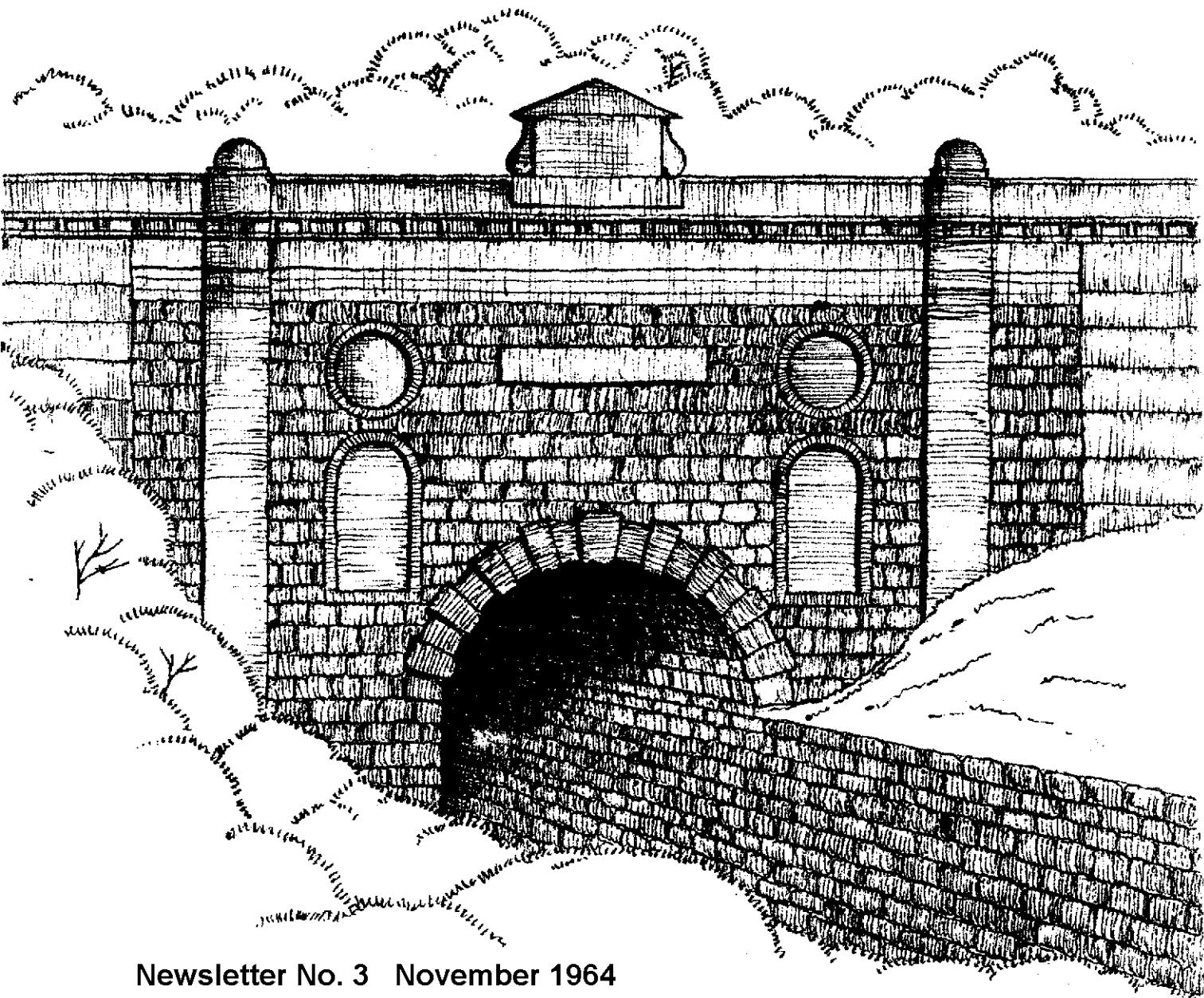


THE NEWSLETTER OF  
THE GLOUCESTERSHIRE  
SOCIETY FOR  
INDUSTRIAL ARCHAEOLOGY



Newsletter No. 3 November 1964

## EDITORIAL

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First of all I must thank the authors of several articles in this issue, articles which have required a considerable amount of research and which I consider are of great help in the study of industrial archaeology. If several of these items tend to be based on the Stroud area I think that this is inevitable at first with a Society whose main membership comes from that area, but I do hope that in future we shall also be able to print articles from a wider area to make this a Newsletter covering the County.

Since the last issue I consider that the most important development in your Society is the decision to support the Council for British Archaeology's national survey and to fill in their Industrial Archaeology report cards. As I see it this will mean that every member will be able to play his or her part and feel that he or she is helping in the enormous task of recording all of interest in this field. Naturally there will have to be some allocation of regions but I am sure that those responsible for sorting the completed cards will not worry if the same subject has been covered twice - much better this than it being missed altogether. In time a summary of recorded sites, with their map references, will be published and this will be kept up-to-date.

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To the industrial archaeologist the sight of the remains of a colliery, blast furnace, railway station or perhaps a mill, brings forth feelings of elation.

This echoes the views of Peter Lanyon, the artist who died recently, who expressed a view of beauty when giving evidence at a tin mining enquiry in 1961. Discussing the effect of the workings on the scenery he said: "I think there is as much beauty in man-made objects and in man's achievements as in that which is called natural beauty."

The opposite point of view was illustrated at an exhibition held at the end of October by the Institute of Landscape Architects when photographs were shown to illustrate how much has been done to resolve the conflict between industrialisation and the countryside. For example, photographs showing the effect of screening gravel pit machinery by trees and of the placing of electricity cables underground were exhibited. Most people would support this and would regard the ruins of a medieval castle in an entirely different light from those of a Cornish tin mine.

My own view is that there are quite a number of industrial monuments which fit into the existing landscape and these should be preserved in situ. We all have our own favourite sites but if lists were compared I think you would find many names common to all records. Other monuments threatened with demolition should be fully recorded and anything movable and worth preserving should be transported to a more suitable setting. Then, and only then, the landscape should be restored as far as possible otherwise I feel that in the layman's mind industrial archaeology will be associated with those ruinous coal mines etc. which do anything but improve the prospect.

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## MILESTONES OF THE STROUD DISTRICT

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Fellow members of the Society may be interested to know how many of the milestones of the turnpike roads survive in this district. On behalf of the national Survey of Industrial Monuments a survey of these relics was made in 1963 and part of 1964. The method was to locate them on the 6" Ordnance map (using both the current edition and the first edition, of the 1880s), and then to look for them on the ground. They are marked also on the 2½" map.

A surprising number of stones have survived. Although most of them are marked on the map as "Defaced", (I believe the plates were removed in 1940 to prevent the supposedly invading airborne German invasion from finding out where it was) at least one example of each trust's plate had survived, and several have been restored since the war by the County Surveyor's department.

Generally speaking the District was regarded as being the network of roads, with one or two exceptions, that radiates from Stroud. The Bristol-Gloucester, the Gloucester-Birdlip-Cirencester the Cirencester-Tetbury and the Tetbury-Dursley roads were taken as the framework, but were not themselves surveyed for milestones. Though the survey at first merely recorded existence, it was soon found necessary to record accurately the dimensions, as well as the location, of the stones, and it was then seen that each trust had a different style of stone and of plate. Stones and/or plates survive on the following routes:-

- 1) Stroud-Pitchcombe-Brookthorpe-Gloucester: half-way down Horse-pools Hill by a cottage on the left, and opposite the Four Mile House.
- 2) Stroud-Painswick-Cheltenham. One stone, opposite the Stratford Park bus stop really belongs to another route. There is a stone in the bank on the left between the new garage and the Pitchcombe Halfway House, and one on the right beyond Small's Mill: both are obscure and defaced. Two stones with good

plates remain, one on the right on the bend before the Adam and Eve, and the other on the right between Fiddler's Elbow and Green Street. There may be others on the rest of the route to Cheltenham.

- 3) The Old Painswick Road to Gloucester. Stones survive at Brownhill, Butt Green (Painswick), on the right shortly before the pitch up to Painswick Beacon, on the left just beyond the turning to Kimsbury House, and outside the King's Head at Upton St. Leonards, all defaced: but half-way down Stepping Stone Lane on the left is a stone with a very fine direction plate.
- 4) Stroud-Slad-Bulls Cross-Birdlip. On the right at the bend by Wade's Farm, in the wall of Slad Church, at Bulls Cross (the plate here is on a mounting block), on the right beyond Longridge Farm, on the right near Bidfield (with plate), on the right just beyond Foston's Ash, and in the wood on the right shortly before the junction with the Cranham-Birdlip road. On the Stroud-Chalford-Cowcombe Hill road there is a double-faced plate (London 100 miles) on the left just before Brimscombe, and a defaced double-faced stone on the left bend at the top of Cowcombe Hill just where the new road leads across towards Minchinhampton.
- 5) The Stroud-Rodborough-Cirencester road has stones, without plates: one fragment in a wall nearly opposite the "Albert" at Rodborough, and two fine pillars, one on Rodborough Common, the other on Minchinhampton Common. There is another defaced stone on the left near "Greystones" by an electricity services box; and beyond this there is a series all the way to Cirencester at one mile intervals, two defaced on the left before Aston Down airfield, another defaced one on the abandoned bit of road by Down Farm, the rest all bearing plates and on the right hand side of the road.
- 6) The Dudbridge-Nailsworth-Tiltups End road has several stones: one by the cricket ground, a fragment built into a garage wall just before the piano works, a restored stone with an original plate by Dee's garage at Nailsworth, and a stone on the left before Tiltups End. The plate for this stone has recently been re-discovered, thanks to Mr. E. Kimbrey, and will be replaced when this narrow stretch of road has been widened; at present it is being held in the Stroud Museum. Branches of this road have stones: opposite Rodborough Manor, and on the right just above the Iron Mills. There are two surviving, but defaced, stones on the Horsley road: one on the left before the Ragged Barn turning to Nymphsfield, the other on the left just before the junction with the Old Bath Road at Latterwood.
- 7) Dudbridge-Selsley-Procester Hill has two defaced stones: one on the left above Selsley, the other just before the Gliding Field entrance.

The group of roads called in the early 18th century the "Stroud Roads", from the Severn to the hills, has a fine series of stones, which fall into two related types. From the New Inn at Arlingham to the Bristol road, and from Alkerton to the base of Frocester Hill these tall pillars occur at intervals of roughly one mile. The stone by Frampton canal bridge, at the junction with the Saul Road, still bears the word Framilode cut into the base of the stone, but none of the others bear a plate or a visible inscription. From Claypits to Cainscross this series of stones bears curved plates, the tops of the stones also being more rounded than in the previous group. They occur at the Claypits and Eastington (built into a right-hand wall) close to the New Inn in a hedge; a plate set in the wall between Rye ford and Ebley, and of course at Cainscross (temporarily removed during road alterations). There is another at Westend, between Eastington Pike Lock and Whitminster. Another (defaced) stone between the Ship Inn and Stonehouse Church is however one of Group 8.

- 8) Stonehouse-Standish-Bristol Road series. Other stones, with plates, survive in Stonehouse itself (on the edge of the green) and on the left beyond Little Haresfield; and a defaced one stands on the left-hand edge halfway between the Horsemarling road and Stroud Green.

At the top of Frocester Hill is a handsome replaced stone and plate of a type also to be found half-way down the hill to Uley. Along the Old Bath road are several defaced stones - on the left near the turning to Woodcock Farm (Owlpen), on the left just beyond the Latterwood junction to Horsley, and close to Ashel Barn, beyond which the stones belong to the Tetbury-Dursley group. At Cockadilly a handsome plate has been replaced recently on a stone by the stile to Nympsfield - it is well worth a visit.

- 9) Tetbury-Avening-Minchinhampton. This route has most of its stones left, some with double-faced iron plates, but none bearing any inscription. From Tetbury, on the left just before the bend at Tetbury Upton; close to the Longtree road junction; on the right nearly half-way down the hill to Avening; on the right nearly at the top of Hampton Hill, and on the left along Windmill Road, Minchinhampton. There are also two similar stones, without plates, along the Avening-Nailsworth road.

This early coach road continued down through Hyde to Chalford and Bisley for Birdlip. On a back lane between Old Hill and Hampton Hill at Avening is a stone dated 1721 and inscribed with the name of Avening (Aueninge), which is thus pre-turnpike, and may be a sort of house-dating stone; at Hyde where the road forks to the Bourne is a fragment built into a wall and inscribed To Tetbury VI Miles; and by the stream bridge at the bottom of the Hyde-Chalford road is a stone which may have been a milestone,

but which bears no inscription. It seems likely that these last three stones were put up not by the turnpike trust but as local place names for the benefit of travellers - but the writer has no real evidence on this.

