

Yours sincerely,

Brian S. Smith.

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The City Museum Bristol,  
Queens Road,  
Bristol 8.

16th May 1967

Dear Mr. Crawford,

Bristol Industrial Archaeological Society

At a meeting held in the Bristol Folk House on Tuesday, 25th April, 1967, the Bristol Industrial Archaeological Society was formally inaugurated and a steering committee elected. The objects of the society are primarily to carry out research into the Industrial

(cont.....)

CORRESPONDENCE (continued)

Archaeology of the Bristol region and to publish the results of this research. The society will engage in reford work and in certain cases press for the preservation of buildings and equipment. As an additional ancillary function it is hoped that lecture programmes and excursions will be arranged. The society will work in close association with the Centre for the Study of the History of Technology in Bath University of Technology, and with the Department of Technology in Bristol City Museum. Meetings will be held at Bristol Museum and it is hoped that when the society comes into active existence in the autumn, there will be a permanent headquarters available where members may meet and work. It is intended that a quarterly newsletter, BIAS BULLETIN, will be produced, giving a calendar of local events, short notes and enquiries, lists of members, etc., and that periodically a journal should be published containing the results of the society's research activities.

We are naturally anxious to cooperate fully with other local societies in the field and hope that co-ordination of activities can be arranged to avoid unnecessary duplication of effort.

The society's officers are : Chairman, Dr. R.A. Buchanan; Secretary, Mr. Neil Cossons; Treasurer, Mr. Roy Day. Dr. Buchanan and Mr. Cossons are acting respectively as editor and research co-ordinator.

The subscription for 1968 will be £1-1-0d for ordinary members and 7/6d for junior members (under 18), and membership is open to all. Further details of the society will be available at the beginning of September from any of the officers. The society's first 'year' will in fact run from Sept. 1967 to Dec. 1968.

In conclusion, I should like to express a wish on behalf of the members that BIAS may develop in the closest harmony with the Gloucestershire Society for Industrial Archaeology.

Yours sincerely,

Gloucestershire Society for  
Industrial Archaeology  
Newsletter No. 10 August 1967

Neil Cossons  
Curator of Technology  
Bristol City Museum.

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cont ....

1 Ryde Road,  
Knowle,  
Bristol 4.

28th June, 1967

The Editor.

Dear Sir,

I note from the January issue of the Society's Journal that Gloucestershire ports, harbours and inland harbours are not at present well covered in the Survey of Industrial Monuments.

This aspect of Industrial Archaeology has been a special interest of mine for several years and I should be glad to collate and record information on the subject that Society members may come across in the local press or during their researches elsewhere.

I am hoping to build up information and a collection of photographs etc. on Glos. harbours, ports, canals, waterways, inland harbours and boatyards with the idea of producing a book on the subject.

Already in my research I have found that many interesting photographs and documents have been thrown away because the owner thought that no-one was interested in them. May I appeal through the columns of the Society's journal to members to let me know of any interesting material they know of on this subject, before this too is lost.

Yours truly,

R. W. Shopland.

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I. A. - THE JOURNAL OF THE HISTORY OF INDUSTRY & TECHNOLOGY

The May number of this Journal includes a valuable article on Steam Power by George Watkins, who has lectured to our Society on the subject. The article is well illustrated by over fifty drawings.

Mrs. Margaret Westerling writes on the present condition of the Chard Canal in Somerset, a district which would be possible to explore in a day's excursion.

In the Notes & News there is a mention of our plaque at Brimscombe Port.

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## KEEP THE CONE-PLAN AT REDCLIFF

A 19th-century glass house cone at Prewett Street, Redcliff, has focused the attention of two Corporation committees.

The Museum and Art Gallery Committee went to see it yesterday and the planners regard it as an integral feature of the new Redcliff housing precinct.

Mr. Alan Warhurst, the Museum director, told his committee he thought the building was of "terrific potential."

And the committee decided they would like a stake in its future.

