

GUNPOWDER MILLS STUDY GROUPNewsletter No. 3May 1987

AUTUMN MEETING AT FAVERSHAM, SATURDAY, 26th SEPTEMBER, 1987

The Faversham Society has kindly agreed to host our autumn meeting this year. This will be based at the Fleur de Lis Heritage Centre, Preston Street, Faversham, and will include visits to sites, including Chart Mills which are being restored to working order.

PROGRAMME

- 10.30 Coffee
- 11.00 Faversham Gunpowder Industry: talk by Arthur Percival, MBE.,BA.,FSA.
- 12.00 Tour of Heritage Centre
- 12.45 Lunch: members make own arrangements
- 2.00 Visit to Chart Mills, led by Peter Hingley
- 2.30 Visit to Stonebridge Pond
- 3.00 Visit to Dare Works
- 4.00 Tea
- 4.30 Tonbridge Works: illustrated talk by David Hansell, BSc., PhD.
- 5.00 Outline history of Dartford Works: talk by Alan Crocker, DSc.,CEng.
- 5.30 Close

Cost: There will be a charge of 50p per head to cover coffee, tea and biscuits, and an administrative charge of £2 for non-Faversham Society Members.

Parking: Members are advised to park on street outside the restricted area and walk to the Heritage Centre (about 5 mins).

The visits to sites will involve a certain amount of walking and the Dare Works are rather spread out and overgrown so stout footwear is desirable.

VISITS ON SUNDAY, 27th SEPTEMBER

Arrangements are being made for a visit to the site of the Leigh Mills at Tonbridge on the Sunday afternoon, led by David Hansell. The site is overgrown and it is necessary to negotiate a stream so wellington boots are essential. Meet at 2.30 pm at The Plough, Leigh. TQ 568469.

It is also hoped to visit the Dartford site on the Sunday morning. If you would like further details please send a s.a.e. to:

Glenys Crocker, 6 Burwood Close, Guildford, Surrey. GU1 2SB

or telephone Guildford 65821 before 31st August.

WEEK-END VISIT TO CORNWALL, 15 - 17 MAY 1987

Members may like to know that the week-end visit which was at the early planning stage at the time of the autumn meeting is going ahead with a party of seventeen members and guests. We shall be visiting the Kennall Vale and Bishops Wood sites near Truro, Herodsfoot near Liskeard and Powdermills on Dartmoor

REPORT ON WEEK-END MEETING IN WEST LONDON: OCTOBER 1986

About 25 members attended the meeting at Gunnersbury Park Museum on 11th October. The main talk was by Phil Philo on documentary research on the Bedford Mills. This was followed by shorter talks by Elizabeth Wood on water transport of gunpowder and by Alan Crocker on the mills of the Lake District. After lunch we saw the ICI film 'Goodbye to Roslin', a film on loading shells at Woolwich and part of an unedited video of an interview with Tom Pritchard at Glyn Neath. This was followed by tea and a general discussion. During the lunch break Phil Philo showed us around parts of the Museum not normally open to the public. On the following day about 15 members visited the Bedford and Hounslow sites. Many thanks to Phil Philo for hosting this informative and enjoyable meeting, and for his efforts in obtaining the films and video. Thanks also to Ken Flemming for acting as our guide around the Hounslow site. A collection was made on the Saturday which enabled the 'Goodbye to Roslin' video to be purchased. Members wishing to borrow this should contact Phil Philo.

GLYN NEATH VISIT

The winter 1986 Bulletin of the Association for Industrial Archaeology included an account of the Group's visit to Glyn Neath last June, together with a photograph of Tom Pritchard, who showed us around the gunpowder site, talking to Bryan Earl.

GUNPOWDER MILLS GAZETTEER: PROGRESS REPORT

Typing is in progress on the final camera-ready copy for the gazetteer, which will be of the order of 60 pp A5, with several line drawings and maps.

Glenys Crocker

C.O.G.S. MEETINGS

Glenys and I have been representing the Group on the Committee of Groups and Section (C.O.G.S.) of the Wind and Watermill Section of S.P.A.B. Most of the business is concerned with corn-mills but there is an increasing interest in other industrial activities including gunpowder mills. I am acting as chairman for the two 1987 meetings.

Alan Crocker

NEWS OF MEMBERS

Congratulations to Jenny West, Keith Fairclough and David Hansell who have been awarded Ph.D's recently. Jenny's thesis is on the supply of gunpowder to the Ordnance Office in the mid-18th century, Keith's is on the Lea navigation but David's is probably unrelated to gunpowder.