- 10) Finally there are stones on part of the old Cirencester-Bisley-Painswick-Gloucester route, much of which is now at best a mere track. Go down the lane which turns left off the Daneway-Edgeworth road and on the right before reaching Tunley is a stone on which can still be seen the direction VII miles to (Ciren)cester. Three other stones remain on this route: on the right along Limekiln Lane between Waterlane and Bisley; outside Bisley on the right by a garage, and on the right along the road to Catwood beyond Stancombe Pike. Finally, in Bisley itself the wall by the Lock-up holds a stone which bears an iron plate giving X miles to Gloster J. Clissold, which seems to be a local effort like the Avening stone.

Most of the stones are in fair condition; a number have had the plates replaced, on a few the plates have never been disturbed. The styles of lettering on the plates vary, some having the letters incised, others being cast in relief; the plates are often of different style and shape. However, some of the stones, chiefly those which had letters incised into the stone, are either damaged or out of alignment, or even disappearing into the rising turf or under the overgrowing vegetation. The County Surveyor's department, when its

attention is drawn to a stone removed from its position or in danger for other causes, will take steps to safeguard it, or to restore the plate when this is found. Thus a stone at Alkerton has been re-erected, and also one at Brookthorpe, while plates and/or stones have been restored at the top of Frocester Hill and the plate at Tiltups End will be replaced in due course. The chief dangers seem accident or negligence, and in both cases if the attention of the County Surveyor at the Shire Hall is called to a threatened stone, it may be rescued or preserved. It would seem a not unworthy task for the Society to make a regular check on these (and other) relics of the industrial past to preserve them from needless destruction.

Note: An account of the Milestone Survey should appear in the forthcoming volume of the Bristol and Gloucestershire Archaeological Society Transactions, and a map and schedule of the survey can be seen in the Gloucestershire Records Office or the Stroud Museum. Miss G. Davies of 11 Midland Road, Gloucester is surveying milestones around Gloucester.

## VISIT TO THE STROUDWATER & THAMES & SEVERN CANALS,

SEPTEMBER 5th 1964

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In the last issue Mr. H.G.W. Household was kind enough to let us publish his interesting notes on these canals so it is not proposed to give a lengthy description here of the actual places visited.

The response exceeded all expectations and nearly fifty members and friends enjoyed the last summer outing of this year; although the weather was misty to start with it later cleared and became a hot sunny day.

Starting at Walbridge, Stroud, Mr. Household showed us the Clerk's office built by Fletcher who added wings to the original design thus improving the composition. Walking through the garden we saw the start of the Thames and Severn, the first lock - now a weir - and also the site of the filled-in basin.

Next to Framilode, past the end of Frampton-on-Severn's lengthy green. It was at the latter, by the Gloucester & Berkeley Canal, that we had to wait for a pleasure cruiser and a "Shell" tanker and had time to admire one of the delightful Grecian bridge-keeper's lodges, almost certainly designed by Telford. At Framilode itself we walked along the Stroudwater canal to the entrance basin, passing on the way former bargemen's cottages and the back of a terrace which was considered to house workers from the local ironworks. By the basin which is jealously guarded against trespassers by the local postman, we stood on the original swing bridge (now demolished) and saw the lock leading into the Severn. On the east side of this large, silted up basin still stands the three-storey warehouse.

We returned through Saul and the coach just managed the track along the Gloucester & Berkeley so that all could see the fascinating junction between the two canals; we also traced the original line of the Stroudwater before it had to be raised. Walking next along the Stroudwater towpath towards Whitminster we passed moored boats of all shapes and sizes, but the most interesting was the long boat "Sarah", seven feet wide, which Mr. & Mrs. Tucker kindly permitted us to look over.

We then followed the line of the Stroudwater, above the double lock at Ryeford where there are three circular openings for land drainage, and on to Brimscombe where Thomas Cook, the master mason from Painswick, built the agent's house, office and warehouse group. This building is unfortunately shortly to be demolished.

As we were running behind schedule Daneway had to be omitted and the coach went straight to the Tunnel House Inn for lunch. Several members explored the tunnel for a few yards and Mr. Household gave us an interesting description of how the seven feet wide long boats had wings put on and were legged along the sides of the tunnel, while the twelve Thames boats could possibly have been legged by someone lying on top of the load. There was one-way traffic, alternating every four hours.

We walked along the canal path to King's Reach, now rather overgrown, and then back to the inn to rejoin the coach.

At Thames Head we got out to look at the agent's house and the quay serving Tetbury. The road bridge here has been enlarged and a plaque set in the wall by the County Surveyor's department.

Just before reaching Cricklade, near Latton, we saw another agent's house, though one would not normally identify this from the main road as the canal has been filled in. The domestic portion is under the pediment with warehouses on either side.

There followed a longer run to Inglesham, just south-west of Lechlade, where after a short walk across the fields, we saw the junction of the canal and the River Thames. We were fortunate to be shown the well preserved interior of the round house through the courtesy of the tenants, Mr. & Mrs. Spanjer. After admiring the canal prints on the walls we climbed to the circular bedroom above and appreciated the difficulties encountered in moving furniture up the very narrow curved stairs in the wall behind the chimney flue.

We completed our tour at Lechlade where we had tea on the old wharf and also saw the fine agent's house, warehouse, stables and dook. Thus ended a most interesting and instructive days outing.

An extract from Mr. Household's notes was published in the Stroud News & Journal of the 11th September and this led to a letter from Mr. Rowbotham concerning the design of the Stroudwater towing path. The following note should therefore be read in conjunction with Mr. Household's earlier historical account.

Stroudwater Navigation Towing Path. As it has been asked how long the path remained in the condition described on page 5 of Newsletter No. 2, Mr. Household tells us that it was for fifty years only. In 1827, under pressure from traders and from the managing committee of the Thames & Severn Canal Company, all of whom were anxious that the improvement should be made before the opening of the Gloucester & Berkeley Canal, the Stroudwater Company reluctantly agreed to make their towing path usable by horses.



## C O R R E S P O N D E N C E

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To the Editor, Newsletter etc.

20 Sept 64.

Sir,

I am engaged in a survey of Turnpike roads and Toll-house sites in the Stroud District, that is the area bounded by the Bristol Gloucester road, the Gloucester-Birdlip-Cirencester road, the Cirencester-Tetbury road, and the roads from Tetbury to Ashel Down by Kingscote and thence to the top of Frocester Hill, including the road thence to the Arlingham-Newnham passage.

I would be very grateful for any information on either the roads or more especially the Toll-house sites. For example, photographs of vanished Toll-houses; dates (if known) of when they were built; dates of de-piking; personal detail - names, duties, charge-boards etc. of Toll-house keepers. Most of the sites have already been visited, surviving houses noted or recorded and their occupiers met. But other than the site, I lack information on Toll-houses which no longer exist.

Any such photographs etc. lent would of course be returned. The survey is intended to form part of the Survey of Industrial Monuments and may form the basis of an article in the Bristol & Glos. Archaeological Society Transactions. Acknowledgement of the source of information would of course be made. It would alternatively be possible for me to visit any informant during the next twelve-month.

Christopher Cox,  
29 Bolingbroke Grove, London, S.W.11.

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## M E M B E R S H I P

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The number of members of the Society at present is 83, of whom 6 are junior members.

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Gloucestershire Society for  
Industrial Archaeology  
Newsletter No. 3 November 1964

## NATIONAL SURVEY OF INDUSTRIAL MONUMENTS

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The following is a list of the various types of industrial monuments which it is intended to include in the survey. It is by no means comprehensive but will serve as a guide.

I. POWER

A horse gin	windmill, other types
watermill	engine house and engine
do. (turbine)	(steam)
windmill, post	explosive works.

II. TRANSPORT

small harbour	canal lock
lighthouse	do. aqueduct
shipyard	do. inclined plane
toll house	railway station
road bridge	do. viaduct
milestones	warehouses

III. RAW MATERIALS

Coalmine with buildings	blast furnace
other mines	forge
slate quarry with buildings	industrial farm
arsenic works	

IV. MANUFACTURING

smokehouse (fish)	pottery
brewery	glasshouse
ice house	brickworks
textile mill	ropeworks
tanyard	

N.B. There is a very wide range to choose from in this section.

V. INDUSTRIAL HOUSING

Workhouse  
dwelling/workshops (domestic industry)  
single dwellings or small groups of dwellings  
'model housing'  
a small industrial town  
'the services' - drainage, lighting, p. transport, etc.

Rex Wailes.

Gloucestershire Society for  
Industrial Archaeology  
Newsletter No. 3 November 1964

# INDUSTRIAL ARCHAEOLOGY CONFERENCE AT CARDIFF,

Saturday 17th October, 1964

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A party of five members attended a stimulating one-day conference held at the National Museum of Wales in October. At the rear of the hall an interesting exhibition of photographs, scale drawings, maps and record cards provided food for thought; for example the drawings of a beam engine, bridge and station were prepared by students of the Welsh School of Architecture. Could not English students do useful work like this?

Although most of the research work and the slides shown referred to Wales, the principles apply nationally and it is therefore useful to put on record some of the speakers' contributions.

## "Recording of Industrial Monuments"

D. Morgan Rees, Keeper of Industry, National Museum of Wales.

Survey work can be carried out by many different types of people with different skills but one thing they have in common - they all fill in C.B.A. Industrial Archaeology report cards. These 8" x 5" printed cards are divided into fifteen sections, the section for the Description being much the largest and if possible the records are typed. Written cards are however accepted providing they are legible. The blank reverse side can be used for a site plan, guide to rough dimensions or a photograph stuck on. Each completed card has its own polythene envelope into which can be put any additional photographs or drawings. Every year an up-to-date list of these recorded sites is prepared for circulation.

Schools have been brought into this work; one in Mountain Ash has already filled in twenty-two cards which are completed by pupils under the guidance of masters.

P.G. Rattenbury, Cardiff.

Mr. Rattenbury gave tips for the person who makes records of industrial archaeology on his own as a pleasurable hobby. On the site he often uses a portable tape recorder and later transfers the notes to a card index system.

Of Ordnance Survey maps he finds the 2½" outline edition the most useful as this can be coloured to suit one's own system. For detail work 6" maps are used.

He particularly stressed the need for being observant all the time; such details as the manufacturer's name on an old street lamp or a manhole cover may give a clue to an ironworks not previously known about.

His coloured slides included many of Gloucestershire, including Bullo harbour, a Fowler agricultural engine at Marshfield, the sparse remains of the iron wharf at Bishop's Wood on the Wye, and Tintern furnace which had been recorded by the Historical Metallurgy Group of the Iron & Steel Institute.

At the end of this talk a warning was given about the risks of working on one's own on dangerous sites. It was recommended that an assistant should always be taken on such occasions.

### "The National Survey"

#### Rex Wailes, Consultant to Industrial Monuments Survey.

Mr. Wailes considered that a craftsman was an industrialist as soon as he employed others and that an historic monument was something you could not put in a museum. The important thing was to decide what should be preserved and what needed to be recorded only.

There are three types of survey :-

- (1) Local
- (2) Area or Regional
- (3) National

With (1) the Midland Universities have been the greatest help.

The urgency for this survey is due to :-

- (a) High scrap value of machinery etc. Only large firms can afford not to scrap their out-of-date machinery.
- (b) High site value, mainly in towns and cities.
- (c) Nationalisation of industries. Here new brooms sweep clean.
- (d) Industries are susceptible to take-over bids, e.g. breweries.

For preservation, there are three main criteria :-

- (a) Value of monument, either locally, regionally or nationally.
- (b) Accessibility
- (c) Protection, someone to prevent hooliganism etc.

Mr. Wailes' slides included several of Dumbleton water mill in the north of this county where the overshot water wheel is still used for the farm.

### Local Organisation.

#### K.J. Hilton, Director of Lower Swansea Valley Project.

This group, formed in June 1963, has divided the area amongst local societies and prepared "A Directory of Sites" of which some have little left to show and three have disappeared already since being recorded.

Twenty active members took C.B.A. report cards and they have been coming back for more ever since. It was pointed out that no-one should be frightened about completing cards as they can always ask for advice from others in the group. The important thing is to get the cards on the way thus drawing national attention to the existence of these sites.