About the same time, the planners were having a comprehensive report on the detailed plans for the Redcliff development, in which special attention has been paid to ensure that St. Mary Redcliffe Church remains the dominant feature.

The City Engineer, Mr. James Bennett, referred to the cone, a former glass kiln, as an interesting example of 19th-century industrial architecture, well worthy of retention.

He recommended it should be used for some community purpose and suggested a fuller report later.

The chairman, Ald. Wally Jenkins, suggested it might be used as a glass museum or as a club.

Cllr. Harold Hodson (Lab., Hillfields) said there was nothing in Europe quite like it.

The premises, now occupied by Messrs. H. and T. Proctor Ltd., are being purchased by the Corporation.

The committee had a model of the main project before them, and approved the layout in principle, asking for particular attention to be paid to the design of buildings and the landscaping.

The scheme provides for 220 flats, maisonettes and old people's dwellings. Three and four-storey blocks will go up immediately to the east of the church, and three taller blocks, limited to eight and nine storeys high, in the centre and eastern part of the site.

Sites are being allocated for a new home for Dr. White's Alms-houses, and two three-storey residential blocks for the Girls' Friendly Society.

The committee are prepared to consider a proposal by the brewers for the rebuilding of the Bell Inn in Prewett Street. This would cut out a bottle-neck.

The last stage of the scheme will be construction of a six-storey block fronting Redcliffe Way, which will have to be deferred until the inner circuit road is re-aligned.

'Bristol Evening Post'

2/12/66

The second number of this excellent journal has now been received and this is without doubt even better than the first and contains much valuable information well illustrated.

A long article on the Metallurgy of Iron & Steel Making has numerous illustrations of furnaces and forges; the first of an illustrated series of steam locomotives shows a Rhymney Railway loco P.I. class; a short article on the River Twrch shows the uses to which the river water was put; an interesting essay on examples of 19th century working-class housing in South Wales with plans and section; there are notes on railway development in the Swansea and Neath areas by an old friend of our Society, Ray Bowen, illustrated by maps; the S.E. Wales Society's discovery of an ironstone tram in the Rhymney Valley Ironstone Mines is documented; the Welsh School of Architecture has again provided measured drawings, this time of Blackpool Mill, Canaston, Pembrokeshire. An appreciation of the first number by Kenneth Hudson has been included though I must disagree with his remark that their Journal was the first to include a list of Society members; and finally there are notes on their Society's visits.

G.N.C.

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#### A HUNDRED YEARS OF MATCH MAKING - THE MORELAND STORY

In 1867 Samuel John Moreland, born in Stroud in 1828, first started making lucifers and vesta matches in a small factory adjoining the Gloucester & Berkeley Canal on the outskirts of Gloucester. Manufacture was largely by hand and a considerable proportion of it, especially the making of boxes, was carried out in people's homes.

Several match making factories stemmed from the prosperous timber trade in Gloucester in the 1860's and 1870's, but by 1880 Moreland's appears to have been the sole survivor. S.J. Moreland had chosen his site carefully, close to the canal which bought him raw materials cheaply and took away the finished products quickly.

From the start, Moreland's had to fight stiff opposition from foreign matches, imported from countries like Russia and Poland. In 1911 extensive factory rebuilding was begun and in the following year the first continuous automatic match making machinery was

installed. Further new buildings were erected in 1919 and in that year the first motor vehicle took over from the horse-drawn carts.

In 1897, according to "The British Trade Journal", the factory was well ventilated, and power for splint making, box making and hot air match drying machines came from two steam engines. In those days one of the biggest departments was the match boxing department, employing 200 girls to hand fill the boxes. As much as possible of the raw materials was supplied from local sources, but most of the wood was aspen from Russia.