George Kelleher has been involved in a serious road accident but following a period in hospital is now at home and making good progress. Unfortunately he has had to withdraw from the May Cornwall visit but is looking forward to being with us at Faversham in September.

RAILWAY GUNPOWDER WAGONS, PART II

Since I wrote a note on this topic in Newsletter 2 there have been a few developments.

1. Ted Crawforth has sent me a revised list of Southern Region pre-grouping wagons, a photograph of the London & South Western Railway wagon which is now awaiting restoration at the National Railway Museum at York, and two diagrams of British 11 ton gunpowder vans.
2. Grahame Boyes has drawn my attention to the following publications:
CLARK, Brian. 'The Gunpowder Railway at Waltham Abbey'. Bath, Author 1985 8pp
HODGSON, J. B. 'Explosives-handle with care'. Lancs & Yorks Railway Journal No. 17 (1985), pp 6-15
TATLOW, Peter. 'A Pictorial Record of L.N.E.R. Wagons'. Poole, Oxford Pub. Co. 1976. (N.E.R. & L.N.E.R. gunpowder vans on pp 107-8)
LEWIS, J.H. LLOYD, M.E.M., METCALF, R.C., & MILLER, N.R. (All about ~~E.W.R.~~ Iron Minks'. Historical Model Railway Soc. 1980. 56pp.(Includes sections on Gunpowder Vans and Cordite Paste Vans).
3. In September I visited the Lowood gunpowder site in Cumbria and discovered that the van I had seen there previously seemed to have deteriorated substantially and was told that the remains of four more vans exist at the site. I therefore visited the nearby station on the preserved Lakeside and Haverthwaite Railway and asked whether they were interested in restoring a gunpowder van. I was advised to contact Tim Owen who is the Chairman of the Lakeside Railway Society. He informed me that by coincidence they were planning to rescue a wagon last autumn and hope to restore it.

HARVEY'S BOULTON AND WATT ENGINE AT BATTLE

The article by Herbert Blackman on the Gunpowder Works at Battle, published in the Sussex Archaeological Collections, Vol.64, pp 109-122 (1923), states that a beam engine was installed at the House Mills in about 1814. Plans and elevations of the engine and boiler houses have now been obtained from the Boulton and Watt Collection at Birmingham Public Libraries. They were prepared for Mr. W.G. Harvey (later to establish Curtis's and Harvey at Hounslow), are dated July 8th 1806 and are at a scale of 1/3 in to the foot. The internal dimensions of the engine house are 24ft x 9ft x 32ft high. The details of the engine are not given but it can be deduced that the beam was 13ft long between the centres, the connecting rod 11ft 4in long, the stroke 4ft, the cylinder about 2ft in diameter externally, and the flywheel, which turned 50 times a minute, 12ft in diameter. The boiler house is shown alongside the engine house and is 26ft 3in x 18ft externally. It contained two boilers 4ft 9in across and 10ft long. The chimney was square, being 18in across internally and 3ft 8in externally, reducing to 3ft at the level of the roof of the engine house. The shaft of the flywheel was extended outside the engine house by a shaft in three sections 37ft 2in long to link via a clutch and two spur wheels with a waterwheel.

At the site today the only obvious survival of the above buildings seems to be the stump of the chimney. However, as reported by John Upton at the Glyn Neath meeting in June 1986, the recent construction of a swimming pool near this stump revealed foundations and beds of ash. Unfortunately the link with the waterwheel shown on the plans does not appear to be consistent with these features and John is attempting to unravel the problems.

I shall be happy to provide copies of the plans to members who feel they may be able to add to the above interpretation. Many thanks to Robin Clarke of the Midlands Mills Group for locating the plans and letting me have copies.