This group had agreed to supply the C.B.A. News-sheet with industrial archaeology news once a year. They also have courses of lectures and summer field excursions. The filling in of cards is mostly carried out in the spring and summer, leaving the winter for cross checking on cards, records etc.

The advantages of group working were summarised as follows :-

- (1) No duplication of cards.
- (2) Sharing of common knowledge.
- (3) Circulation of literature.
- (4) Sharing of transport and other expenses.
- (5) Social value.

#### "The Official Contribution"

Mr Lewis, Deputy County Planning Officer, Monmouthshire.

Mr Lewis said that the County had been filling in C B.A. report cards and had also prepared a map of industrial sites. He divided field work into two headings.

- (a) Actual recording of sites and buildings. Maps show both former industrial sites and those still being used. Since 1947 all changes in land use have been recorded on 25" maps. The maps are accompanied by a report which sometimes gives the commencing and finishing dates of an industry so are valuable for industrial archaeologists.
- (b) Obtaining data associated with the site e.g. manuscripts. These are rarely on the site and are sometimes in the possession of old employees.

He suggested that the County Education Officer be approached, followed perhaps by a conference of history teachers and then students could do practical work related to their studies.

G. N. Crawford.

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## BOOK REVIEWS

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THE INDUSTRIAL ARCHAEOLOGY OF COUNTY DOWN. E.R.R. Green. Published by H.M.S.O. Belfast, 1963. 99 pp. 4 maps. 2 drgs. 63 photos.

The first published regional survey of industrial archaeology and a first-class example for those hoping to produce similar studies. The layout is simple; sections devoted to allied industries, with a general introduction, followed by a detailed inventory of sites; with photographs grouped at the end of the book. An excellent bibliography and index completes the usefulness of this volume. To be particularly recommended is the succinct English of the inventory of sites and the beautifully clear drawing of a windmill which not only shows what is there, but also how it works.

I.M. Parsons.

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THE CHANGING FOREST. A social enquiry into the Forest of Dean by Dennis Potter. pp.144. Published by Secker & Warburg 1962. Price 11/6d.

Written by the son of a forester who has recently left the pits, this book is worth reading as a background to the rapid change of life in this region and it shows how the pits no longer dominate the scene.

G.N. Crawford.

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## INDUSTRIAL ARCHAEOLOGY IN BRISTOL

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Our neighbours in Bristol have much of interest on at the moment, including a course of twenty lectures at The New Folk House with Dr. Buchanan and Mr. Cossons as tutors. In this course they will be concerned with both a general survey of the effects of industrialisation on society, and a more detailed study of particular aspects of industrial development in the region of Bristol and the south west. The course will include discussion of the methods of industrial archaeological research; and some practical experience in the Bristol area of conducting and writing up a survey. Members of the class will be encouraged to undertake a small individual research project in the course of the year.

In addition, the newly founded Centre for the Study of the History of Technology at the Bristol College of Science and Technology held on October 31st a conference to co-ordinate a survey of material in the Bristol region. The speakers included Mr. K.

Hudson, Mr. H. Milligan (Manchester City Library), Mr. S. Sherlock and Dr. Buchanan.

An article by Dr. Buchanan in the Bristol Evening Post of October 27th included several interesting facts and two photographs. The following is an extract from this article :-

"Bristol has always been notable for the range and diversity of its industries. Centred on the port and the commodities which this has brought into the city, Bristol has throughout its history attracted many trades and processes into its vicinity. Some of these, like the manufacture of glass, soap, snuff and sugar have disappeared almost without trace. Others are on the point of extinction and it is these which call for the urgent attention of the industrial archaeologist.

The 18th century shot tower on Redcliffe Hill, for instance, has now closed down to make way for extensive road improvements. Likewise part of the nearby premises which contains the only remaining glass-cone in Bristol. Admittedly, the cone was truncated some years ago, but the lower part, fitted with a new roof, is still in use as a store house.

Also due for demolition in the near future is the bascule bridge (one which tips up on end) and the engine which operates it, at Bathurst Basin. This engine probably enjoys the distinction of being the last stationary steam engine in service in Bristol. The bridge itself is remarkable because it used to carry a "mixed-gauge" railway track to the southern side of the Floating Harbour, and it still retains the girder which carried the outside or "broad-gauge" rail. Fortunately Bristol Railways have agreed to let the Bathurst steam engine go to Bristol City Museum, where a representative collection of industrial exhibits is being built up for the new Department of Technology.

Other works of importance to industrial archaeology, such as Brunel's magnificent Temple Meads Station, with its hammer-beam roof and elegant street frontage, have already been placed under preservation orders. Yet other buildings, such as the Great Western cotton factory in Barton Hill, and the Christopher Thomas soap factory in Broad Plain, have been converted successfully to other uses.

But the fate of the B.D 6, the fascinating dredger designed by Brunel himself, which was scrapped only a couple of years ago, shows how precarious is the existence of many of these relics. One wonders how long the last surviving Severn trow - the "Safety" - will be allowed to be at her moorings by St. Philip's Bridge, dirty and dilapidated after many years in the coal trade, before it is scrapped. Could not Sir Hugh Casson incorporate it into his imaginative scheme for the new river front ?"

## B R I S T O L 6 M I L E S

Mr. Christopher Cox in his excellent article on 'Milestones' asks our co-operation in bringing to the notice of the appropriate authority any threat of damage to the interesting stones with which this county abounds.

During summer visits to Bristol the writer noticed that the milestone at the Almondsbury roundabout end of the M4 had been partially moved and was acting as a support for the bucket of a large piece of earth moving machinery.

Mr. R.A. Downs, the County Surveyor, was notified and passing motorists will now see a protective fence which has been erected to prevent further damage.

We are most grateful for this prompt action and members are asked to report any similar cases requiring attention.

Warren Marsh

## G U N ' S M I L L ,

situated in the parish of Abenhall in the Hundred of St. Briavels.

The Journal of Industrial Archaeology Volume 1 Number 2 lists on page 133 two dozen surviving 17th and 18th century blast-furnaces. Of these, ten require a detailed survey and following the recent 'rediscovery' of Gun's Mill by John Strange, one of your committee members, several of us have carried out a building survey of the site. We hope the Historical Metallurgy Group of the Iron and Steel Institute will complete the survey at a later date.

The following Society members and friends contributed their time and energy on two successive Sundays in October :-

A.S. Apperley and son (photographers), Trevor Ashall, Christine Buckle, Roger Carter, Mike Eastwood, Warren Marsh, Janet Powell, Stephen Rudd, John Strange and Harry Townley.

The old furnace building was converted to a paper mill in the middle of the 18th century and now forms part of a farm. The structure is very overgrown with ivy at one end but the dates 1682 and 1683 cast into some of the external beams provide reliable clues to the date of construction. The mill is two miles south of



Mitcheldean (1" O.S. map 143 reference 675159) and any of you who wish to view the structure should first ask the permission of the farmer, Mr. Barrington. Above this farm is the old pond, now levelled and cultivated, and also the shells of two other smaller mills beyond. These always belonged to the one owner according to official documents.

The pig iron was produced from cinders, ore and limestone, all of which were available in quantity nearby. There is little evidence of a short tramway which may have existed between the mills. Most of the pig iron produced from Forest furnaces was sent up the Severn to the Stour valley forges.

A very brief history of the mill workings is given below. These facts were obtained from various directories in the County Records Office, Gloucester. In particular, Volume LXXII (1953) of the Bristol and Gloucestershire Archaeology Society's Transactions gives a detailed account of the workings of the Forest furnaces and forges and is well worth reading in connection with this subject.

- 1672 First recorded date of the iron activities of Paul Foley of Stoke Edith, Herefordshire. The Foleys became a very wealthy family as the result of numerous iron furnaces and forges in the Forest of Dean. In the first decade of the 18th Century the Foleys and partners were responsible for 3,500 tons of pig iron out of a total of 4,950 tons produced by the Forest furnaces. (Stoke Edith Park was built for the Foleys at the end of the 17th century and the body of the nearby church rebuilt by them in 1740-2. The Communion rails and monument railings are appropriately of wrought iron).
- 1705 - 6 First mention of the workings of Gun's Mill, which had a very erratic career.
- 1707/08/10/12/13/25 During these years the furnace was temporarily idle.
- 1733 - 43 Sometime between these dates the mill was converted to paper production. In 1743 the first Mr. Joseph Lloyd is recorded as seeking labour for his paper mill.
- 1761 Mr Joseph Lloyd died and was succeeded by his widow, Hannah, and son, also a Joseph.
- 1779 St. Anthony's well, which provided the water for the wheel, was noted for yielding "water which was an infallible cure for the itch".

- 1816 The partnership between Joseph Lloyd the elder, and (a third) Joseph Lloyd the younger, was dissolved. All three mills are recorded for the first time, e.g. Gun's, Middle and Upper Mills. Those two upstream were washing mills and also belonged to the Lloyd family, together with the land in that valley.
- 1847 The mills passed to George Lunnon. \*
- 1860 New owner: Aaron Goold. \*
- 1866 A further change of title to the Gun's Mills Paper Company. At this time coloured papers and cartridges were being produced.
- 1870 The proprietors of the Company are recorded as Messrs. Goold & Co. Manager: Henry Affleck. Owner: Joseph Skipp Lloyd, SCL, a Cheltenham barrister.
- 1876 Brown paper was being produced on a 53" wide machine.
- 1900 The oldest inhabitant now living in this area remembers in this year the rolls of paper being conveyed by horse and cart to Grange Court Station, four miles away.

In addition, the County Records Office possesses a bill dated 28 September 1819 (with an 1818 watermark) headed Joseph Lloyd & Son, Papermakers, Gun's Mill near Gloucester.

Any further information on this subject will be received with interest.

Warren Marsh.

\* But see under 1870. Did the mills ever part from ownership by the Lloyd family?

It is always pleasant to have news of other Societies and it is interesting to read the recent Annual Report of the Lincolnshire Society. They have formed an Industrial Archaeology Group who are at present completing record cards and a preliminary survey of tollhouses has been finished. There is also a County Railway Survey being undertaken. An interesting sidelight is that an Industrial Chaplain has agreed to keep an eye open for early machinery in the factories he visits.

Wind and water mills have a separate section in the Report and this mostly concerns the financing of restoration work and annual upkeep. The Society is investigating the creation of a Lincolnshire Wind and Watermill Trust to do this work.

The Society obtains publicity by exhibiting at agricultural shows and one table on Industrial Archaeology showed why records of recently defunct industries should be preserved.

G.N. Crawford.

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## FIELDWORK

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### Thames and Severn Canal

Due to some lengths being filled in a detailed survey of the Thames and Severn Canal has now become an urgent matter. Will all members and friends who can spare a few hours to help (no special skills are necessary), please meet at the Chalford Round House at 10.30 a.m. on Saturday, 5th December, bringing a picnic lunch if you can stay for the afternoon as well. If you cannot come along until after 10.30 you will be sure to find someone along the canal banks nearby.

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### Small's Mill, Pitchcombe.

A detailed survey has been made of the remains by Mr. Walrond and the Editor.

# COUNCIL FOR BRITISH ARCHAEOLOGY REPORT CARDS.

As mentioned elsewhere, members will be offered these cards to complete, so for those who have not seen them the layout is shown below :

NATURE OF SITE (Factory, Mine, etc.)			COUNTY	Ref. No.
GRID REFERENCE OR LOCATION	INDUSTRY.	DATING.	PARISH/TOWNSHIP	DATE OF REPORT
DESCRIPTION: dimensions; present condition; architectural features etc.				
(Further remarks or photo/sketch may be recorded on the back)				
MACHINERY AND FITTINGS.				
DANGER OF DEMOLITION OR DAMAGE.				
PRINTED, MANUSCRIPT OR PHOTOGRAPHIC RECORDS.				
REPORTER'S NAME AND ADDRESS :-			Return to :-	
INSTITUTION OR SOCIETY:-				
C.B.A. INDUSTRIAL ARCHAEOLOGY REPORT CARD.			M.3070	

Mr. Douglas Hague of the Royal Commission on Ancient Monuments, Aberystwyth, has prepared some useful notes for filling them in. He says that "Without doubt, the fullest possible record is the most valuable, but it cannot be over emphasised that any accurate record, however meagre, is better than none. Some helpers may have been discouraged by the sight of a completed card compactly typed, bristling with MSS and esoteric references. It is better to send in a hand-written card (provided it is legible) than to put it aside in the hope that some documentary evidence relating to further history might come to light."

Good and informative photographs not exceeding 5" x 8" are useful and may be fixed to the back of cards. It is important to state the whereabouts of the negatives and the existence of any further photographs.

