

## Are you sure you are fully covered ?

**AIA Insurance Scheme.** At the first working weekend held at Ironbridge in 1981, the Council decided to pursue the objective of negotiating an improved version of the CBA Insurance Scheme which would be more applicable to Industrial Archaeology. The cover was deliberately designed to be broader than the CBA Scheme, particularly in the following areas:

- (a) The public liability section to include the liability for property upon which, or in which, an insured is working.
- (b) The automatic personal accident section extended to apply to all officially authorised activities of the insured.
- (c) The temporary total disablement benefit under the named personal accident section to be increased to £50 per week.

When the insurance scheme questionnaires and proposal forms were circulated, several societies found that the premiums appeared to be higher than they were already paying. This did not necessarily take into account the fact that the cover obtained was different, and almost certainly more expensive. However, as a result of the various observations received, the Association has had further discussions with the Insurance Brokers, as a result of which it has been agreed in principle that Societies should only be required to pay premium for the total number of members of the society actually involved in specific areas of activity — as opposed to the society's total membership.

All affiliated societies should already have received revised questionnaires for completion and return to the Secretary. The return of a completed questionnaire will lead to cover automatically commencing on 1st April unless notified to the contrary.

The Brokers are emphatic that if any local society feels that they deserve, or wish to receive, special consideration once they have completed the questionnaire and calculated the likely premium, then they should supply with the questionnaire, a letter setting out and describing in detail the various activities of the society together with the number of people who would normally be involved in each of them.

The underwriters should then be able to agree a downwards revision of the premium otherwise payable. It will, however, be necessary for each local society to forward with their completed questionnaire a cheque for the premium resulting from the completion of the questionnaire.

The AIA Council feels that it is essential that if the scheme is to be launched, all cover should commence from the 1st April 1983. If late applications are received, cover will run in the first instance to expire on March 31st 1984.

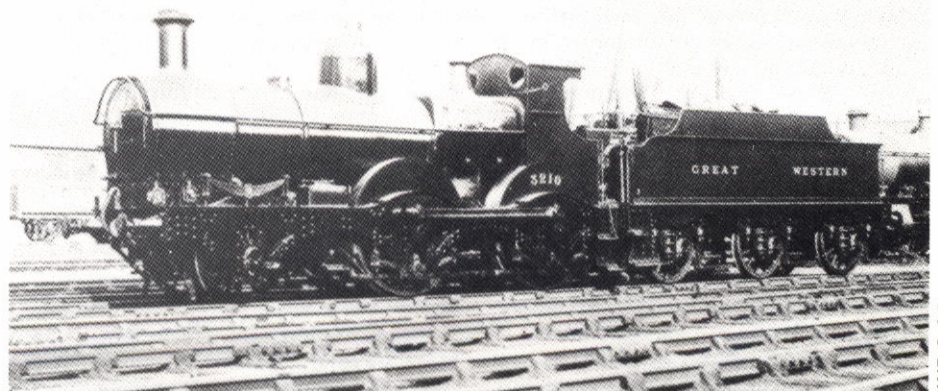
If affiliated societies do not wish to take advantage of the insurance arrangements which the AIA has negotiated in sufficient numbers as to make the open 'umbrella scheme' viable, the Council of the AIA will be advised, and asked to consider whether it might not be better to allow individual societies to continue to make their own insurance arrangements.

**The Birmingham Railway Museum** is based on the old GWR locomotive sheds at Tyseley Junction about three miles from the city centre on the line which ran from Birmingham to London (via Warwick, Banbury and Aynho) while dividing at Tyseley to Stratford-on-Avon. Those who know the area will be aware of the problems surrounding the establishment of a tourist attraction in a highly industrialised district and it is interesting that they have found the Manpower Services Commission's various schemes of great help.

Whenever, and wherever, Conservationists get together inevitably the role of the MSC scheme gets discussed. Not all comments are complimentary and it is therefore pleasant to

have a first hand account of how these projects have helped. The following article appeared in the Museum's house magazine and we are grateful for permission to reproduce it.

**Tyseley and the MSC.** Over the past three years visitors to the Museum will have seen the gradual but considerable improvement to the site as far as tidiness, security and facilities are concerned. This became possible once the boundaries had been adequately delineated and the basis of occupation agreed. In the past the Museum's finances came, in the main, from capital gifts and support from industry; these provided the exhibits the building comprising the shed cum workshop, and the other fixed assets, but with inflation the long term appeared less certain. However, the formation of the Birmingham Railway Museum Development Trust, well backed by friends in commerce and industry plus grants on a regular basis from the local authority in the form of the West Midlands County Council, the latter comprising the rental charges and revenue and/or capital amounts, has certainly arrested this position. Without this assistance, it would be increasingly difficult for the Museum to develop and grow as it must do to survive. Until such security had been achieved it was not possible for the essential site works to be put in hand as it was obvious from the start that the costs would well exceed the quarter of a million pound mark. On the other hand, until adequate walling or fencing was erected, proposed running lines protected and proper track gating installed, neither British Rail nor the Railway Inspectorate would be prepared for large public participation.



GWR 2-4-0 — overhauled at Tyseley in its hey-day.



Fortunately the Museum has charitable status and an acknowledged value to the community; it is also in a designated inner city area. This has enabled the Trustees to seek the help of the Manpower Services Commission in the setting up of a Community Project with the employment and training of young people under adequate supervision. The material content has been financed by the West Midlands County Council in conjunction with Birmingham Inner City funding.

Before a scheme of this nature can be contemplated let alone put into action, the following criteria need to be met:

- 1 It must provide work experience for young unemployed people and thus aid their personal development and improve their prospects of getting and keeping a permanent job.
- 2 It must be seen to undertake work, or supplement services, of value to the community.
- 3 Schemes should be organised on an on-going basis where the trainees are working as a group under adult supervision on tasks which have a finite duration such as construction.

After the first year when experience was gained, considerable progress has been made. The Museum is now on its fifth scheme. To date, some 40 young people under 7 supervisors work side by side with Museum staff. There is no doubt at all that the standard of work, and thus the standard of the training, is up to the high requirements of industrial building. Brickwork for instance is not comprised of common bricks but specially made engineering bricks (copies of those used by the GWR in its construction work) and needing careful laying and first class jointing. Carpentry standards are seen by the quality of joinery such as the manufacture of handcart wheels. The whole provides useful employment, adequate training and industrial discipline together with planned work experience as well as education. Excellent proof of this is shown by the number of young people who leave, before their year's period is up, to take on employment.