Extracts from "The Moreland Story"

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#### REPORT OF THE CITY OF GLOUCESTER MUSEUMS

This report covers acquisitions and loans during the last two years. Amongst those received at the Folk Museum are the following :

- (1) Two scale models of passenger coaches made by the Gloucester Railway Carriage & Wagon Co. in the middle of the last century.
- (2) The ancient bronze bell of Gloucester prison dating from the time of Queen Anne and cast by Abraham Rudhall at the Gloucester Foundry in the parish of St. Catherine's.
- (3) The Gloucester horse-tram already mentioned in a previous number.
- (4) Stone sleeper from Cheltenham-Gloucester tram-road (given by Mr. D.E. Bick).
- (5) Massey-Harris muck-spreader c.1920.
- (6) Two clay candle holders from Forest of Dean mines.
- (7) Mere-stone from Upton St. Leonards (given by Mr. C. Cox).
- (8) Warren's Patent knife-cleaning machine.
- (9) Samson cash transmission system.
- (10) Piece of rail from Cheltenham-Gloucester tram-road.
- (11) Collection of blacksmith's and stonemason's tools.
- (12) Sugar cutter and tea-packer.

G.N.C.

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## VISIT TO ST MARY'S MILL, CHALFORD

A considerable number of members and their friends gathered in glorious sunshine on the afternoon of Saturday 15th April 1967 to see St. Mary's Mill, Chalford through the kindness of the new owners Messrs. G. and G. Reynolds. A brief description of the history of the site, the machinery remaining in the mill and of the technique of stick making was given by Mr. Lionel F.J. Walrond.

The site now comprises two (formerly three) mill buildings, a beam engine house, a row of cottages and several houses of character. The finest of these is reputedly the birth place of Roger Bacon (1214-1284). Whilst this cannot be proved, the finding of a fragment of 13th century roof tile implies the presence of a house of quality.

The date of the first mill here is unknown, but by the 16th century it was owned and run by Francis Halliday who had two fulling mills and a grist mill here. From them it descended through a multitude of owners, mortgages and lessees till worked by Samuel Peach in the 1730's. Latterly trading as Peach and Davis the premises were advertised in 1756. Thirteen years later his trustees sold out to Wm. Innell and Wm. Seville. When the former went bankrupt in 1775 the premises were again for sale. He may have made some effort to salvage his business, for it was not until two years later that his trustees disposed of the premises to Thomas Fry Clark who died in 1785. His widow ran the mill for a time before advertising the property - then 'containing four stocks and a gig-mill, all in compleat repair with 17 racks thereto belonging' - to be let in 1786.

The mill may well have continued all this time subject to mortgages, passing in 1795 to Mr. Monkhouse Tate. Not for long - it was advertised for sale in 1813, 1816 and again in 1818 when it was bought by Samuel Clutterbuck. He demolished the old mill and built, probably in 1819-20, two large factory blocks one of which was demolished within living memory. He traded as 'Clutterbuck and Eycott, manufacturer of Saxony and superfine cloths, ladies cloths and kerseymeres', for a time, before Eycott left the partnership, probably c.1836-8. By 1840 cloth production had ceased after an active use of the new premises of less than 20 years.

Samuel Wright, R.A. Cochrane and others, papermakers, were at St. Mary's in 1846 and 1847, but how long they remained is unknown. Clean water is essential for papermaking, and this was available from the strong spring still flowing at the south end of the mill. The premises were certainly occupied by Grist and Sons, flock manufacturers, by 1857 and they probably remained till after 1889. Having remained vacant for several years, the mill was leased in 1903 to the Chalford Stick Co. who installed an extensive range of large circular saws and other wood working machinery. The walking stick and umbrella-

stem making business started by them is being continued by Messrs. Reynolds and is not only the last of the stick firms in Gloucestershire, but one of the last in England. Members were interested to see one of their employees at work.

One of the two water wheels, radius 7'6", width 13'9", put in by Samuel Clutterbuck, still remains though there is evidence that it has been modified, probably c.1897 when many mills dispensed with their vertical shaft drive in favour of belts. The water wheel is unusually large, with shrouded floats (cf Egypt Mill, Nailsworth) and a 'double hatch' control of the water inlet. It was last used in 1947.