The exact position of sites should be given and this is best done by using the National Grid. However, should no gridded map be to hand, then bearings and exact distances from at least two clearly marked sites (such as parish churches) should be given.

"The card can also be used for recording the existence of drawings or records relating to any industry or site, even if this has been destroyed and its position lost."

Mr. Hague suggests that when noting the condition, buildings are divided into four categories :-

- I. Intact - in use or disused.
- II. Roofless - function and details clear.
- III. Ruinous - accurate survey and restoration possible.
- IV. Ruined - site identified by debris etc. Plan impossible without excavation.

Cards will be available for members attending the present series of lectures, at Stroud Museum or from any of your Committee Members. Subjects that have already been covered include the mills in the Frome valley and stone mines around Stroud.

Completed cards should be sent to Mr. C.H.A. Townley,  
Rodborough House, Rodborough, Stroud.  
for sorting and listing.

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VISIT TO FAIRFIELD ENGINEERING CO. LTD.'s WORKS  
AT CHEPSTOW AND LYDNEY DOCKS.

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12th DECEMBER, 1964

A small party of members will be travelling by car to Chepstow to look at the works where the decking for the Severn Bridge is being fabricated. The inspection may be rather superficial as we shall not have a guide, and much of the machinery is not in use on a Saturday. In the afternoon Mr. Jack Bell, a native of Lydney, has kindly offered to show us the sparse remains of the canal and dock area there.

We plan to meet at the Chepstow works at 10.30 a.m. and in the afternoon at 2.30 p.m. outside the church between the main road in Lydney and Lydney Docks.

The choice of cooked or sandwich lunch is left to individuals. As this excursion is of limited interest it is not intended to make a coach booking. If you can make your own transport arrangements and would like to join us you will be most welcome but please send a card to the Secretary first so he knows how many to expect. The distance from Gloucester to Chepstow by road is 29 miles.

# REPORT ON THE ENTRANCES TO THE SAPPERTON CANAL TUNNEL .

## History

The tunnel, which forms part of the summit level of the Thames-Severn Canal, runs for  $2\frac{1}{4}$  miles from Sapperton at the North-West end to Coates at the South-East end.

(For the convenience of this report, however, it is proposed to write of Sapperton as the "West" end, Coates as the "East" end, and of the "North" and "South" banks.).

The tunnel was constructed between 1783 and 1789, to the design of Robert Whitworth, the canal engineer. I have found no evidence as to whether Whitworth designed the entrances himself, or whether an architect or mason was employed. The contractor for the tunnel was Charles Jones, but he proved unsatisfactory, and was dismissed before the work was completed. As the entrances were probably only built towards the end of the job, it is unlikely that they are Jones' work.

At first the canal was busy, carrying traffic between Bristol, Wales and the Severn Valley to the West, and London and the Home Counties to the East. Demand fell rapidly after the building of the railway line, and difficulties were aggravated by the shortage of water. The summit level is above the natural spring line, and a system of reservoirs and aqueducts, together with a Boulton and Watt steam engine at Thames Head, were necessary to maintain an adequate supply. By the end of the nineteenth century the canal had fallen into disuse, and it was officially closed. The tunnel is now virtually dry, and is blocked by falls of rock.

## Aims of the Proposals

In considering the restoration of the tunnel entrances, there are two principal objectives to be borne in mind :-

- (a) Repairs must be carried out as to reduce future deterioration to a minimum, thus preserving them for posterity.
- (b) Any further work should aim at restoring and improving the entrances and their surroundings, in such a way as to encourage people to visualize how they appeared when the canal was in use. Such restoration must take second place to object (a), and should stop short of wholesale reconstruction, which might cast doubts on the integrity of the original work.

The late eighteenth century, when the tunnel entrances were designed, was an age that admired the "sublime and picturesque". Poets settled in the Lake District, artists painted crags, ruined

abbeys and waterfalls, while architects and gardeners enhanced the emotional impact of the countryside with Gothic follies and ivy-shaded walks. In restoring the entrances, it is important not to destroy this romantic effect.

#### The East Entrance: Coates

The entrance is at the end of a deep cutting through the greater Oolite, and stands at the corner of Hailey Wood, near the Tunnel House Inn.

It is of classical design, with two attached Doric half-columns supporting a simple entablature. Old prints (e.g. 282/1 in the County Records Office) show that this was originally surmounted by a parapet, with a small pediment over the centre. Above the columns there were finials. The main masonry is heavily vermiculated, with the arch voussoirs emphasised, and with niches between the columns and the arch. The whole conception is on a grand scale, even if academically somewhat incorrect.

Up to the cornice the masonry is in good condition, apart from some movement on the South side, and some missing quoins at the extreme South end. Most of the cornice is missing or broken, but there is a sound length over the South column. Above the cornice everything has gone: most of it into the mud of the canal below. I am told the damage was done by servicemen stationed nearby during the war.

Since the days of print 282/1, the beech trees have grown up round the cutting and entrance. In general, they enhance the effect, but the four trees immediately behind the column on the North side, and the small elm behind the masonry over the arch ought to be removed. Their roots must be penetrating into the backing of the masonry. They should not be grubbed up by mechanical means, as that would strain the stonework: they should be felled, and then the stumps dug out manually.

The stones should be rescued from the bed of the canal, and sorted to determine how many can be re-used. A final decision cannot be made until then. I suggest, however, that it might prove wise to make good the missing cornice and brackets, even if new stone is necessary, as the cornice helps to throw off the water, and to protect the masonry below. Above the cornice, only so much should be restored as the old stone will do. The opportunity should be taken to build in a damp proof course. The quoins at the extreme South end should also be restored.

For the refixing and for pointing up cracks in the existing masonry, a weak gauged lime mortar should be used. A strong cement mortar would hold back the moisture and eventually damage the stonework.

This work is all necessary to satisfy aim (a). For aim (b) the following work is also desirable :

(i) Clean out the canal say for 10 yards into the tunnel and 50 yards out of it, removing all silt, leaves, branches and other rubbish.

(ii) Restoring the walls of the canal for the same 50 yards, including cutting out three or four saplings and rebuilding two collapsed lengths of masonry.

(iii) Closing the path down on the North side of the entrance - where there is already a notice "Danger". In the days of print 282/1 the base of the North half column was exposed: this has now been covered by earth eroded by people scrambling down. This earth should be removed.

(iv) At present the public is kept off the crown of the archway by an unsightly post and wire fence - which can easily be passed. Some form of barrier is necessary, as without a parapet there is an unprotected sheer drop to the canal bed below. I suggest that the original dry stone wall, now very dilapidated, be rebuilt, and the spaces between it and the ends of the entrance blocked by planting, perhaps with holly bushes.

#### The West Entrance: Sapperton.

At the West end the tunnel passes through a fuller's earth deposit, and this means that the archway is surrounded by mixed deciduous trees, in place of the beeches at the East end. The approaches, whether by the towpath from Daneway bridge or by footpath from Sapperton are very overgrown.

The design of the entrance is Gothic, but has a semi-circular arch with a giant keystone. The parapet over was battlemented, with a pinnacle at either end and one in the middle. This is shown best on a Lyson's print (282/2 at the County Records Office), which is plate 16 in some editions of the Collection of Gloucestershire Antiquities: a book published when the arch was some ten years old !

At this end, too, the parapet has been toppled into the canal, and all the battlements and the centre pinnacle are missing. Some of the coping stones are lying in the wood, and one has been used for a fireplace. The two end pinnacles still stand, rather overgrown and mutilated.

There is a lot of growth, mainly hazel and ivy, growing in the face of the entrance and above the crown of the arch. These should be carefully cut down, and the roots either dug out or treated with weedkiller. I suggest that the large elm tree



behind the South abutment should also be felled; its branches sweep right over the parapet, it casts the archway into shadow, and its roots through the fuller's earth must penetrate behind the masonry.

The battlements and coping should be rescued from the canal bed and the wood, and sorted. Until that has been done it is impossible to assess how far the original can be restored. If sufficient are recovered, I suggest they should be refixed, and any missing ones replaced with new stone. They should be built up off a damp proof course, bedded in weak gauged lime mortar, and secured with non-ferrous dowels.

The main cracks in the stone facing should also be pointed up, after the growths have been removed. The few cracked and missing bits of stone should be left as they are. The cast iron milestone on the South side should be cleaned off and painted.

This work is all necessary to satisfy aim (a). For aim (b) the following work is also desirable :

- (i) Clean out the canal for say ten yards into the tunnel and fifty yards out of it as at the East end. At the West end, however, owing to the more sheltered position and the fuller's earth subsoil, there is much more vegetation to clear. Weed-killer might help here.
- (ii) Restore the walls for the same fifty yards, as at the East end. Again, there are more saplings here, which have caused more bulges and collapses.
- (iii) Clear the approach paths, and repair the stiles.

#### Water for the Canal

If, as recommended, lengths of canal are cleared at each entrance, it would be pleasant and would enhance the verisimilitude if they could be filled with water.

If adequate water can be obtained, I suggest that a low engineering brick retaining wall might be built ten yards inside each end of the tunnel, and the excavated soil used to build dams say fifty yards outside. This, however, is all very conjectural, and it must be emphasised that the clearing to the canal would be a great improvement even without water.

#### Labour, expert and volunteer.

Volunteers, under supervision, could carry out all the work listed under aim (b) at both ends of the tunnel, except for building the dry stone wall, item (iv) at the Coates end.

Volunteers could also remove the various growths and saplings at both entrances: ropes and ladders would be useful for this. Volunteers could not fell the four beeches at the East end, nor the large elm at the West end: perhaps Lord Bathurst has a team of foresters who could do this. Volunteers could dig up the stumps.

Volunteers could also hoist up, clean and sort the stones which have been pushed into the canals.

Skilled labour would be required for relaying the fallen stones, together with any new stone needed, and for pointing up the open joints. This could probably be largely done "overhand" from the top of the tunnels, so little scaffolding or plant should be needed. The work could be done by any reputable local contractor with men skilled in Cotswold stonework.

Christopher Bishop.  
September 1964.

The situation at present is that various official bodies are being approached in the hope that a grant will be available to enable this valuable restoration work to be undertaken.

Editor.

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#### 1964 CHRISTMAS CARDS

An excellent black and white engraving of 1781 has been copied and is available in the form of a suitably inscribed Christmas Card, size 5" x 3½". This engraving shows a gaily decorated boat on the canal in front of Stonehouse Church carrying members of The Company of Proprietors of the Stroud-water Navigation.

These cards are tastefully printed with the greeting "With Best Wishes for Christmas and the New Year" inside. The purpose of this venture is to assist in promoting the name and aims of your society and you are invited to purchase these Christmas Cards in unlimited numbers. The cards complete with envelopes are priced at 6d each and are immediately available. You will find a loose order sheet in this Newsletter; please send it with remittance to :-

Mr. W.G.H. Robins, c/o British Nylon Spinners Ltd.,  
Brockworth, Gloucester.

## CHANCE FINDS AT THE CHINE.

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A beautiful Cotswold Residence serves as a Boarding School, crowded with lively youngsters and bustling with life. Small wonder that after 10 years it needed a new cess-pit. So the old gardener set out to dig on the steep slope; some 9 - 10 inches of garden soil were removed, then he went on with pick-axe, spade and shovel to break loose the hard-baked limestone-rubble- 3 feet, 4 feet, 5 feet deep. Gradually he vanished from the sight of curious visitors, throwing out shovelful after shovelful.

Now the old gardener belongs to the generation whose keen eye and steady hand can tackle any job and never fail to notice anything. At the depth of 6 feet, still among broken rock, he found the bottom of an old bottle,  $3\frac{1}{2}$  inches diameter, thick glass incrusted with lime, the incrustation itself gleaming with a strangely golden lustre.

At the same depth a little white clay-pipe came to light, damaged, partly broken, - but there it was: a tiny white cup, hardly  $\frac{1}{2}$  an inch across, with a narrow stem. At the depth of 7 feet the neck of a bottle appeared among the rubble, thick green glass, crinkled and brittle like a glittering spider-web, about  $2\frac{1}{2}$  inches long, only  $\frac{7}{10}$  of an inch wide at the top, quickly widening to  $1\frac{3}{4}$  inches. Only after a depth of 7 feet unbroken rock was met, which had never been disturbed by human hands before.