Under the provisions of the MSC scheme the Museum has to provide a responsible person as a 'sponsor'; this has been done in the form of a Trustee who undertakes the overall responsibility, including finance. The site organisation is undertaken by the Chief Engineer who oversees the whole of the works, the total workforce, supervisors and trainees, as well as the ordering of materials within the budget allowed. He is also the works and site safety officer. On the paid staff there is a senior supervisor who has been with the Museum since the scheme began: he is now well experienced in the needs of those under his control and the quality requirements of the Chief Engineer. There is also a back up team which has the unenviable task of looking after the day-to-day control of finances and the inevitable paperwork. Constant contact is kept with MSC officers who have always proved helpful and positive. In consequence Tyseley is one of the show schemes of the West Midlands with an annual expenditure in labour and materials well into six figures.

Work done over the period is catholic in its content. In the beginning this was to a large degree 'invisible' for a dusty, ash topped, sometimes flooded site needing drain investigation, re-draining and general rehabilitation. This was followed by the necessary foundation work to the lengthy boundary walls and, to provide

variety of work experience, the re-paving of the turntable area, the digging out and re-bricking of the turntable pits and restoration of the workshop floor. The boundary walls consist of high quality GWR type brickwork with frequent piers supplemented on the diesel depot side by wrought iron fencing ex Snow Hill station. In fact a considerable amount of material (including a large part of Stourbridge Town station) reclaimed by volunteers, has been put to good use. GWR wrought iron spear type fencing rescued in the same way has been installed to protect the running tracks. A large section of the old coaling stage has been repointed.

As experience was gained and the workforce knitted itself together confidence grew, a football team evolved and, very important, Tyseley's lads won a brickwork competition at Bingley Hall. Induction training has been regarded as extremely important but is used in a positive way, for instance, the young men have constructed their own site accommodation.

Once the general building and bricklaying skills became advanced, the carpentry trade was tackled. Thus with a joint effort, level crossing gates have been rebuilt and installed, wagons repaired, and site trolleys etc constructed. At present work of very high quality in the reconstruction and renewal of the area adjacent to the toilets is in hand. This has resulted in a carpenter's shop and, underneath the arches of the coaling stage extension, new refreshment facilities are to be provided. In accordance with good industrial archaeological practice similar materials to those used for the original construction work are used including some fine wrought iron windows acquired from Gloucester by volunteer help. The whole of this area is now taking on a new look and the space under the coaling stage arches will at last be weatherproof, and the toilets completed to the standard required. Trainee's skills will be put to the test in the construction of the formwork for the vaulted arches.

The current programme of work also includes the re-facing of the workshop front including a covered walkway with a roof supported by cast iron columns from Chance's old factory in Smethwick, the commencement of the installation of the ex Snow Hill gate columns, the foundations for the weighbridge house cum shop cum office, the complete re-fitting of the running track to passenger standards, the construction of a platform, work on wagons and the construction and installation of more crossing gates.

This is the solid beginnings of a worthwhile project which has a long term benefit to the community. The partnership between MSC, local government, industry and the Museum Trust has been a good one, well worth the amount of voluntary time put in to ensure its success. For it to continue each partner must play his part — there is every hope that this will happen.

**Blisworth Tunnel.** 'The main contract to repair the lining in the centre section of Blisworth Tunnel, on the Grand Union Canal in Northamptonshire, is one of the largest contracts awarded by British Waterways Board' said Sir Frank Price, Chairman, in December 1982 when he marked the award of the contract to John Mowlem & Company at a meeting on site with Mr Paul Mead, Deputy Managing Director.

Approximately 1,000 yards of brick lining, the centre third of the 1½ mile tunnel, will be replaced with precast segmental concrete units.

In a preliminary contract won by John

Mowlem & Company earlier last year, access roads, services, temporary offices and contractors working and storage areas have been constructed and minor patch repairs to the brickwork lining in the northern and southern ends of the tunnel are well in hand.

Blisworth Tunnel, on the principal waterway route between London and the Midlands has been closed to traffic since the Autumn of 1980, and is expected to be re-opened in about two years time.

**Bernard Barton's Spinning Wheel.** Bernard's family came from an ancient line of Cumbria yeomen living around Highead Castle. The family home sits above the river next to the old pack horse bridge. Around 1766 (about the time of Arkwright and others) Bernard invented a horizontal spinning wheel carrying 12 bobbins suitable for flax or cotton. The device was so constructed that one person turned the wheel while the rest spun. Each bobbin could be stopped and started independently.

The machine was, therefore, suitable for use by young people with less strength and for learners. Subsequently Bernard became involved in textiles in Carlisle in a substantial way until his early and untimely death in 1773.

Bernard's son, John (who was later to be a Member of Clarkson's Committee of Twelve with Wilberforce to abolish slavery), continued to publicise his father's wheel.

Many wealthy people purchased them for use in poor districts in order that people could clothe themselves. In this sense the machine was different to the other inventions of the day in putting people into, rather than out of, work.

The authoress and philanthropist, Sarah Trimmer, became acquainted with the invention and used it as the basis of her School of Industry, established in Old Brentford in 1786. This school was the model for numerous others.

In 1786 Queen Charlotte and King George III had the wheel demonstrated at Kew. This occasion received Royal approbation and resulted in two wheels being purchased by the Queen and others being sent by King George to Hanover.

Among other aristocrats who purchased versions of the wheel for this use of poor young spinners in their neighbourhood were the Duchess of Northumberland, Lady Darlington, and the Earl of Surrey; Lady Broughton had one installed at Sandoe near Hexham in Northumberland which is recorded as having given satisfactory service for upwards of fourteen years.

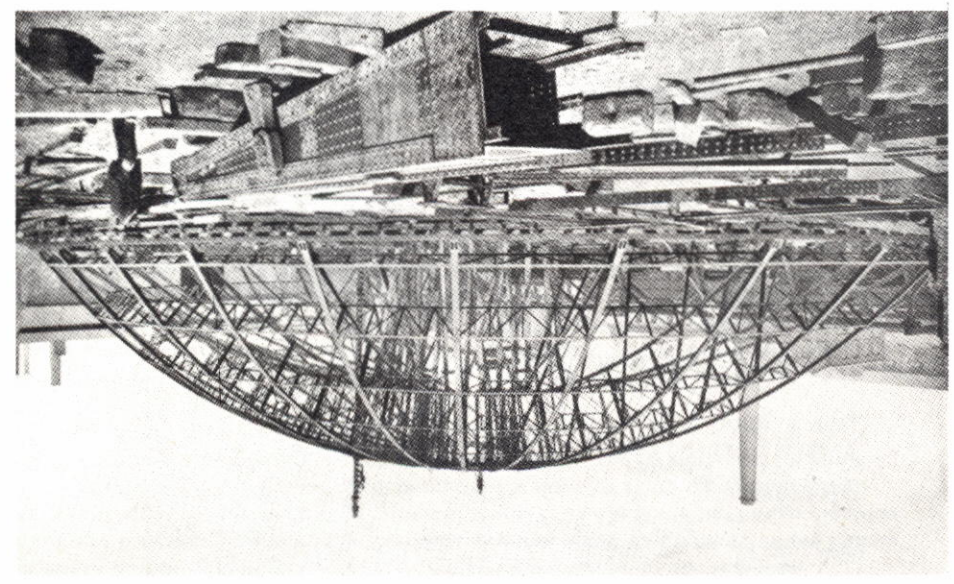
But no examples of Barton's horizontal wheel are known to survive. In an attempt to honour the memory of this ingenious and enterprising linen manufacturer of Carlisle, Andrew Humphries of that city hopes to commission a working replica in oak which an interested local craftsman can complete in three months. The likely cost of the full-size replica is £500, and Andrew Humphries would like to find eight or ten subscribers each of whom would have the opportunity to borrow the wheel for exhibition or demonstration purposes and whose contribution would be publicly acknowledged.