Mr. Clutterbuck's 30 h.p. beam engine has gone, though the engine house remains. So too has the small steam engine that replaced it. The two existing boilers (which ceased working only weeks before our visit) are by Joseph Foster & Sons, Preston, 1897 and may date the alteration. This second engine blew up c.1919 and was replaced by a second-hand Tangye 'Belfast model' compound engine with Johnsons patent cut-off valve obtained from a Lancashire cotton mill. Its installation involved not only the removal of a part of the outside wall but also certain alterations to the pulley system, the new drive being in the opposite direction to that of the previous one. The drive is produced by six cotton ropes, the flywheel, capable of taking eight ropes, being eleven feet in diameter. The steam engine was in regular use till 1955, and is now being preserved by the firm.

Externally there is a marked similarity between the windows of the main block and those of Ebley Mill, both having stone mullions. It is thought that the long roof light, together with the clock and bell, is original. The adjacent single storey building has a fine iron and timber roof, the iron members being in tension.

The meeting closed with the Society's thanks to Mr. Reynolds and best wishes to the firm in their proposal to restore the entire mill and make it once again a hive of local industry.

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#### SUMMER SCHOOL AT THE PRESTON MONTFORD FIELD CENTRE

The Extra-Mural Department of Birmingham University is holding an I.A. summer school from the 12th to 19th August, 1967 at Preston Montford near Shrewsbury. As well as visits to Coalbrookdale, Pont Cysyllte and the lead mines of South Shropshire, there will be special studies of the Holyhead Road and M Hall's flax mill.

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## VISIT OF SOUTH-EAST WALES INDUSTRIAL ARCHAEOLOGY SOCIETY TO STROUD

Many members of the South-East Wales Industrial Archaeology Society gathered at the Laurels Hotel, Stratford Road, Stroud in the morning of Saturday 18th March for a most successful two day field meeting.

As a result of a belated start - due to an error on the part of the coach company - it was possible to start the day with an impromptu lecture by Lionel Walrond on the geographic and economic background to the Stroud Valleys and their industrial development over the past six hundred years. Upon the arrival of the coach the party left for Stanley Mill, near Stonehouse. The history of the site was briefly given by Mr. Walrond after which Mr. J. Marshall, one of our members, who is also a director of the firm (Marling & Evans Ltd.) kindly led the party over a large part of the premises to see the unique iron framed construction of c.1812-13 and to hear something of the present day processes involved in cloth production.

From here the party proceeded to Egypt Mill, Nailsworth which was explored by kind permission of Messrs. G.H. King and Sons, corn millers. A corn mill is reputed to have stood on this site since the time of Edward III. It later became a cloth mill, was used for a short time as a dye wood factory and then reverted to its original use. The clothiers house, dated 1698, has features of particular architectural interest. The mill, stone-built, contains work of several periods probably from mid 17th to mid 18th century. It is typical of others that formerly stood throughout the valleys prior to the great mill rebuild of 1800, and still retains a considerable amount of ancient machinery. The two water wheels are of breast type (not overshot as stated in K. Hudson's 'Industrial Archaeology of S. England' p.160) and unfortunately can no longer be operated. Still in working order are the different types of hursts supporting the mill stones, and it is still possible to work out the way in which the supply of water to one of the great wheels could be regulated by means of a cord from one of the upper floors. The sack hoist in the roof also gave rise to great interest.

A brief halt was made to look down upon Longfords Lake, 15 acres in extent costing under £1,000 to construct in 1806, then on past the famous bee-house at The Nag's Head and through secluded bye ways for a packed lunch at the Tunnel House Inn, Coates.