The three finds were taken to the expert, as is every find from the school, be it a sheep's skull, a crow's nest, a fossil or whatever. And with what delight did the enthusiastic layman take the three little relics home, inspired and stimulated by the information kindly given! The bottle-neck was from about 1680-90, the little clay-pipe and the bottom of the first bottle from about 1700-1720. How regrettable, that the tiny spurs which supported the cup of the clay-pipe were broken off - they might have shown the maker's initials. How even more regrettable that the efforts to clean the bottle-neck had been so forceful and so harmful.

But what a colourful yarn questioning imagination began to spin from the three little broken bits resting in their "museum-box"! Who would dig 6 feet and more deep into the steep slope some 240 or 200 years ago? And why, to what purpose? There were no houses but for the old wayside inn at the top; the quarry nearby was, as far as is known, not yet opened. Was the slope not always grazing land, as it is now? Did the dry-stone wall, 4 or 5 feet off the pit, stand then already? Where did the glass bottles come from? Were glass bottles then already so common that it did not matter to break one, while working out on the slope? Where was the clay pipe made? Was it from Bristol? Was it from Mr. Higgin's manufacture near Salisbury? How did it get into this

remote village, on which roads, through how many hands ? Where did the owner buy his tobacco ?

And turning to the unknown owner, imagination leaves archaeology, and the enthusiastic layman, stimulated and grateful, has to leave archaeology too.

Eugenie Reinhold.  
Box, Near Stroud, Glos.

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### LECTURES IN STROUD.

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The following is the first half of the lecture programme for this winter, organised in conjunction with the University of Bristol Department of Extra-Mural Studies. These lectures have been well attended and there are thirty-six names on the register.

2nd	October	Mr. K. Hudson	Industrial Archaeology on the Continent.
9th	October	Mr. N.R. Collins	Discovery in Gloucestershire.
16th	October	Mr. R. Sherlock	Pilot Survey of Industrial Archaeology.
23rd	October	Mr. R. Winstone	Photographing Bristol
30th	October	Mr. E.C.R. Hadfield	Canals
6th	November	Mr. K.G. Ponting	The Glos. Wool Trade.
13th	November	Mr. L.F.J. Walrond	Working in Metals.
20th	November	Mr. C. Cox	Turnpikes and Toll Houses of the Stroud District.
27th	November	Mr. L.T.C. Rolt	Newcomen
4th	December	Mr. N. Cossons	How the Museum can Help.
11th	December	Mr. M.M. Rix	Industrial Archaeology and the Future.

For those who missed the lectures or would like recorded notes of them, the following are some of the points mentioned by the speakers.

#### Mr. Hudson.

People on the Continent approve of objects if they are placed in a museum, either indoor or outdoor. It seems that some taming of the material is necessary; showing industrial archaeology on

television is one type of taming. With museums the romance of the site has gone but there is added appeal for a larger number. In Germany, France and Belgium very few authorities would spend money on preserving on the site. It is the same in Russia only they feel that every citizen should be knowledgeable about technology and, as their development has been recent, they have bought many older relics in world markets. There is now an international market in industrial archaeological objects and countries that have a policy know what they want. In this country there is no official policy as to whether to preserve on site or move into a museum.

There is a considerable difference between being abroad and in this country in the respect given to the expert. There is amateur effort abroad but there is a tendency to give the expert, e.g. museum curator, the first and last word as to whether an object should be preserved. If it is to be preserved and cannot be moved then the object becomes an annexe of a museum. We have not yet got around to the idea that if an industrial monument is good enough, tourists will come to see it.

#### Mr. Collins.

The second industrial revolution of an affluent society has spoilt the Stroud valleys but no serious damage such as slag heaps has occurred. Generally the mills have passed their original usefulness as most processes these days tend to require a horizontal layout. Mills are high and therefore difficult to preserve for an industrial purpose and some industrialists wish to pull them down. Can the nation afford to keep all these buildings or do we preserve just one or two?

The valleys are a strip development and the mills have no enclosures at front or back, nowhere in fact to hide anything from the road or railway. This makes it difficult to put forward constructive suggestions about tidiness.

There is a general apathy towards improvement and the tidying up scheme is a long and difficult process which will need the goodwill of everyone. Planning can prevent things getting worse and also get rid of derelict vehicles, bad signwriting and advertisements.

Until now Mr. Collins has addressed district councils and the C.P.R.E. executive committee with the idea of getting people to spread the gospel. Buildings of historic interest have been noted and draft maps prepared. It is intended to visit each industrialist separately to explain the scheme.

#### Mr. Sherlock.

Mr. Sherlock was appointed Archaeological Assistant to the Staffordshire Planning Officer in 1956. Although there is no

County Museum at the moment, one is to be established in Shugborough Hall and machinery has been acquired. The County Council are also to publish a book on industrial archaeology.

Staffordshire was closely associated with the Industrial Revolution and in the Black Country there was considerable specialisation; locks, nails, glass etc. However the best hunting ground is not in the towns, where much has been replaced, but in the country working up and down the valleys, though remembering that windmills, of which there are 21 left, also supplied power.

The mills played an important part in world architecture, paralleling mediaeval cathedrals in size, but many were destroyed by fire and others have been disfigured by later additions and alterations. The cupola, with its bell to summon employees to work, was a feature of these early industrial buildings.

Ground flint was added to pottery to improve the texture and the grinding industry was established along streams. There were no navigable rivers, however, which led to a series of canals in the form of a cross. Harecastle Hill was the greatest obstacle and both Brindley and later Telford dug tunnels through it.

Mr. Sherlock wants to put plaques on buildings of historical importance and industrial monuments. He mentioned that by the Local Authorities Historic Buildings Act 1962, Local Authorities can make grants to listed buildings.

#### Mr. Hadfield.

Navigable Rivers. Along the Severn, towpaths were made by four companies created for the purpose and toll booths were built e.g. at Ashleworth. On the Wye there was a ferry and house every time the path crossed the river. Passenger ferries usually were combined with a public house.

Canals Very little was constructed before 1760, only seventy years before the railways, and we were the last country in Europe to have them. On the Continent canals were built and owned by the Government and Cities, who constructed them in order to get trade and kept them modernised. We built ours for transport purposes and they were made various different sizes according to the trade.

The early English companies were short of cash and water, but labour was cheap so the canals were constructed following the contours, e.g. Trent and Mersey, Thames and Severn. Later canals had embankments and were straighter, e.g. Shropshire Union, Macclesfield.

# Lightpill

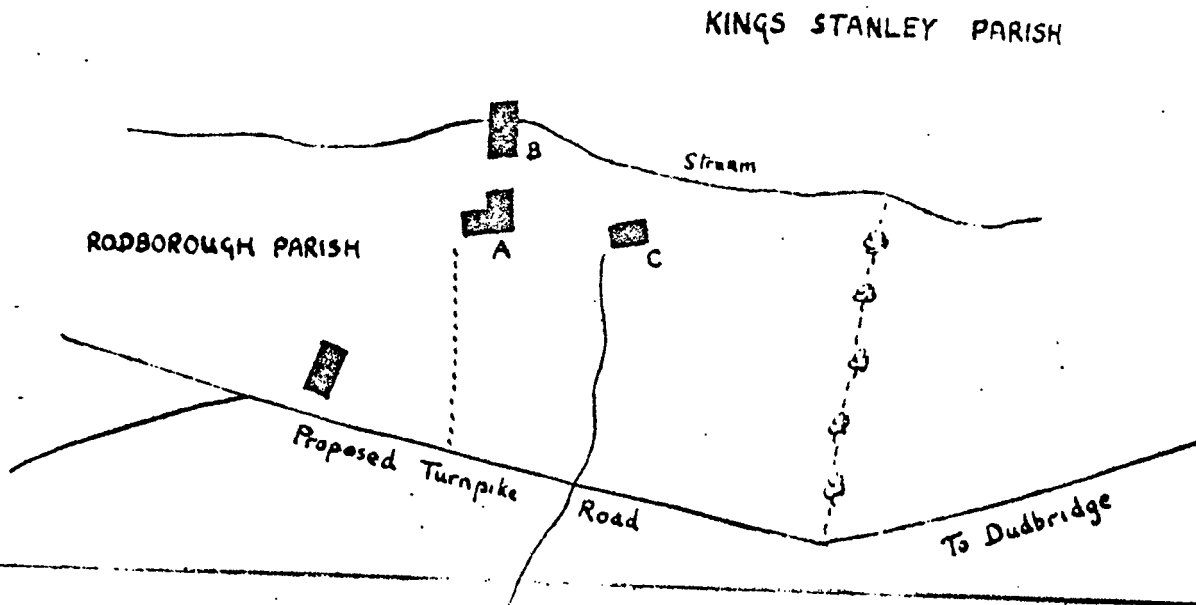


Fig. 1.

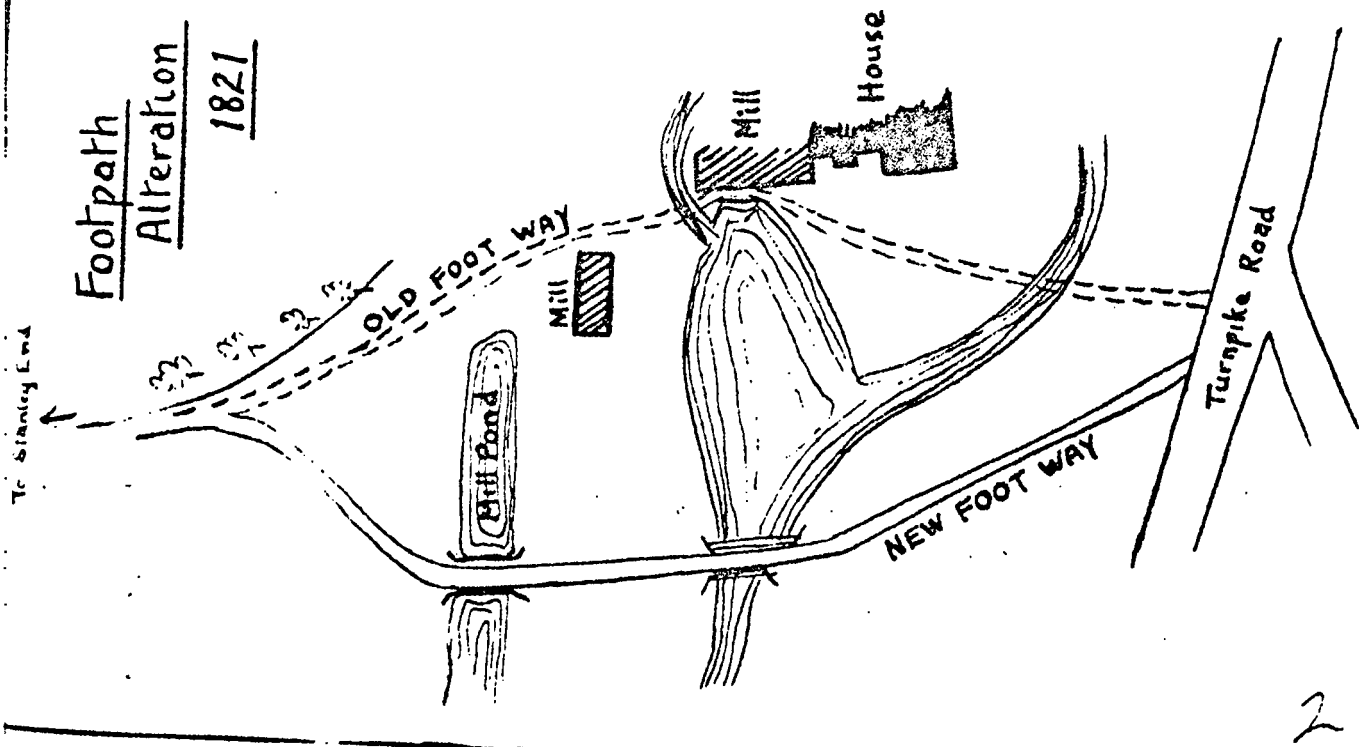


Fig. 2.

Locks. Types are single, staircase and double, which are side by side and save half a lock of water. To save still more water inclines and lifts were built.

Tunnels. Sapperton is the third longest and is unusual because the portals are different.

Bridges Almost every canal has its own designs, and these can also be pivoted, rolling, swing, lifting or roving, to take the towpath over and designed so that the horse does not have to cast off the rope.

Houses Wharf house and stables, lock keeper's, maintenance men's (lengthmen's) and bridgekeeper's. Canal offices.

Public Houses. Were often built by the canal company and owned by them.

Wharfs. Often just a place to unload coal, almost every village having one, sometimes with a warehouse.

Water Obtained usually from reservoirs of which there are nearly a hundred still in use, e.g. Swindon Lido.