If you can help to pay tribute to this little known Cumbrian entrepreneur and philanthropist, write to Andrew Humphries at Colonsay House, Itonfield, Ivegill, Carlisle, Cumbria.

**Remains of a Revolution.** Tony George writes of a lecture at Leeds University, Wednesday 20th October at the invitation of the Yorkshire



by contributions from London. The exception was provided by Stephen Hughes, who presented an excellent survey of Swansea and the Lower Swansea Valley. Otherwise the meeting was somewhat similar to the regular monthly Docklands History Group meetings held in London: we had slides of forging by pneumatic hammer at Blackwall Yard, Malcolm Tucker on engineering structures in London's Docklands and another early 1920s PLA silent film. However the purpose of the meeting was to bring together people working on other dockland areas, abandonment and decay in all but the most recently constructed port facilities being an almost universal phenomenon more to technological change than the economic recession. It would be fruitful if meetings could be held for those with an interest in docklands to exchange ideas and to compare and contrast their problems. Please let us hear what is happening in Hull, Bristol, Glasgow, Liverpool etc and for that matter from abroad too. Dockland industrial archaeology is urban industrial archaeology in contrast to the IA of attractive country regions with low population densities such as say the National Parks and the Scottish Highlands. We look forward very much to hearing from you — the ports and harbours of Britain present a real challenge for the industrial archaeologist. Please write to Dr Robert Carr, Docklands History Survey, Department of Civil Engineering, North East London Polytechnic, Longbridge Road, Dagenham, Essex, RM8 2AS (or telephone 01-590-7722 Ext 2167).



The Royal Albert Hall roof undergoing test erection by the Fairbairn Engineering Co at Ardwick 1868.

The Industrial Heritage of Britain, Brian Bailey, Ebury Press, National Magazine House, 72 Broadwick St, London W1V 2BP, 1982, £9.95. A popular look at the industrial archaeology of Great Britain divided up into regions and also divided by industries. Each chapter starts with a plan and each section is profusely illustrated with line diagrams, photographs both colour and black and white. A handsome publication which should go a long way to popularise industrial archaeology and will form a useful travel guide for those touring England.

Archaeological Society. I enjoyed the book which is about the first phase of the Industrial Revolution. Burton believes his BBC image as the Bellamy of IA, is better without a script, has a fine turn of phrase and makes a strong plea for the study of industrial remains in the social context. His starting point is canals and the comments on the variety of textures and clays in the brickwork of canal buildings. His case study was the iron smelting community and pit village of Blaenafon with its associated tramway and canal. He is currently filming a series on the rise and fall of Northern Textiles and we were given a foretaste in some aerial views of the Huddersfield Narrow Canal and the urbanisation of the Colne Valley.

**The IA Annual Conference in London.**

Sept 7th-12th 1982. Whenever I find myself in a 'conurbation' in Britain my heart is not raised in anticipation of architectural delights, rather my basic mind prepared to admit that this obsession might be singular, and to devote a whole day to Bazelgette's works in this field would have been unreasonable. The organizers of the conference faced the fact that the Capital is richly endowed with a plethora of industrial monuments, and GLAS the host society initiated us into a choice selection of important and unusual sites. On the first night introductory talks were given on the London docks in preparation for the visit on Wednesday. As in the ports of Liverpool and Birkenhead, these derelict areas of wasteland should not be taken simply as a manifestation of our crumbling society, but as a rather large step in the inevitable development of wharf facilities to meet the demands of bigger ships, and in recent times the sudden rise in container traffic. For example, the reclamation of the foreshore in order to accommodate ships of greater draught, has been found by excavations near the Custom House to have involved the construction of at least ten revetments between the 12th and 15th centuries. As in the northern ports the new container 'outlets' are further down the river, but nostalgic reminders of the former glory of the docks was seen in two documentary films made in the thirties and twenties. Incredible and breathtaking scenes of industry in the latter were, it is true a little enhanced by the speed of the modern projector! Highlights of the dock outing were some remarkable buildings of the early and mid 19th century, perhaps the most memorable was the extraordinary use of cast-iron in the roof of the 'skin floor' 1811-13, reminiscent of the 'leggy' Longdon Aqueduct. Another roof, made entirely of wrought iron was the enormous elliptical dome of the Albert Hall, even its compression members fashioned in this material. Only the totally unmusical would not have delighted in a quite unexpected bonus; being high up, God-like in the eye of the dome looking down on the brightly dressed orchestra rehearsing with Janet Baker for her last performance at the Proms. The sound of English music floating up into the delicate intricacies of the superb roof was an experience I will never forget. At a lower level, two tunnel visits were made. The first was to the Post Office miniature tube railway below Mount Pleasant, completed in 1927, but now alas, not as busy as in its hey-day. The electrical controls and rectifiers producing 440 volts DC were fully explained as was the

clever brake-saving device of running up a 1 in 20 gradient to the stations. In the early hours of Friday the IA party could be heard, and dimly seen, making its way from Rotherhithe to Wapping through Brunel's famous tunnel, an experience calculated to 'bring home' to all the courage and imagination of the great 19th century engineer: it also enabled one to treat the live rail in a rather cavalier fashion. Another transport venture was a day on the Regent's Canal, with only bright green algae and flocs of white polystyrene to remind one of the 1980s. The weather was fine for a trip down the river in working launches, a splendid way of imagining the former glory of the docks from the right angle. Sadly shipping was limited to vessels devoted either to pleasure or sludge disposal; we passed through the near-completed barrage, which seemed to have more in sympathy with the Sydney Opera House than the austere and dignified functionalism of 19th century engineering works. No more eloquent memorial to a man's integrity and initiative could be imagined than Thomas Kirkaldy's Testing and Experimental Works in Southwark, lovingly explained by Denis Smith. Other sites visited, some moving, some entertaining were: the Kew Bridge Pumping Station, the Tower Bridge, Harrod's Power Station, the Passmore Edwards Museum and Frank Holland's unique collection of mechanical music making. Space prevents listing all the supporting lectures; happily the Rolt Memorial Lecture by R Michael Robins on 'What must we keep' was very well delivered and audible. He stressed the importance of selectivity and full liaison between museum curators and in the sensible re-use of old buildings. Personally, I still have doubts about expecting Rolt lecturers

having to take on a frontal attack by the vintners and brewers. All those who attended this splendid conference are greatly in debt to the organizers. *Douglas B Hague*