From this point onwards the afternoon was spent looking at the principal features along the Thames & Severn (1783-89) and Stroud-water (1775-79) canals under the guidance of John Strange. Concern was expressed at the condition of the tunnel mouth at Coates, where a large amount of stonework is becoming detached from the bank behind. The coach then proceeded to Daneway to see one of the original bargee

inns and the site of an extensive series of wharfs and canal pounds. At Chalford, Mr. Duncan Young gave the party a warm welcome at the Round House. Built as a canal lengthman's house, it is now run as a private museum and contains an extensive collection of material made, used or found in the village. After a look at the double wharf, many of the party paid an unofficial visit to the Stroud Water Board premises to examine the mysterious air pressure chamber and hear of the water pumps that formerly stood on the site.

At Brimscombe there was a further stop to see the site of one of two of the local boatyards, a special lock by Bourne Mill, long enough to take Thames barges, yet wide enough to take trows made at the above mentioned boatyard. A short walk led to the site of the Brimscombe Port. Almost all the canal buildings etc. have now gone, but the importance of the area has been commemorated by a plaque erected by the Gloucestershire Society for Industrial Archaeology.

Passing through the industrial complex at Dudbridge the next stop was at Saul where the level of the Stroudwater Canal was raised in 1820 to enable craft to enter the Gloucester and Berkeley Canal.

The last stop was at Framilode where there was just time before darkness descended to see the basin and allied buildings around the point where the canal entered the River Severn, and the nearby site of Gloucestershire's famous tin plate factory.

On Sunday Harry Townley led the party to Andoversford Junction Station and the independent M. & S.W. Junction Station at Dowdeswell nearby. Earthworks of the abortive East Gloucestershire Railway between Andoversford and Charlton Kings were also seen, before following the Leckhampton branch of the Gloucester & Cheltenham Railway through Cheltenham, noting warehouses and sites of coalyards with access to the railway.

The party explored Leckhampton Hill where David Bick showed workings, inclines and the later standard gauge lines. The incline from Leckhampton to Cheltenham was followed and then the line of the Gloucester & Cheltenham Railway, noting the remains of the stables at the Plough Inn at Staverton and some stone sleepers.

Reaching Barnwood they then walked along the embankment past the former Midland Railway running sheds. From Tramway Junction the course of the line was followed through the streets of Gloucester to the Docks, noting the site of the depot and early buildings possibly associated with the tramway.

Concluding the tour at the Docks, the South-East Wales party were interested in the warehouses and in seeing some tramway blocks set in the walls.

Lionel Walrond & Harry Townley.

EXHIBITION CASE OF 100 YEARS OF MATCH MAKING IN GLOUCESTER  
MUSEUM

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This small but interesting exhibition was shown in connection with the centenary of match making being celebrated this year by Messrs. S.J. Moreland & Sons of Gloucester.

The earliest exhibit was of sulphur dipped (double ended) matches cut by hand from deal, which were made prior to boxed matches. These were sold in the streets in bundles and produced one of London's street cries - "Who'll buy my matches?"

The majority of the exhibits were boxes and different labels, some very old and mostly found when houses were being pulled down. Also on view were hand-cut blocks for printing the early labels before rotary machines were introduced. Matches shown were made from white phosphorus which was banned later because of the injury it caused to workers' mouths ("Phossy Jaw", bad teeth etc.). There was one box dating to approximately 1877 on which the label read "Flaming Fusses" and another called the "Economica" match made around 1880 and sold at  $\frac{1}{2}$ d a box. Advertised as the cheapest match on the market, these matches were made of white phosphorus. Also on view were two large tin match boxes which were sold at 1d and 2d each, the boxes being used afterwards by children for their slate pencils.

Various associated products were shown such as a box of "Improved Tooth Picks" and a cannister of spills made in the early part of this century. Rather later were wood ice-cream spoons made in the 1930's and striker sticks dating from 1939/44 made for igniting a type of British Bomb. Also dating from the 2nd World War were R.A.F. water-proof match-cases made of a light alloy and containing safety matches and a striking compound. These cases gave complete protection against sea water for "ditched" pilots.