Tokens Used by six canals mainly in Napoleonic Wars when there was a shortage of pennies and halfpennies.

Passenger Boats. Only a few canals had regular passenger services, most being content with market boats once or twice a week, with excursions in Victorian times.

G. N. Crawford.

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## THE NATIONAL TRUST

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This is a reminder that anyone who is considering joining the National Trust should do so before the end of the year at the old minimum subscription rate of one pound. Anyone joining after 31st December will have to pay the increased subscription of two pounds.

Most people will know that the subscription entitles members to view National Trust properties free of charge and also that the Trust are now taking a much greater interest in industrial monuments, e.g. the Stratford-on-Avon Canal. In addition membership means that one can join the new Cheltenham and North Gloucestershire Centre for only a further 5/-.

The Trust has now published an atlas which, amongst other things, shows museums, industrial buildings, wind and water mills, viaducts and bridges, barns and dovecotes. The price of this to Trust members before Dec. 31st 1964 is 20/-.. After that date 25/-. A membership form for the Trust is enclosed with this issue.



## THE DEVELOPMENT OF LIGHTPILL MILLS, STROUD

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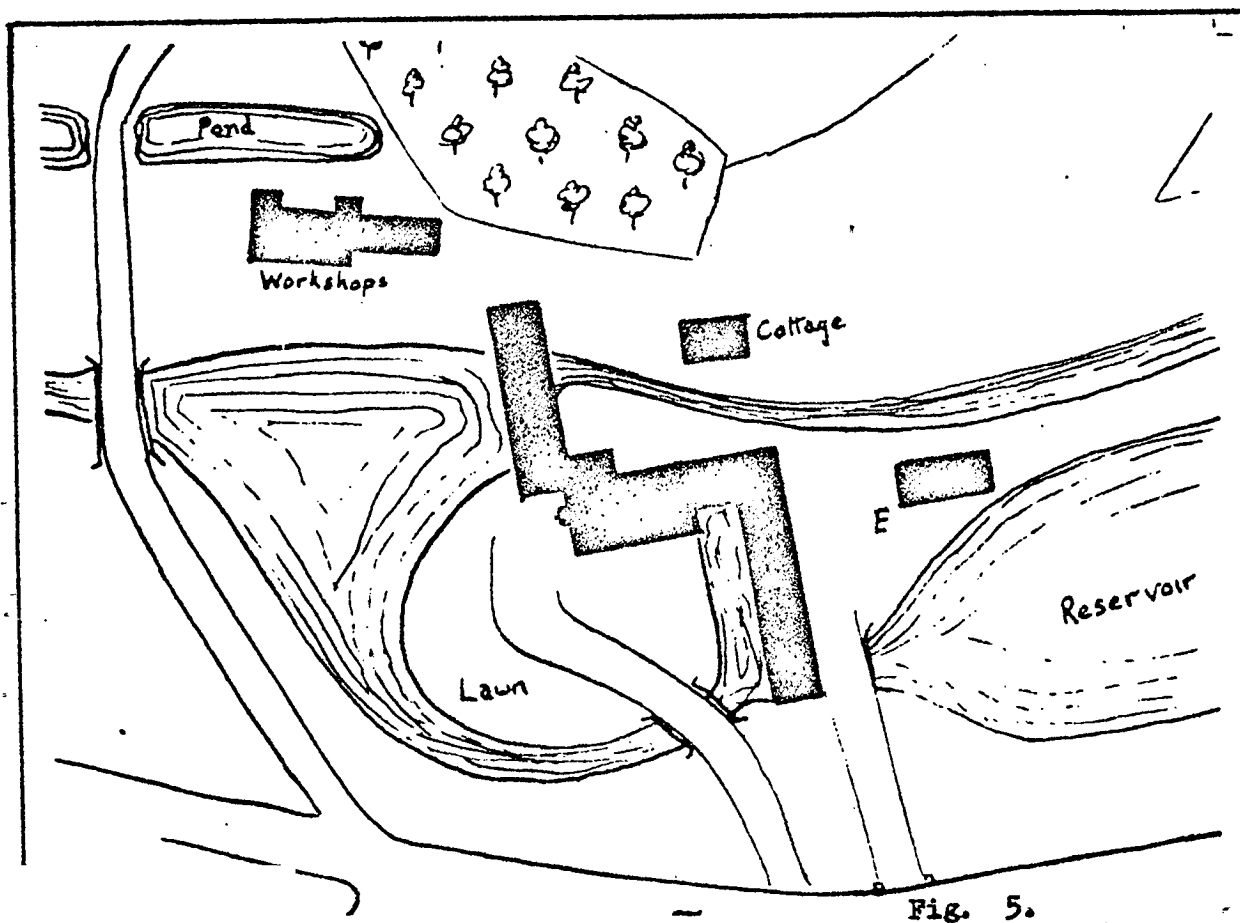
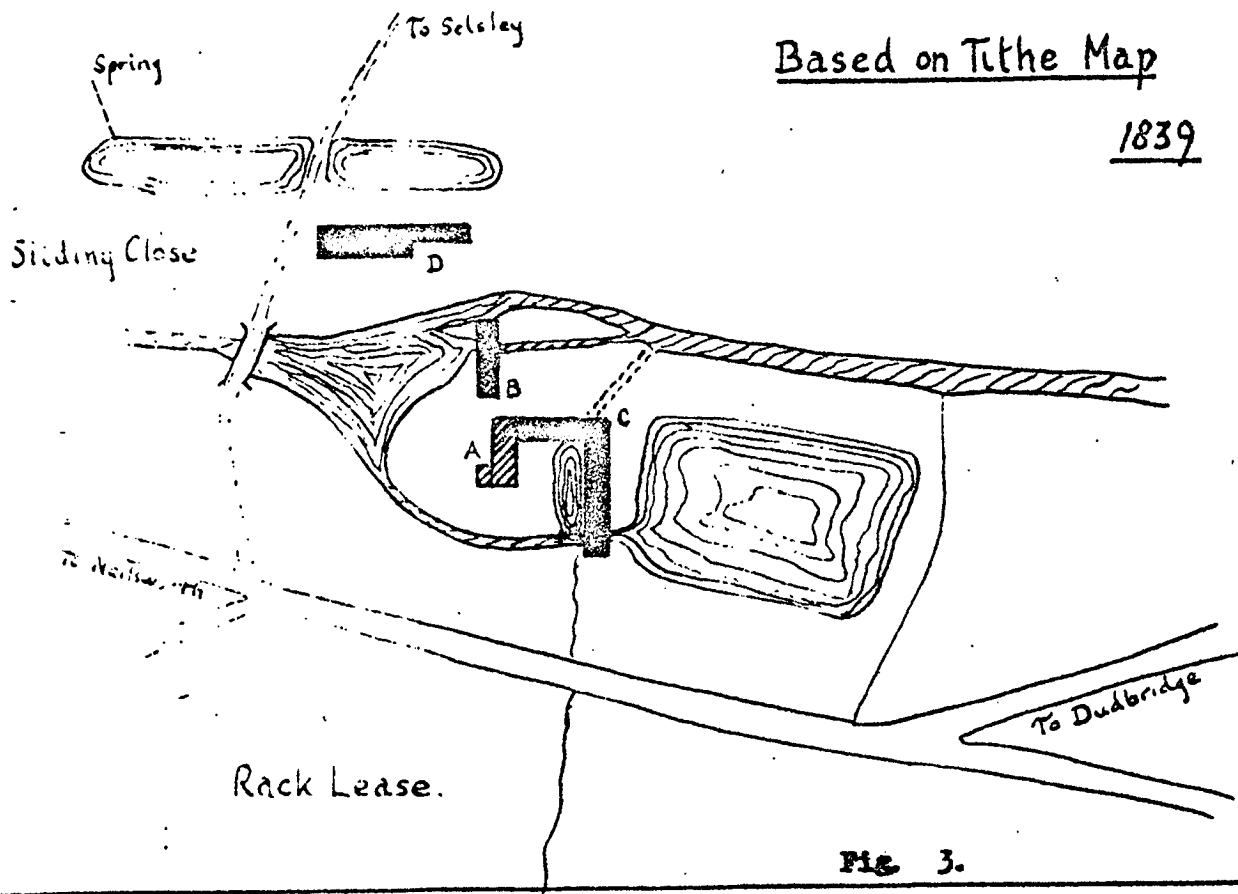
Lightpill Mills lie on the A.46 a mile south west of Stroud, at the confluence of the Nailsworth Brook and a smaller stream from Rodborough Hill. For fifty years the mills have been the factory of Erinoid Ltd. and in consequence are one of the oldest centres of the plastics industry, but for the previous three hundred years they had produced cloth.

Forming today only a minor part of the premises, the old buildings are themselves the outcome of a long process of growth, and from deeds dating back to 1782 and from other records it has been possible to follow, to some extent, the physical changes in the buildings, streams and ponds, though many points require further clarification.

No reference to Lightpill has been traced prior to 1624 when Jasper Estcourt of Lightpill gave the present Jacobean pulpit to Rodborough Church. In his will dated 1651 Estcourt left his "warpeing barr and frame, (his) iron way beame and skales, (his) Tuckers sheares and the press in the Mill" to his son Richard. We have no description of this mill and no inventory has survived but from the knowledge that Estcourt was a clothier and a farmer, his will refers to the "corne growing about my house", it is perhaps legitimate to assume that the mill combined the functions of fulling cloth and grinding corn.

In 1674 Jasper's son Richard wrote, "if my brother Edmund shall think fit to live in my dwelling house called Lightpill ..... he shall rent it and my mills ..... during the minority of my son", suggesting that now more than one mill existed.

No information has yet been found describing the mills during the century following Richard's death, but in 1780 we have the plan of the Dudbridge-Nailsworth-Tiltup's End Turnpike which shows (Fig. 1) a group of four buildings, one the L-shaped house (A) and another clearly a mill (B) straddling the main stream which here forms the Rodborough - Kings Stanley parish boundary. It is probable that (C) standing on the minor stream was a second mill. This stream is very small but several points suggest its having been used for power, firstly the location of a building on the stream in the Turnpike map, secondly the stress laid, in deeds over many years, on the mill owners rights over this stream even after the land it traverses had been sold away, and thirdly the later existence of a mill sited across this stream fed in a somewhat awkward manner by water from the main stream strongly suggests a development from an earlier mill using the Rodborough water.



Possibly very intermittent use of this mill allowed the accumulation of sufficient water from a very small flow.

A mortgage of 1782 describes the property in some detail; "the Mansion House called Light Pill or Lyde Pill ..... and all the Gardens and Orchards, one Dying House and one Water Grist Mill and one Fulling Mill containing Two Stocks and a Gigg Mill. Also a close of Pasture called Home Close 6 acres, the Pasture Land called Church Leaze 4 acres, Rack Close 4 acres, two other Messuages in Rodborough with Orchards.

One Close called Slyding (or Hill) Close 3 acres, Granhams Close 1 acre, Gutter Leaze and the Lagers 3 acres and Heavens' Close  $1\frac{1}{2}$  acres in the Parish of Kings Stanley."

The Turnpike of 1780 - 81 left, of the Rodborough fields, only part of Home Close contiguous with the buildings. The rest, now separated from the mills were soon under separate ownership except Rack Leaze which remained mill property until after the First World War.

By 1806 other changes had occurred. The Grist Mill was now the "Water Mill formerly a Grist Mill". The Fulling Mill is recorded as "having formerly contained two Stocks", and New Mill had been built in Sliding Close, supplied with water from an artificial spring-fed pond part of which still exists. New Mill was not a large building, a print dated about 1840 shows it to have been perhaps 30 x 15 feet, with two main floors and an attic. A reference in 1821 to the wheels and Shafting confirms the use of water power in this mill. Thus three separate sources of water power were used at this time.

The Rating records of 1805 indicate an 'Addition' valued at two thirds the value of the main mill, lying on the Rodborough side of the Nailsworth Brook. This may well be the building (E) (Fig. 5) whose lower stone walls still exist. If this is so the omission of this building from the 1839 Tithe Map is unexplained.

After 1805 the mill was leased to Shillito Stather who in 1818 purchased the premises, the first time for a century that a working clothier owned the mill. A lease dated 1811 contains a full and valuable inventory, the major items being :-

2	24"	Carding Engines
2	24"	Scribbling Engines
1	36"	ditto
1	80"	Spindle Billy
1	80"	Spindle Jack
1	60"	Spindle Jack
3	80"	Spindle Jennies
4	70"	Spindle Jennies
6		Shearing Frames

Weaving was, of course, still a cottage industry, but the whole of the spinning operations were now factory based and presumably water powered.