**AlA Conference. Docklands' Special Interest Group Report** on a Session which took place on Sunday morning, 12th September 1982, was well attended but as might have been expected, with the relatively short notice, was dominated by contributions from London. The exception was provided by Stephen Hughes, who presented an excellent survey of Swansea and the Lower Swansea Valley. Otherwise the meeting was somewhat similar to the regular monthly Docklands History Group meetings held in London: we had slides of forging by pneumatic hammer at Blackwall Yard, Malcolm Tucker on engineering structures in London's Docklands and another early 1920s PLA silent film. However the purpose of the meeting was to bring together people working on other dockland areas, abandonment and decay in all but the most recently constructed port facilities being an almost universal phenomenon more to technological change than the economic recession. It would be fruitful if meetings could be held for those with an interest in docklands to exchange ideas and to compare and contrast their problems. Please let us hear what is happening in Hull, Bristol, Glasgow, Liverpool etc and for that matter from abroad too. Dockland industrial archaeology is urban industrial archaeology in contrast to the IA of attractive country regions with low population densities such as say the National Parks and the Scottish Highlands. We look forward very much to hearing from you — the ports and harbours of Britain present a real challenge for the industrial archaeologist. Please write to Dr Robert Carr, Docklands History Survey, Department of Civil Engineering, North East London Polytechnic, Longbridge Road, Dagenham, Essex, RM8 2AS (or telephone 01-590-7722 Ext 2167).





*The Blacksmiths' Shop at the West India Dock Works of River Thames Shiprepairs Ltd in 1980. This view, looking north, shows a pneumatic hammer by B & S Massey of Manchester and forge hearths. In the foreground is a rib bending floor. The furnaces which heated the ribs before they were worked upon are behind the camera. Technology similar to that which this photograph illustrates was practiced in the 1860s when the shipbuilding industry on the Thames declined. The forge shown in the above view was cleared of its machinery and fittings soon after the photograph was taken. It would only be practical to establish a fully representative ship-repair yard museum including large machines by preserving a closed yard in situ.*

**Water Power at Brownwich Farm:** an exercise in excavation. On 20 December 1982 members of the Southampton University Industrial Archaeology Group visited Brownwich Farm, Titchfield at the invitation of Hampshire County Council. The purpose of the visit was to ascertain if anything could be found of a water power installation believed to have been in use on the farm. Despite suffering a minor blizzard on their first visit, members were able to find what might have been the outline of a wheel pit. Fortunately this was under a lean-to adjoining the barn, and was indicated as a possible site by the tenant farmer, who had experienced flooding in this area. Another six visits were made to the site during which excavation slowly revealed the outlines of the water power system. Once it became clear that the site of the water wheel had been discovered, the need arose for more equipment, and we were particularly grateful to the County Architect's Department for constructing a hoist and shoring up the excavation to ensure safe operation. When we reached the level of the abandoned water course, flooding became a problem and we were grateful for the loan of an electric pump from Flygt Pumps Limited, without charge, and also for a grant from the County Council to meet the cost of hiring a generator.

At the same time that we were seeking archaeological evidence, once we had ascertained

that a water powered installation had existed, we sought documentary and oral accounts. Maps and plans were surprisingly unhelpful because not only was the water wheel under cover, but both the head race that led water to it and the tail race that drained the water away were underground. The only documentary evidence of significant value found so far is a reference in a Sale Catalogue to the equipment. We appealed for oral information in the press and on the local radio. Local historians provided general information about the site, but detailed information about the use of water power was obtained from Mr L Bartholemew and Mr C Mortimer. Mr Mortimer was born on Brownwich Farm and lived there until he moved to Privett in 1938. We visited him to make a tape recording of his recollections of the farm and its water powered equipment, and subsequently he was kind enough to come to the site and confirm our interpretation of the archaeological evidence. By the 14th March 1982 we had almost completely excavated the wheel pit, the seating of the sluice and the end of the culvert carrying the head race. The water reached the wheel by way of an intermediate chamber, the wheel being placed at about 90 degrees to the line of the culvert. In exposing the pit, a number of objects were found, some of which had no obvious connection with the water wheel — for instance, a mill damsel. On the other hand, we found