Alan Crocker

BARREL STENCILS

The barrel stencil with the words 'W H WAKEFIELD & CO LTD / GUNPOWDER / KENDAL / FO' presented to the Group by Tom Pritchard when he showed members around the Glyn Neath site last June has been deposited on loan at the Abbot Hall Museum, Kendal. In return John Anstey of the Museum has provided us with information about the other 284 stencils they have. These appear to be the ones found at Lowood and discussed on page 87 of 'The Industrial Archaeology of the Lake Counties' (IALC) by J D Marshall and M Davies-Shiel (2nd ed. Michael Moon, 1977). Most are single, double or triple letters, numbers, or combinations of both, sometimes contained in squares, rhombuses or triangles. These include 'LW' for Lowood, 'F' for fine and 'FF' for very fine, and no doubt others correspond to more obscure grades of powder, but the vast majority must be based on some other code or codes. Other perhaps more interesting stencils give the names (sometimes with inaccurate spelling) of overseas ports, where powder was being sent, such as Assinie, Boulah, Grand Bassam, Grand Lahou and St Louis in French West Africa, Ambrizete, Benguele and Dondo in Angola, Accra and Akuse on The Gold Coast and Sinoe in Liberia. The names of other overseas customers and also collieries, quarries and iron-ore mines in Britain are mentioned in IALC.

In addition to this wealth of information from the Abbot Hall Museum, Ken Major has given us a copy of some rubbings of nine stencils discovered in the records of the late Paul Wilson, author of 'The Gunpowder Mills of Westmorland and Furness', Trans Newcomen Soc, vol 36, pp 47-65 (1964). These are: 'AS (in triangle) / L' ; 'LW / GUNPOWDER' ; 'LW / GUNPOWDER / FF' ; 'XNL (in triangle) / TEN' ; '91b' : 'L / 2½' ; 'AMBRIZETTE' ; 'St LOUIS' ; 'CHILWORTH GUNPOWDER Co Ld / 20lbs / GUNPOWDER / LONDON'. Having just deposited a Lake District stencil found in South Wales at a museum in Kendal, it was a great surprise that they already had a Surrey stencil found in the Lake District!

Finally I mentioned the 'WAKEFIELD' stencil in an article I wrote about the Group which was published in the Bulletin of the Cumbria Industrial History Society last September. This prompted a letter from Peter van Zeller of the Ravenglass and Eskdale Railway who would like to display the stencil in a small museum associated with the railway. I sent him a rubbing, put him in touch with the Abbot Hall Museum and look forward to visiting him later in the year.

Alan Crocker

MATERIAL DEPOSITED in COUNTY RECORD OFFICES RELATING TO GUNPOWDER MILLS

The following items have come to light in a search for papers relating to gunpowder production. They have been listed for circulation in the Newsletter in the hope that members might find them useful.

1. Explosives Mill, Thelwall, Lancs. (Stanton Papers) D 157m/3554
Derbyshire Record Office, County Offices, Matlock. DE4 3AG
2. Chilworth Gunpowder Mills, Surrey. (Letter book 1790-1, Prospectuses, etc 1885-1900) Surrey Record Office, Castle Arch, Guildford. GU1 3SX
3. Schultz Gunpowder Co., Ltd. (Proposed erection of factory at Waltham Cross 1880-1) Essex Record Office, County Hall, Chelmsford. CM1 1LX
4. Lowood Gunpowder Mills. (Letters 1808-29 & 1858-63)
Lancashire Record Office, Bow Lane, Preston. PR1 8ND

These records have all been deposited within the last twenty years. There are likely to be others, not yet discovered, because they were deposited earlier. Any further contributions to this list from other members would be most welcome.

Brenda Buchanan

THELWALL GUNPOWDER MILLS, CHESHIRE: an 18th century Account Book

At the meeting at Gunnersbury Park Museum last October, Brenda Buchanan and Jenny West drew attention to a document listed in the National Register of Archives relating to powder mills at Thelwall. I recently had an opportunity to see the document which is in the Derbyshire Record Office at Matlock, in the Stanton of Snelston Hall Collection of papers (D157m/3554). John Standton was one of the proprietors and was manager of the works. The other proprietors were Sir Ellis and Robert Cunliffe and Charles Craven, manager of the Liverpool office.

The book is leather bound with 60 pages used. It starts with a report of a meeting in 1759 and continues with annual accounts from 1st Jan. 1760 to 1st Jan. 1779, with occasional additional memoranda and inventories and valuations. There is also a separate inventory dated 31st Dec. 1797 inserted in the book. This indicates that the land had been purchased in 1757 and 1759, the mills built in 1758 and other buildings and additions made in 1764, 1766, 1772 and 1774. A magazine at Black Rock, described as near Liverpool and also as 'in Worall', was built in 1763.