When Stather purchased the mills in 1818 he immediately began a programme of expansion, spending in addition to the £3950 purchase price another £3000 in the following four years, so that in 1828 the property consisted of "the Mansion, also three mills adjoining together called South Mill, Middle Mill and North Mill, the Dye House, Scouring House, Teasil House and cloth stove with Stocks, Gig Mills, Water Wheels etc. Also Rack Leaze with the Racks and Tenters therein (All this is clearly in the Rodborough portion of the property. RR)

Also that other mill ..... in Kings Stanley .... called Little Mill (the former New Mill RR) with the large wheel drums and shaft therein and the wool stove.

Also Paddocks, ponds ..... and Reservoir."

The enlarged mills demanded greater water storage facilities, particularly for Middle Mill which presumably needed more water than the Rodborough stream would provide. A solution was found by cutting a large reservoir in the remaining portion of the Home Close, fed by a new channel sweeping round the house from the main brook, through a small pond in the angle between North and Middle Mills.

To accommodate the new water ways the original footpath from Selsley was diverted south round the head of the old mill pond, cutting across the artificial pond created earlier to supply Little Mill. Figure 2 shows the diversion as drawn in the original magistrates order sanctioning the change.

The new buildings of 1818 - 22 are shown in the Rodborough Tithe Map of 1839 but the detail of this plan seems suspect. Figure 3 is based on this map and the material of Figure 2.

During the 1830's the mills were leased to a succession of tenants, one of whom, Daniel Foote Taylor made pins in South Mill. This tenancy is of particular interest as Taylor had purchased the American, Lemuel Wright's patent for making the modern solid headed pin. After improving the machines, Taylor produced at Lightpill what are believed to have been the first modern type pins sold in this country. This was in 1833. Unfortunately Taylor's temper and his expensive experimentation with further machines ruined the business, the machines and name being bought by J.A. Williams of Birmingham, in 1843. The early machines, however, returned to their original county and may be seen in the Gloucester Folk Museum.

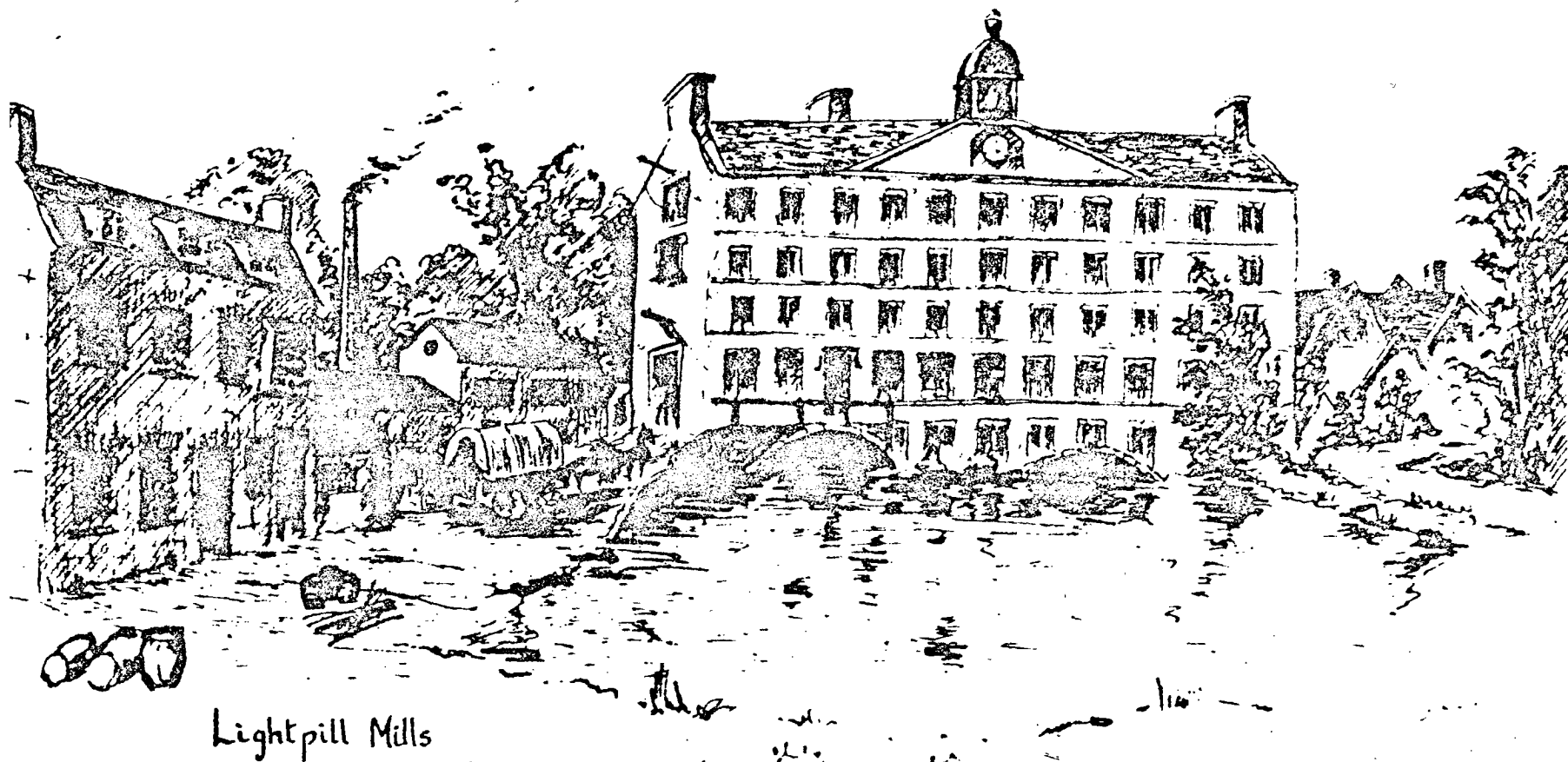


Fig. 4. Lightpill c. 1840  
drawn from a contemporary print

A drawing, of which unfortunately only a mediocre photograph is known, shows the appearance of Lightpill from the south in 1842. We see Little Mill and beyond, straddling the stream, South Mill, a building in the traditional mill style, with five floors, generously lighted, with a clock in the pediment and a bell cupola. The house is just visible as a typical gabled Cotswold structure, and between Little Mill and South Mill rises in the distance a tall chimney, probably part of the cloth stove. (Fig. 4).

South Mill hides North and Middle Mills completely. The clock and bell cupola suggest that this mill is the main building and that the two other mills are merely ancillary structures, this being underlined by the rents paid in 1845, South Mill being let for £200 a year, Middle Mill, North Mill and the house for £80. Since the ground plan of these two mills is as extensive as South Mill we can perhaps assume them to have been of one storey only.

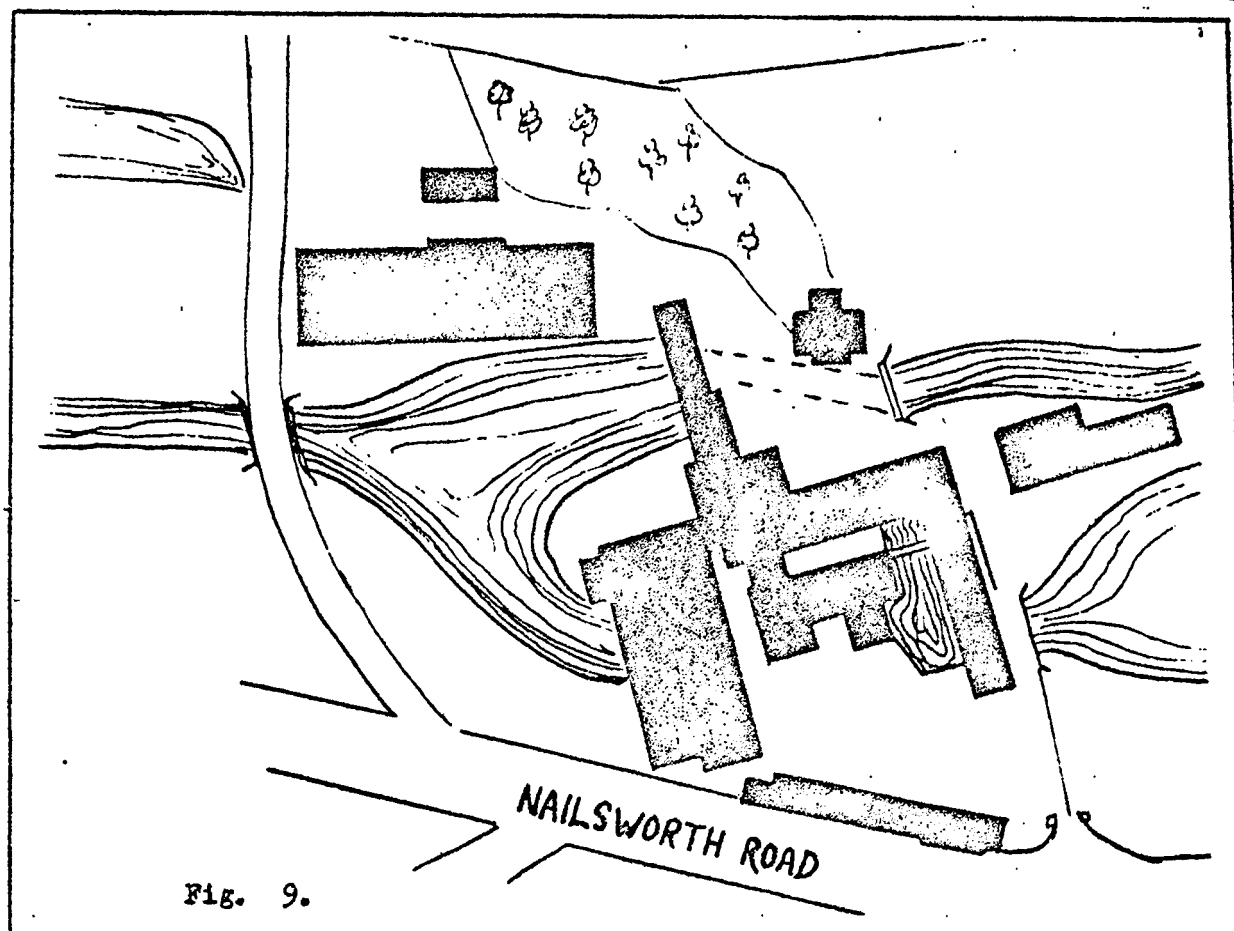
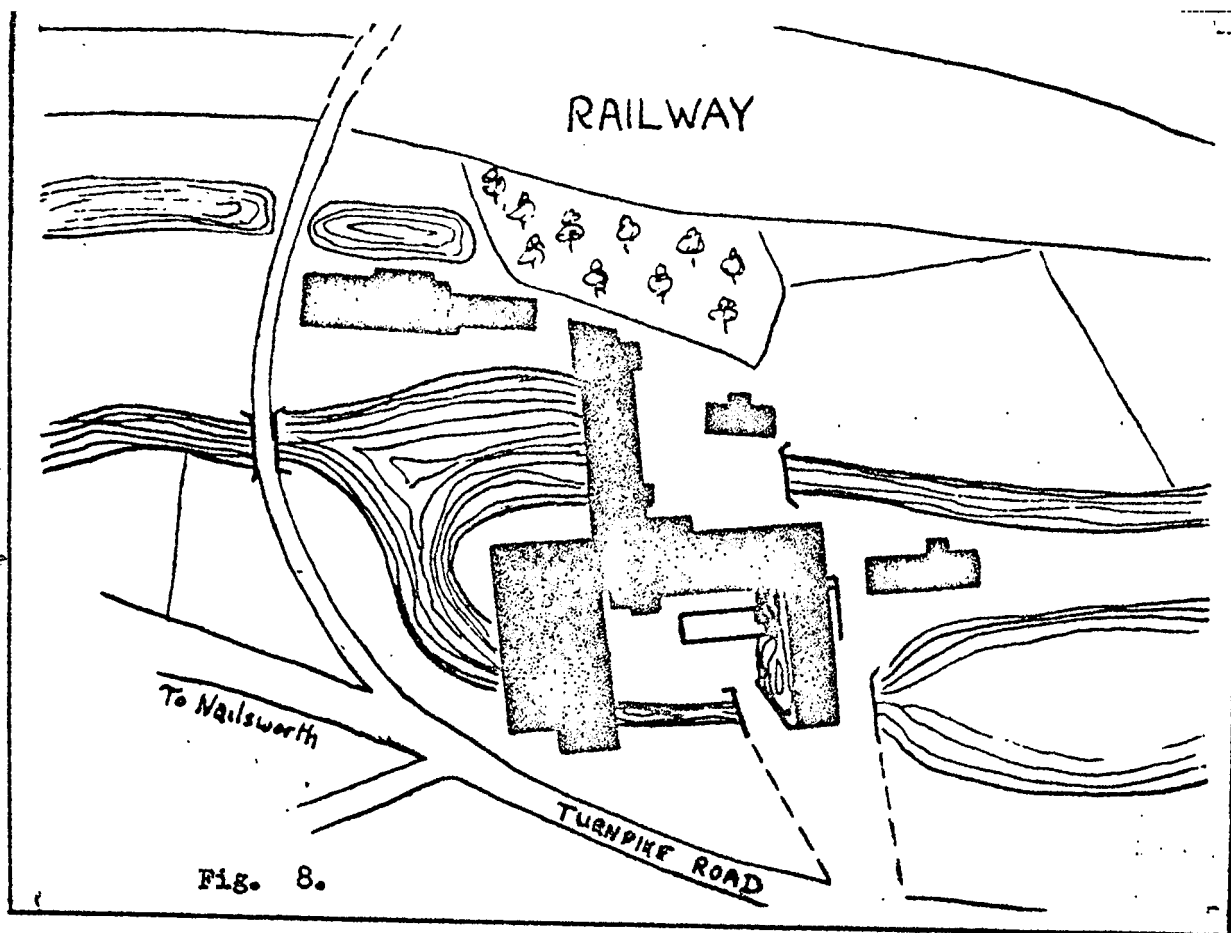
As part of a long drawn out law suit over the mill ownership, a detailed survey was made in 1848. (Fig. 5). This records the transition of Lightpill from a clothier's estate to a factory. The house originally drawn on the plan was later erased and by 1854 the deeds refer only to the site of the house.