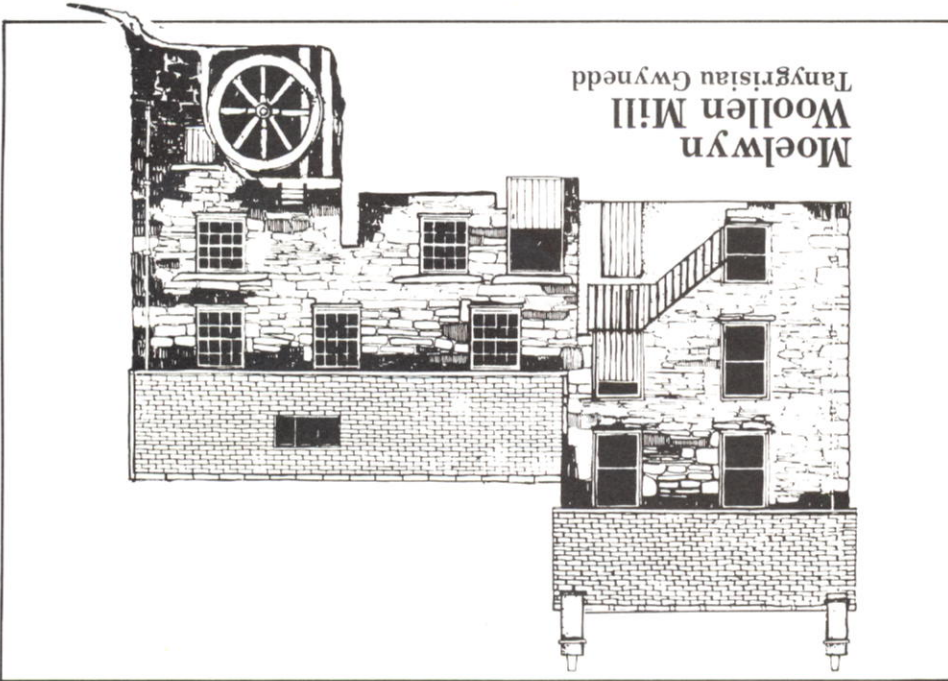
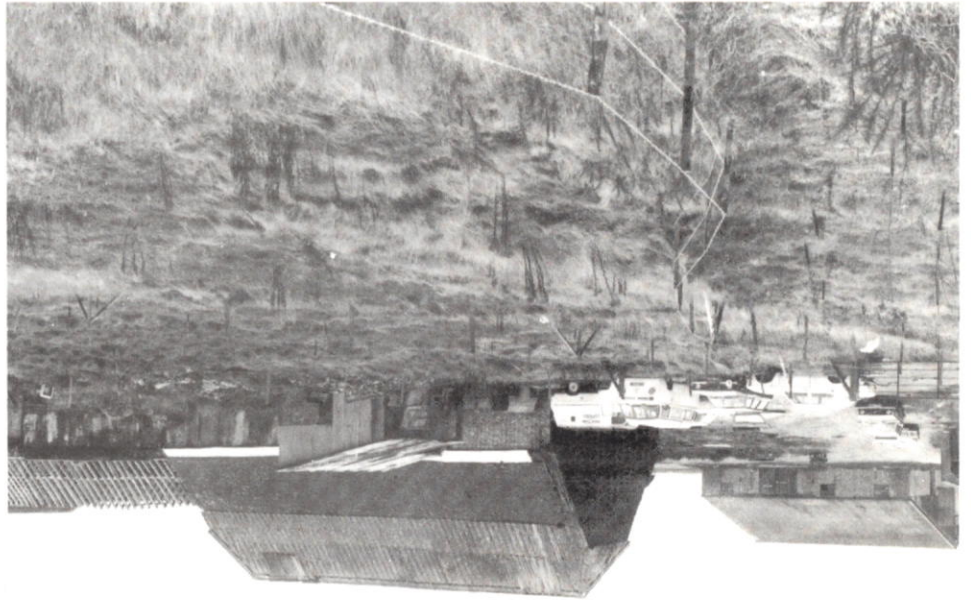
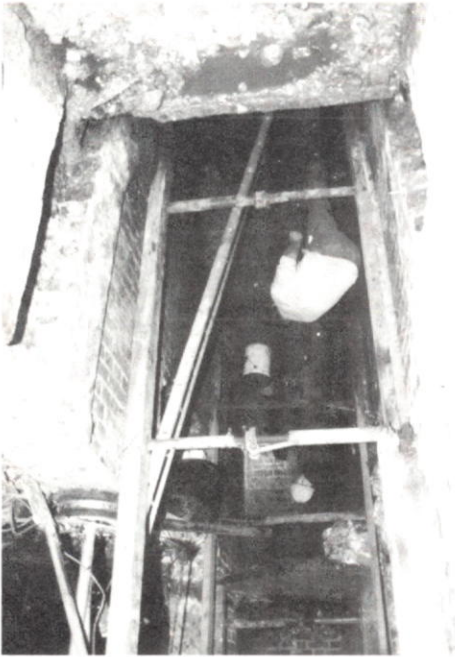
sufficient parts of the wheel to indicate its dimensions and its construction of wood. The position of the culvert carrying the head race was indicated by the discovery of both the sluice leading from the pond and the arch leading into the chamber adjoining the wheel. A trial trench was dug to fix the position of the corresponding culvert carrying the tail race but by 14th March 1982, it had not been reached. As an interim measure on Friday evening, April 23rd 1982, a quantity of dye was placed in the wheelpit and a series of visits made to the site on 24th April was rewarded by the appearance of the dye at a point leading into a stream where the end of the culvert was expected to be. Sufficient historical information having been obtained it was decided to suspend further activity until the County Council had decided how they wished to develop the site.

**Preliminary Description of the Water-Powered Equipment.** While a very good example remains at Durford Abbey Farm just over the border in Sussex, very few examples of farm machinery driven by water power are known in Hampshire. The wheel at Hockley Mill near Twyford once drove a threshing machine, but the only example comparable to that at Brownwich is at Abbotstone Farm north of Alresford. The installation at Brownwich may have been constructed in the late Victorian period and went out of use in the early part of the Second World War, when tractors provided an alternative source of power. For most of the time, the farms at Meon, Chilling and Brownwich were worked together, with an acreage of about 2000. The rich soil produced good crops and also supported large numbers of sheep. Numerous machines, including chaff cutters, root cutters, winnowers, crushers and cake crackers were installed in the barn at Brownwich, and were driven by water power. In Mr Mortimer's recollection, a Mr Sandy was responsible both for the operation and the maintenance of the plant.

The source of water was the large pond adjoining the farm, which is believed to have been a fishpond of Titchfield Abbey. This is shown on all the maps we examined. The water for the wheel was taken off through a sluice in the south east corner of the pond, which has now been drained. The dam supporting the main pond, which is now used for fishing, was repaired by the Southern Water Authority in 1981 but a small quantity of water leaks into the drained section. To remove this a concrete pipe runs from the sluice which regulated the water supply to the chamber adjoining the wheel to the outlet from the water power system in an open stream. This should completely bypass the wheel pit, but in fact small quantities of water do leak into the old system. There are sufficient remains of the sluice to show its original dimensions and the way in which it worked. The brick culvert from the sluice to the chamber runs under ground in constant use and will not be excavated. However its dimensions have been ascertained by examination of the ends.

Water from the culvert was discharged into a brick lined chamber which has been almost completely excavated. Its function remains in some doubt, but it is hoped to settle the problem by reference to comparable features in other parts of the country. The water was then controlled by a sluice, which regulated the flow onto what was probably a low breastshot wheel. It seems to have been about sixteen feet in diameter and four feet wide. One of the





Falcon enclosed the drawing reproduced below and adds that the mill is unique in Wales, with all its original machinery and that it was one of the last British mills to use water-powered fulling stocks.