A small exhibit like this would be suitable for showing in schools and it is hoped that it will be possible to give it wider publicity.

G.N.C.

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VISIT TO THE GLOUCESTERSHIRE & AVON TRAMROAD ON SUNDAY 2nd APRIL 1967

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HISTORY OF THE TRAMROAD

The Bristol and Gloucestershire railway ran from the collieries of Coalpit Heath to Avon Wharf in Bristol and was opened in August 1835. The Gloucestershire & Avon railway connected with it near Mangotsfield and gave access to the Avon Navigation opposite Keynsham.

This railway opened in July 1832 together with that portion of the Bristol and Gloucestershire between Mangotsfield and Coalpit Heath.

The main object of both lines was to provide an outlet for the collieries of Coalpit Heath. The Gloucestershire & Avon was always closely associated with the Kennet & Avon Canal Co. and coal landed from the railway onto boats found its way to Bath and to points on the Kennet & Avon. Both lines were horse worked. The track was 4' 8" gauge, with wrought-iron fish belly rails fixed to stone blocks by cast-iron chairs.

The Bristol & Gloucestershire railway was incorporated into the route of the late Bristol & Gloucester Railway which now forms part of the main line. The Gloucestershire & Avon continued as a horse-worked tramway; the final section from the California Colliery to the Avon being closed in 1904.

#### VISIT TO THE TRAMROAD

A coachload of members started the tour at Avonside Wharf (ST 666693) where the railway layout was examined together with the weighbridge, stables and a building which had the roof truss timbers formed by an upturned boat.

A second wharf at Londonderry (ST 662698) joined to the main line was then visited and here we saw the wharf-house. Fish-belly rails were used as fence posts and one of our members from South Wales, Ray Bowen, unearthed a chair.

Our next stop was at Oldland where we saw a short tunnel and deep cutting (ST 669710) now being filled, and then walked along the line of the tramroad on a stone embankment, passing the incline coming down from the California Colliery (ST 665715). The most spectacular part of the line was the approach through a very deep cutting to the entrance of the Willsbridge Tunnel (ST 666707).

We then followed the course of the line through Warmley to Siston Common where there was a brief stop to see the line and the colliery it served. Our final visit was to a site south-east of Coalpit Heath to see the remains of branch lines from collieries where they joined the original Bristol & Gloucestershire track. Members were also able to see a waggon boiler (ST 682795) of the 1800 - 1820 period, lately used as a water tank in the N.C.B. loco shed.

Harry Townley.

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#### VISIT TO STROUD BREWERY

Unfortunately this visit had to be restricted to fifteen members and was arranged to take place before the brewery closed the following week. First, we were taken round by a member of the staff and then were allowed to wander round, taking notes and photographs.

Starting at the top with the mill with its rotary screen and two sets of rollers for crushing the barley corns open, we descended to the grist hoppers which led into the mash tubs where grist is introduced into liquor (water) at a critical temperature. The larger of the two tubs takes 35 quarters and was conveniently labelled with the date when it was first used - 1900. The liquor is obtained from a spring opposite the Salmon Springs bottling plant.

Below are a series of run-off taps from which the extract (wort) runs through into enclosed hoppers where the hops are added. Steam is forced through, hurling the wort against the sides of the hopper for an hour.

Before going to the fermentation rooms, which were on two floors, the wort is cooled down. Yeast is added and the temperature is controlled by copper coils in the bottom of the tank.

This brewery, once a cloth mill, was turning out two thousand barrels a week on the average, a barrel being thirtysix gallons.

Finally we walked under the main Cheltenham - Paddington line to visit the maltings where the barley is spread out before being dried out in the kiln.

G.N.C.