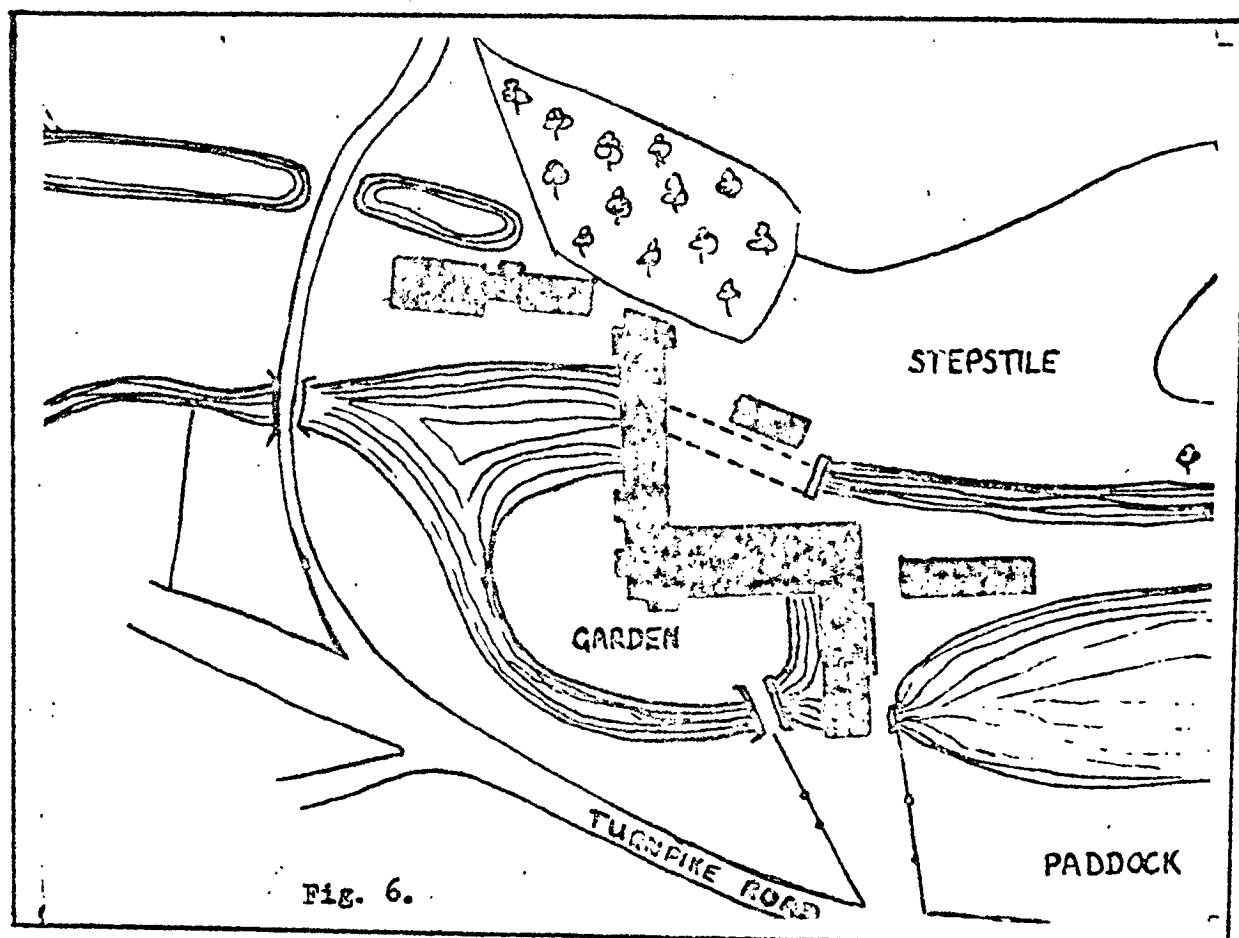
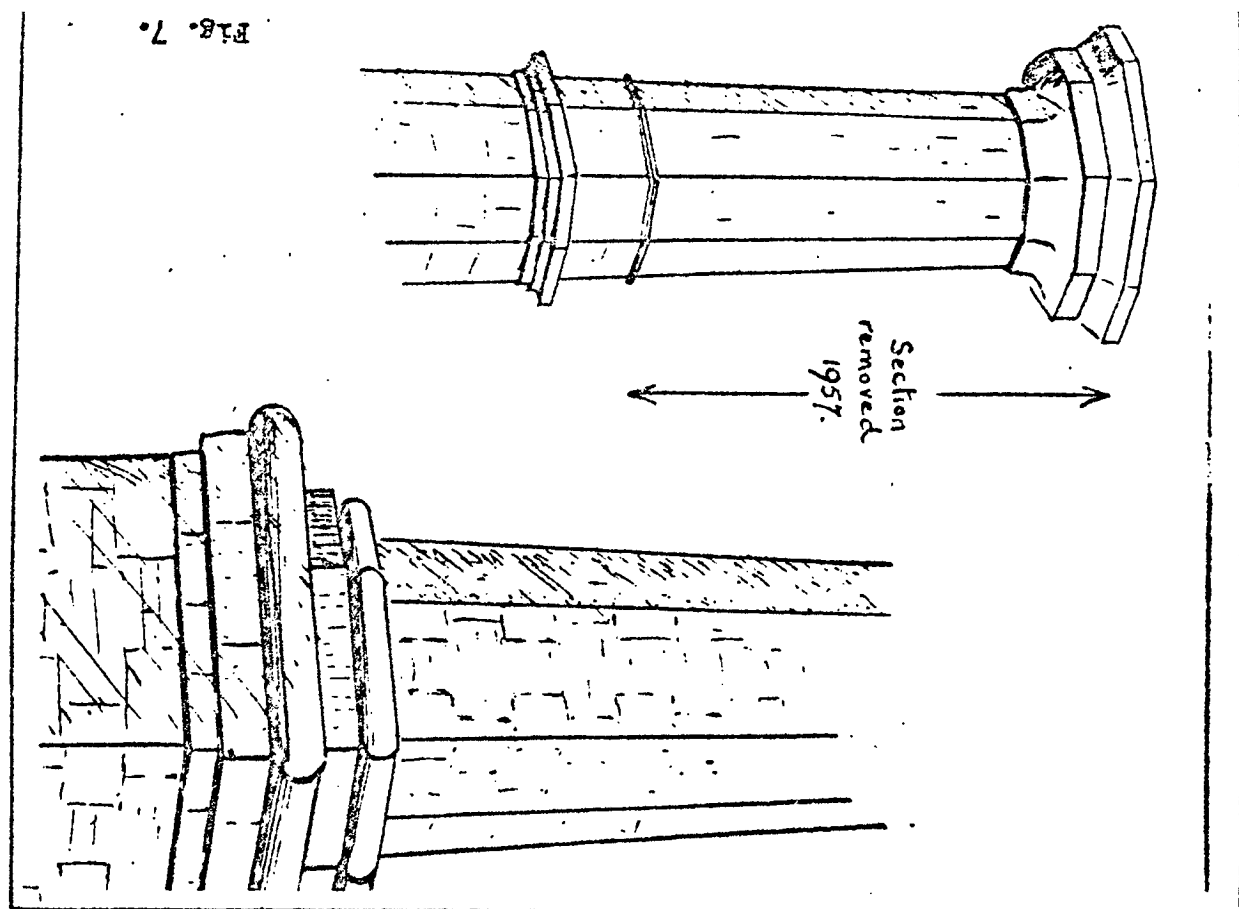
The basic pattern of the present central block was now fixed, but Middle Mill touched South Mill only at one corner. Despite the rebuilding of Middle Mill in 1850-54 examination of the interior basement wall shows the outline of two arches which would have communicated with the pond shown in the plan.

Further proof of water power in this mill is given in the 1854 lease which accords two water wheels to Middle and North Mills, which are grouped together. It is thought that these wheels were both in Middle Mill, the waterway under North Mill being merely access to the reservoir.

The lease of 1854, being a renewal of William Barnards' tenancy, records that Barnard had recently spent over £1800 of his own money on erecting new buildings and enlarging and substantially improving the mills. This rebuilding produced a new Middle Mill on the same scale as South Mill. North Mill was still at this date unimproved. (Fig. 6.)

More important was the fact that Barnard made accommodation in Middle Mill for the steam engine he was about to install. This engine, installed in 1854 and costing £300 for the engine and £200 for the boilers was probably one of the two still in position in 1871, either a 16", 24" compound, or a 12" horizontal high pressure engine. Beside the now empty engine







house at the southern end of Middle Mill there is still today a small cellar-like room containing the massive stone foundations for the fly wheel bearings and the semi-circular pit, ten feet in radius, in which the fly wheel revolved. The present stone chimney stack is believed to be the original except that within the last six years the top ten feet, including the fine splayed rim were removed. The stack is octagonal in section on a square base, both portions today being about 45 feet in height. (Fig. 7).

The 1854 lease contains a brief schedule of fixed equipment.

Late Pin or South Mill

1 Water Wheel complete  
1 Upright Shaft  
Bevil Wheels  
Plummer Blocks and Brasses

Old or North Mill and Present New Mill

2 Water Wheels  
6 Pair of Stocks  
2 Broad Gigs  
1 Washer

The expansion of the mills in 1850 - 54 and the introduction of steam power, both associated with the new occupants, Roberts Jowling & Co. of which firm Barnard was a partner, probably signified the beginning of power weaving at Lightpill. In 1839 there had been two hand looms, insignificant compared to the spinning capacity, and no power looms. Indeed the whole county only boasted of 4 power looms in 1835<sup>1</sup>. By 1871, however, the present single storey buildings to the south east of Middle Mill were built as loom sheds. Another new feature seen in the plan of 1875 (Fig. 8) is the Stonehouse and Nailsworth Railway which was built across mill land in 1864.

In the present context the only clause in the contract of sale of the strip of land was the provision maintaining the supply of water to Little Mill from the spring in Sliding Close.

Between 1875 and 1907 other substantial changes took place, though the date of rebuilding North Mill is not known.

By 1907 Little Mill was absorbed in new loomsheds, part of the Sliding Close pond being filled in. Much of the space between North Mill and the earlier loomsheds was filled with new boiler houses, covering the old site of the house, while along the Nailsworth Road wall stables were erected. The stone building between the Reservoir and the stream was now, in 1907, another loom shed (Fig. 9)

1. E. Lipson "A Short History of Wool and its Manufacture" p.158.

By 1907, however, Roberts Jowling & Co. was bankrupt. The manufacture of cloth at Lightpill had ended after three hundred years. Industry would thrive there again but it would not be wool and it would not be housed in the great stone-built mills. An era had ended.

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R. L. Rose.

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