**Salford Brass Mill.** In the Bristol area, the target for 1982 by completing its initial phase of rescue work in the building, is all set to tackle a further phase in the knowledge that a 50% grant is again on offer from the DOE for £12,000. Donations would be very welcome. The completed work carried out by Acredale Builders on the cracked and bulging walls of the furnace, has assured the future of this important feature described as unique by the DOE. The timber donated and delivered by members of Risca's Oxford House IA Society is now in place and supporting the balance beam

**For sale a unique water-powered woollen mill.** AIA member Falcon Hillred has sent us the following letter.

15 Jan 85

Dear Sirs,

I enclose details of Moelwyn Mill Museum, which is the site of a four-year-old mill above the river in the county planning Dept. I managed to save it from demolition, but now, because of absurd rates, it has today been put up for sale. Information can be obtained either from the owner Bledwyn Jones at Blaenau Ffestiniog 240, or me, Falcon Hillred at Blaenau Ffestiniog 540.

Sincerely, Falcon Hillred



*Edwin Course*

bearings has survived in situ.

The tail race was carried in a culvert, and although neither end was exposed it was assumed to run from the wheel pit to the open stream in a direct line. As mentioned above, at the time of writing, excavation on that line has not reached the top of the culvert, but the insertion of dye in the wheelpit has confirmed its approximate alignment.

It has not yet been ascertained whether the drive from the wheel was taken from the axle, a rim or off some other point. However, two metal castings in the wall of the barn show the position of the drive shaft and of the shaft controlling the sluice and hence the wheel. Both are marked 'W Wheatley, Wickham, Hants' but unfortunately Messrs Wheatleys have no information about them. Mr Mortimer confirms that the drive shaft was connected to lay shafting which was fixed on the underside of a floor in the barn which has now been removed. Not only the floor, but also the lay shafting and the various machines have all gone. It is however, possible that a supply of spare belting may have been left over from the water power period.

To summarise, enough information has been gathered to confirm the former existence of water powered machinery and to cast some light on its character. According to the policy of the County Council, we shall either back fill the site or else complete the excavation. In either case, a detailed report will be prepared, illustrated by drawings prepared by Mr John Reynolds of the County Architects' Department. It remains to thank Messrs Flygt Pumps and the Hampshire County Council Architects, Planning and Museums Departments for their help. A list of acknowledgements to individuals would be unduly lengthy, but I should like to express particular thanks to Mr C Mortimer and Mr Bartholemew for their recollections, to Mrs Sally Hall for the local historical background and to members of the Southampton University Industrial Archaeology Group, in particular Mr John Silman, for their dedicated labour and expertise.



which once opened the door of the furnace. The waterwheel repaired by Dorothea Restoration Engineers is now capable of working once again and will be turned regularly at working parties every fourth Saturday of the month when members of BIAS set to work. A recent gesture of collaboration from a group with rather different interests came from members of the British Aerospace Sub-aqua Club on a recent mid-winter Sunday morning when they volunteered to investigate and survey the culverts through the building. The well-organised operation, carefully supervised from the safety angle had several different teams working simultaneously from opposite ends of the building, and with fifteen divers available, were soon able to confirm previous indications that the culverts are in surprisingly good condition. The project is still in need of supplies of old clay pantiles in large or small quantities, and more particularly, small quantities of glass pantiles would be very acceptable. Any trestles and table tops, or folding tables could also be put to very good use. Offers to Joan Day, 3 Oakfield Road, Keynsham, Bristol BS18 1JQ.

**Horizontal Wells Again.** The following information on the making of 'horizontal wells' in connection with canal construction is taken from a curious geological treatise by the Rev Joseph Townsend, published in 1813. Despite its title, *The Character of Moses Established for Veracity as an Historian, recording events from the Creation to the Deluge*, this work contains much accurate first-hand geological information, its author having learned the principles of stratigraphy from no less a teacher than William Smith, their discoverer. There are also numerous intriguing descriptions of well-winking, coal-trials, and the like.

Townsend refers to the application of Smith's

stratigraphical principles in canal planning and construction, and tells us that 'it was this knowledge, derived from Wm Smith, which enabled Bevan to direct his drift into the chalk hills at Tring, by which he secured a supply of water for the Grand Junction Canal'. Is this 'drift', or horizontal well, still in use or accessible? Is any more known of its dimensions, and when it was made and by whom? Are others extant?

Townsend goes on to refer to canal planning and the need to make the canal in relation to springs so as to obviate the tendency for the puddled clay bed to be washed away, and the need for drainage drifts below it. Rather, he says, 'the skilful geologist will detect the origin of these springs, and having found them above the level of his canal, will cut them off by a drift into the hill, and thereby derive an additional supply of water for his canal, instead of leaving these springs to undermine it and wash away its bed of clay'.

Paul Sowan

## AIA Swapshop

**Coal Projector for Disposal.** ICI at Buxton will shortly be disposing of a Coal Projector which has been used at Hindlow Kilns. The Association has been sent full details, including drawings and photographs and ICI are interested to know whether any organisation would like to acquire this item for preservation. Further details of the item of equipment can be obtained from Stuart Smith, AIA, The Wharfage, Ironbridge, Telford, Shropshire TF8 7AW. It is intended

that the details should be lodged at the Derbyshire County Record Office at Matlock.

**Overshot Waterwheel.** All iron bolted construction, fed before vertical centre-line from a cast iron box launder.

Shrouds carry 30 curved iron buckets part original, part said to date from 1955. Shrouds supported by two sets of 6 'T' section cast iron arms mortices at each end and bolted to shrouds and naves. Shaft nominally 6" diameter with two 2 ft diameter c.i. naves. Continuous sole of plates is bolted to shrouds and buckets. No manufacturers name is evident but the wheel was probably constructed in the latter part of the last century. Penstock hatch is available.

Size: 9'10" diameter x 5' 5" between shrouds.

10 No new 1/8" steel buckets and two Cooper split roller bearings will be supplied. C.I. launder end plate and hatch also available.

Available, dismantled in Bristol, from the owner:

G Wallis,  
7 Fourth Avenue,  
Bristol BS7 0RN. Telephone (0272) 697815.