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#### RIVER SEVERN EXCURSION TO STOURPORT

3rd JUNE, 1967

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One hundred and twentyeight members and friends set off in the seventy years-old S.S. Belle from Tewkesbury on our second steamer trip, this time upstream to Stourport, a distance of twentynine miles. On board as our commentator we were lucky enough to have Mr. Rowbotham, the Engineer of the Severn River Board.

After passing the Tewkesbury Water Works we were soon under the cast-ironwork of Telford's Mythe Bridge and shortly afterwards entered Worcestershire. Mr. Rowbotham here mentioned that river traffic has dwindled greatly in the last few years. We next passed under the twin spans of the Queenhill bridge carrying the M.50 across the flood plain of the Severn and in another  $1\frac{1}{2}$  miles we were watching men demolishing the piers of the former railway bridge at Saxons Lode. The rubble was being unloaded into an old tanker.

Another water intake point was reached, this time taking out twenty million gallons of Severn to Coventry 43 miles away. Approaching Upton-on-Severn we passed six foot high banks of stone blocks which cost £16 to £20 a yard to construct. At Upton the new bridge of 1940, fabricated in Gloucester Docks and brought upstream on pontoons, replaced the old swing bridge. An indicator on the bank showed the headroom under the bridge.

Two more miles further we saw a huge pile of large stones and barges used in repairing the banks, and later on there was a barge with a ten ton crane for off-loading this stone.

Three-quarters-of-a-mile before reaching Diglis Lock we saw the River Teme flowing into the Severn. Diglis itself has two locks side by side, one smaller than the other, built when the river was canalised.

On the outskirts of Worcester, our attention was drawn to the entrance lock of the Worcester and Birmingham Canal which is thirty miles long. There is also an oil and timber dock here. After good views of the Cathedral we passed under first the road bridge then the bridge carrying the Malvern & Hereford railway.

Two miles on and we were in Bevere Lock which adjoins an island of the same name. The lock was opened in 1843, and it was here that we had to replenish our water supply for tea making. Shortly afterwards we saw the entrance to the now disused Droitwich Canal, followed by the mouth of the River Salwarpe.

A further two-and-a-half miles and we were at Holt Bridge and Lock, the bridge carrying the Ludlow-Droitwich road. The final lock before Stourport was Lincomb. Approaching the town our Chairman gave a description of how the place grew up round the junction of the Severn and Staffs and Worcester Canal, formed by Brindley. Before tying up we passed the Tontine Hotel and the entrances to both the broad and narrow locks, and then under the cast-iron bridge which has an interesting pedestrian spiral staircase.

In the one-and-a-half hours available most of us explored the four basins and the numerous locks between them, being able to assist the passage of a small pleasure boat through the narrow locks. Especially fine is the remaining warehouse with its clock tower.

The return trip was made by boat to Worcester and then by three coaches to Tewkesbury, from where everyone made his own way home after an interesting and enjoyable day.

G.N.C.



"GLOUCESTERSHIRE WOOLLEN MILLS"

Jennifer Tann.            Published by David & Charles.            45s.

A book which sets out to be an account of the woollen mills of Gloucestershire sets itself an onerous task. As any student of the county's industrial history knows, however small one's chosen site, one's work is never complete. There always remains the doubtful identification, the missing period, the conflicting evidence. To write a definitive book on Gloucestershire's cloth mills, a book beyond argument, would entail a lifetime's research and only with luck would it appear before the last mill fell a victim to the bulldozer.

What Dr. Tann has given us is a considerable compilation covering some 250 cloth mills, dyehouses and shearing shops, all but a dozen or so within ten miles of Stroud. For each site, grouped along individual valleys, a map reference and a summary of the mill's history is given. Some 28 mills or mill houses are illustrated and five maps show the distribution of mills through the period 1750 - 1900. In addition, the first quarter of the book gives an historical account of the Gloucestershire cloth industry from 1550 and a description of its organisation.

All this is valuable. The gazetteer of mill sites fills a need that no other publication, known to your reviewer has filled, and doubtless many enthusiasts will attempt to "do a Tann" by inspecting them all.