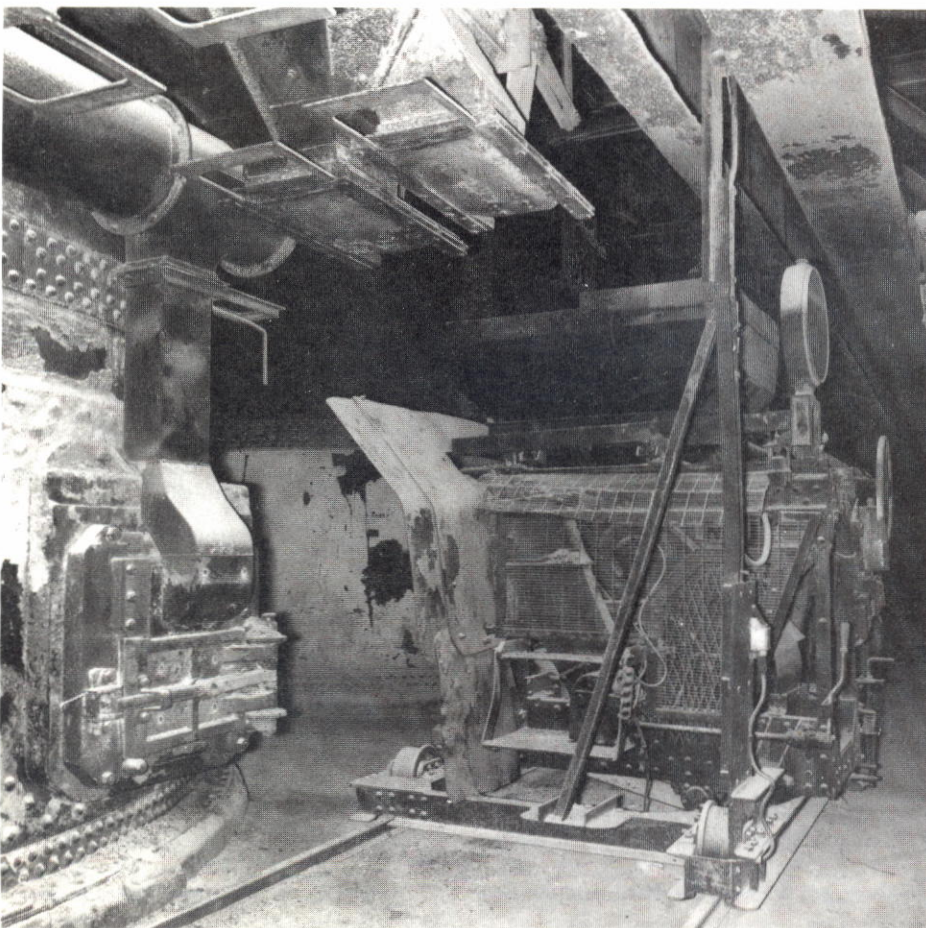
**Rolls Royce of Shrewsbury** have on offer a **Barker Process Camera** which can be used to enlarge or reduce engineering drawings. It is vertically mounted, of considerable size and in working order. Enquiries should be made to Stuart Suffield, Rolls Royce, Public Relations Department, Shrewsbury 52262.

**Ruston Oil Engine.** Elliott Brothers of Cheltenham have for disposal a Ruston Horizontal Oil Engine, class HR, size 9, manufacturers No 249498. This single cylinder engine is available to preservation bodies and those interested should contact Mr R W Elliott, c/o Elliott Brothers (Cheltenham) Limited, 1 Kings Road, Cheltenham, telephone Cheltenham 516552.

**Wanted. Feed-pump, steam driven air-compressor and steam/diesel oil burners.** Renver Engineering of Green Lane, Studley, Warwickshire, are very anxious to obtain the following equipment:

- 1 Feed pump,** as fitted to portable boilers. These boilers are on wheels (approx 5' - 6' dia) generally used in dock yards to supply domestic steam to ships in dock - the feed pump is horizontal, usually fixed about half way along the boiler, approximately 24" in total length and with a piston of 1 1/2" dia x 10" stroke. Open suction to tank and approximately 3/4" dia discharge to boiler.
- 2 Steam driven air compressor.** No details as to pressures and CFM, but the compressor will be driven from the portable boiler so assume a steam pressure of 100 lbs sq in and normal pneumatic workshop tools or paint sprayer to be run from the compressor.
- 3 Steam/diesel oil burners.** Apparently two tubes of approximately 1/2" diam x 24" long; the steam, by venturi action, picking up diesel fuel and the mixture burning quite well in the furnace.

Anyone who can help is invited to get in touch with Mr K Renshaw at the above address or by telephone on 0527-854811.



ICI Coal Projector.



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# AIA Calendar

**Famous Windmill for Sale.** One of Norfolk's most picturesque windmills is up for sale. The brick built tower mill at Cleyn-next-the-Sea is believed to have been erected early in the 19th century; a nearby jetty on the River Glaven enabled corn and flour to be directly shipped, and the granaries adjacent to the mill held 100 tons of corn, with two coalyards indicating that a considerable shipment of corn, flour and coal were dealt with by the miller. When sold 56 years later, the mill had three pairs of stones; the tenant miller then bought the freehold, and his sons who by then traded as bakers only, sold the mill in 1921 for £350 and it was converted into a holiday house with fine views northwards over the Clay Marshes bird sanctuary and Blakeney Harbour, now a property of the National Trust.

Although still boasting four double skeletons sails and an 8-bladed fantail, the mill has no internal machinery. In 1961 it was the first

the current Public Appeal to finance repairs to the famous Botlack Engine Houses, organised from Cornwall by the Carn Brea Mining Society, Derbyshire and the repointing of smelt mill chimneys in Yorkshire. Most societies have almost the whole country, and would welcome visits from other AIA members, to see a very different sort of work in progress.

NAMHO itself hold a biennial conference, the next of which is to be held at Leeds, 10-13 June 1983. Details of this, a list of NAMHO members and any other information, can be obtained from the Secretary, M C Gill Esq, 38 Main Street, Sutton-in-Craven, Keighley, West Yorkshire.

**Newcomen Society Spring Meeting**  
May 6 - 8 1983

**Fieldwork on Turnpik Roads**  
May 7 - 8 1983

**AIA Education Group Conference**  
April 23-24 1983

**Historical Metallurgy Society Sheffield weekend**  
May 7 - 8 1983

**Brecon Beacons National Park**  
On 8 October 1982 a national park consultative conference took place in which 60 organisations including the Association for Industrial Archaeology made known its views on the Brecon Beacons National Park plan. On this occasion David Bick acted on the Association's behalf having been invited to put the views of industrial archaeologists at very short notice. It would be more appropriate if the Association was represented at future consultative conferences by someone in the Brecon Beacons and anyone interested to carry out this vital task should contact the Secretary.

**Enquiry from New Zealand.** One of our members, Mr Brian Wood of 201 Weston Road, Christchurch, New Zealand, is anxious to get in contact with other members who are working in the fields of Coke manufacture, especially Beehive coke ovens, Briquetting and Freclay manufacture. He is particularly interested in the period 1870 to 1880 and if any members wish to contact him they should write direct.

**A study of the first and second Ludlow Turnpike Trusts** involving walking along abandoned roads, recording toll-houses and searching documentary sources. Details from Barrie Trinder, Ironbridge Gorge Museum Trust.

**A residential weekend meeting** in North Wales, based near Blaenau Ffestiniog. Visiting a working state mine, a 1904 beam engine, the Dinorwic Pumped storage electricity generating plant and the Welsh Museum of Slate. Cost approx £45. Details from Ian McNeil, Newcomen Society, Science Museum, London SW7 2DD.