But while the account of each mill's history gives a general picture of the vicissitudes of fortune, the changes of ownership, the expansion and in so many cases the subsequent decline, the task of satisfying every critic would have been formidable. Dr. Tann admits in her preface that she has used only those records open to the general public and has not referred to documents in private hands. This is bound to have limited her sources and to have produced gaps.

One can only comment in detail with regard to particular mills known to your reviewer. For example, of Chance's Mill at Dudbridge, Dr. Tann writes that "no record of a fulling mill has been found prior to 1685." However, as she says, a mill of some kind existed here in the thirteenth century and the author has made in other places suppositions more risky than that required to link this mill with 'Ralph the fuller of Dudbridge' (c.1275) whose citation in the Rodborough records places him with a fair degree of certainty in the spot where Chance's mill later stood.

Again, with the Halyday family as tenants of this mill in 1708, is it not likely that Henry Halyday of Dudbridge, dyer, worked here in c.1610 ? And while it is true that "in 1902 an adjoining mill formerly used for the manufacture of carpets was bought" it should be pointed out that this mill is described by Libby as "a cloth mill formerly owned by James Apperly and Co." The whole problem at Dudbridge is more complex than Dr. Tann allows.

Similarly in the description of the Hawker mill at Dudbridge, Dr. Tann apparently overlooks the well preserved mill bearing John Hawker's initials, just below Dudbridge House.

One cannot, therefore, accept all of Dr. Tann's accounts as final, but this does not seriously lessen the value of her book. If, in fact, it stimulates other workers to produce their findings we may learn much in the next few years.

The author is to be commended for her references to sources following each account, though unfortunately these references are not linked to specific details. This may mean a hunt through both the Gloucester City Library and the Record Office before one can identify which document bears on a particular point one wishes to follow up.

One would appreciate, in a book describing so compact an area, some description of the links between the main clothier families as often an apparent complete change of ownership in a mill was, in fact, a descent through the female line. Thus the Fowlers of Dudbridge, the Chances, Roberts and Clutterbuck were all inter-related.

"Gloucestershire Woollen Mills" is well produced, in uniform format with David and Charles' previous books on Industrial Archaeology. One regrets that its somewhat specialised appeal imposes a price of 45/-.

R. L. Rose.

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### LECTURES 1967/68

#### S T R O U D

6th October	Aspects of Industrial Archaeology of Glass Industry	- Dr. J.R. Harris
13th October	Clothing Villages in Frome	- K. Ponting
20th October	Travel in North Wales	- R. Wilson
27th October	Black Country Topics	- N. Mutton
3rd November	Tramroads	- P.G. Rattenbury

## LECTURES (continued)

### S T R O U D

10th November	Canal Tunnels in W. Midlands	- A. Simpson
17th November	Economic Background of Textile Industry	- H.R. Perry
24th November	Textile Processes in Mills	- K.G. Ponting
1st December	Mill Layout	- L.F.J. Walrond
8th December	Mill Structure	- L.F.J. Walrond
12th January	Society Meeting	
19th January	" "	
26th January	To be arranged	
2nd February	Pottery Kilns	- K. Barton
9th February	History of Coal Mines in Somerset	- R.K. Bluhm
16th February	Sussex Ironworks	- D.W. Crossley
23rd February	Cranes	- R.S. Forbes-Taylor
1st March	Tinplate Industry	- Prof. W.E. Minchinton
8th March	Society Evening	
15th March	" "	

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### C H E L T E N H A M

18th October	Development of Coal Transport	- W. Slatcher
25th October	Industrial Archaeology of Little England beyond Wales	- R. Bowen
1st November	Lighthouses	- D.B. Haigh
8th November	Canal Tunnels in W. Midlands	- A. Simpson
15th November	Railways in Bristol Region	- P.J. Harris
22nd November	To be arranged	

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Details of Lectures in Gloucester  
will be issued when available.

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