**Introduction and visit** to Kelland Island Industrial Museum, Abbeystead Industrial Hamlet and iron working sites near Sheffield. Expert commentary. Details from Ken Barracough, 19 Park Avenue, Chapelton, Sheffield S30 4WH.

**Cost £25 (£22 for AIA members or members of AIA Affiliated Societies.)** Details from Edwin Course, Department of Adult Education, University of Southampton.

**The 4th Annual Education Conference** will be based on Jackson Tor House, Matlock and will include lectures and visits to Cromford and the Magpie Mine, all carried out with the theme 'The use of Industrial Archaeology by Teachers' in mind.

**Cost £25 (£22 for AIA members or members of AIA Affiliated Societies.)** Details from Edwin Course, Department of Adult Education, University of Southampton.

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**An IA visit to Anglesey and the Greenfield Valley**

May 14 1983

**Metal and Slate Mining in Wales**

May 28 - 30 1983

**Canals around the Peak District**

May 30 - June 3 1983

**Building stones and the Industrial Revolution**

June 4 - 5 1983

**Northern Mining History Conference**

June 10 - 13 1983

**Industrial Sources for Local Historians**

June 18 - 19 1983

**Subterranea Britannica Dudley Weekend**

June 24 - 26 1983

**History of Electrical Engineering**

July 15 - 17 1983

A visit to Parys Mountain Copper Mine (where copper ore was dug) and the Greenfield Valley, near Flint (where it was smelted and turned into fabricated artifacts). Details from Professor John Harris, University of Birmingham.

Based on Kings Youth Hostel, Dolgellau, this weekend conference organised by the Welsh Mines Society will include talks by experts on both industries and a visit to either a Blaenau Ffestiniog slate mine or a Dolgellau gold mine, where it is hoped to go underground. Cost about £20.00 and bookings which will be in great demand, to Graham Hall, Kings Youth Hostel, Dolgellau, Gwynedd, LL40 1TB.

A residential course for canal enthusiasts in the environs of the Peak National Park. Visits to the Cromford Canal, the Ashton and Peak Forest Canal (including a boat trip to Marple Aqueduct). The Sheffield and North Yorkshire Navigation and canal preservation near Whaley Bridge. Cost £85. Details from Peter Townsend, Peak National Park Study Centre, Losehill Hall, Castleton, Derbyshire S30 2WB.

Based at the Ironbridge Gorge Museum, this weekend conference deals with the quarrying, transporting, cutting and architectural use of stone over the last two hundred years. Details from Michael Stratton, Ironbridge Gorge Museum.

The 1983 NAMHO Conference based on the Armley Mills Industrial Museum, Leeds. Lectures on coal, lead, iron, tin, gold and Fluorspar mining in Cornwall, Devon, Lancashire, Yorkshire, Cumbria, Scotland and 'Western Europe' Displays, slide-shows and possibly underground trips. Costs depending on participation and camping facilities. Details (if you send a SAE) from R E Hewer, 36 Benomley Crescent, Almondsbury, Huddersfield, Yorkshire HD5 8LU.

A course, based on Ironbridge, in which local historians are given guidance on the use of business records, probate inventories, census returns and archaeological evidence to investigate the history of mines and manufactories. Held in conjunction with the British Association for Local History. Details from Barrie Trinder at Ironbridge Gorge Museum.

Based on Wolverhampton Polytechnic Residential Centre, Himley Hall, near Dudley, this weekend will cover disused Limestone mines, canal tunnels, an underground munition factory, open cast roadstone quarries, Rock Houses, near Kinver and several museum visits. Details including costs (possibly quite low) from Margaret and Martin Guest, 34A Victoria Road, Fallings Park, Wolverhampton WV10 0NG with a SAE please.

The annual IEE History of Technology conference based, this year, on the University of Birmingham. Lectures will include The History of electro-plating in Birmingham, Refuse fired electricity generating plant, Accumulator trams of Birmingham, Early Baird TV (including demonstration) and Joseph Chamberlain and the first Electric Lighting Act. Details from Group Officers, LS (SG) SET Division, IEE, Savoy Place, London WC2R 0BL.

**ICOM 83.** The International Council of Museums will be holding their Thirteenth General Conference in Britain between 25 July and 2 August 1983. A month-long exhibition has been arranged in the Barbican Gallery from July 18 to coincide with the ICOM Conference. The Association for Industrial Archaeology has negotiated display space with the Conference organisers and this is available free of charge to individuals and affiliated societies of the Association who may wish to display information about their project. The Association will mount the exhibition material on Marler Haley Boards and arrange for the display of the exhibition. Those people interested in displaying material should send items to the Assistant Secretary at the Wharfage, Ironbridge, Telford, Shropshire TF8 7AW, during April and May and it is requested that displays should not be larger than approximately 3' x 2'. Leaflets to accompany your display can also be despatched and will be made available on the display stand. It is regretted that none of the material which is lent to this exhibition will be returned unless specific arrangements are made with the Assistant Secretary. If you have any queries please telephone Stuart Smith at Ironbridge (095245) 3522.

**Industrial Archaeology Recording Sheets.** The Sussex Industrial Archaeology Society have produced a most useful recording sheet together with a classification of industries. Details of the sheet and the scheme can be obtained from R G Martin, 42 Falmer Avenue, Salt Dean, Brighton.

**Sussex Industrial Archaeology Society.** A full programme of events has been organised by this Society for 1983. Their activities normally take place on a Saturday on a monthly basis and full details can be obtained from the General Secretary, R G Martin, 42 Falmer Avenue, Salt Dean, Brighton. Their latest Newsletter No 37 contains a report on the 1982 General Meeting and also a report from the Brick Study Group.

**A Directory of Local Societies and Kindred Organisations** has been compiled and published by the AIA for the benefit of those wishing to know about other societies with similar interests to their own. Copies are available at 50 pence plus postage on application to the Membership Secretary at Ironbridge.

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## **AIA** Bulletin

ISSN 0309-0051.

*Is published by the Association for Industrial Archaeology. The AIA was established in September 1973 to promote the study of Industrial Archaeology and encourage improved standards of recording, research, conservation and publication. It aims to assist and support regional and specialist survey and research groups and bodies involved in the preservation of industrial monuments, to represent the interest of Industrial Archaeology at national level, to hold conferences and seminars and to publish the results of research. Further details may be obtained from the Membership Secretary, Association for Industrial Archaeology, The Wharfage, Ironbridge, Telford, Shropshire, TF8 7AW England. Telephone 095-245-3522.*