The accounts show that the value of the land and buildings plus goods in hand and debts totalled nearly £13 000 in 1761 and rose steadily to about £24 000 in 1768. It then fluctuated, with a maximum of over £26 000 in 1778 but fell to about £19 000 in 1779, after which the entries cease. The 1797 valuation is about 20% lower than that of 1777 and a much bigger proportion is in raw materials in hand. In 1777 about 250 barrels of powder were held at the works and 850 in the magazine, worth together about £3 800. One individual distributor is mentioned, Hugh Wyllie of Glasgow in 1768-70.

The importance of the mills is that they represent the earliest known establishment of the industry in the north of England, just pre-dating Old Sedgwick in Westmorland. They were presumably related to the trade of Liverpool which in the second half of the 18th century succeeded Bristol as the main port trading with West Africa and the Americas. They therefore belong to the same stage in the development of the industry as the Somerset mills which were established in the 1720's.

It is not yet known when the mills closed. It has been pointed out to me that there are powder mills marked on the 1871 25" O S map on the south bank of the Mersey, just downstream from the present Thelwall viaduct on the M6 motorway (SJ 6687). However I have not come across any other reference to these mills operating in the 19th century. Some further research on the mills would be very worthwhile.

Glenys Crocker

GUNPOWDER WINDMILL AT HASTINGS

Newsletter 30 of the Wind and Water Mill Section of the Society for the Protection of Ancient Buildings, issued in January 1987, reproduced on page 18 a picture of a plate from 'The Dictionary of Blue and White Printed Pottery 1780-1880'. The plate, which shows a windmill, is entitled 'Powder Mill, Hastings'. It is stated that the scene is thought to depict the windmill at Fairlight in East Sussex, 3 miles north east of Hastings. However no other evidence is known of this mill being used to produce gunpowder. No other windmills used for gunpowder making are known in the British Isles, John Upton is trying to locate further evidence for this example and would welcome any relevant information from members.

Alan Crocker

PHOTOGRAPH ALBUM OF WORSBOROUGH DALE GUNPOWDER MILLS

In Newsletter No. 1 it was reported that an album of 1893 photographs of Worsborough Dale Mills was held by the South Yorkshire Record Office at Sheffield. This album has now been examined and found to be very informative. It contains 13 views of mill buildings, taken in winter so that they are not obscured by foliage, and one portrait inscribed "Wishing you the compliments of the season, Xmas 1893, W C S". The initials are probably those of the manager William Sealy.

The first mill photograph is of the office but the other 12 show industrial buildings with workers posed outside. Most are single storey, with timber walls, slate roofs, windows (some with shutters) and heavy outwards-opening doors. Each has one or two notice-boards but unfortunately most of these are illegible. However, two of the photographs, which show a row of at least five incorporating mills, separated characteristically by thick stone walls and with corrugated iron sloping roofs and light front walls of timber and glass, have the following notices: "Mill men are strictly forbidden to enter the mills when starting on a green or dust charge. By Order" and "The quantity of powder to be packed (?) in this Mill shall not exceed 60 lbs Cocoa (?) powder." The man outside is carrying a watering can and there are three further cans and a pair of boots by a large tub. There is also a brush and a ladder standing on the wooden platform in front of the mills.

The other notice which can be interpreted is on the photograph of the store: "Drying House. The quantity to be kept in this building not to be exceed ? lbs." This is a brick building with a hipped roof surmounted by a large squat chimney presumably containing a spark catching mechanism. It also has a timber outshot at the front forming a porch and hence inner and outer doors. The man outside looks like a foreman. A few of the photographs show buildings protected by large mounds, which are largely natural. One shows six women workers and a man outside what could be the packing house. Finally a brick and slated building with no visible windows and three barrels outside seems to be the factory magazine. Nearby a large covered wagon with a semi-circular roof is parked and a smaller wagon, with an almost flat roof drawn by a pony led by a man, is approaching. None of the photographs show waterwheels and it seems likely that by 1893 the mills were entirely steam-powered. Indeed they were located conveniently adjacent to Barrow Colliery, and a visit to the site has confirmed that they are now completely covered by a massive spoil heap.

This photograph album is a particularly important archive of information on the history of the gunpowder industry. Copies of all 14 prints have been ordered and will be brought to future meetings of the Group. An attempt will also be made to match them to available plans of the site.

Alan Crocker

WORSBOROUGH DALE EXPLOSION 1907

Robert Higginson, curator of Worsborough Mill Museum (corn), has sent us a montage photograph produced at the time of the accident, showing pictures of damage and portraits of the two men who were killed, Robert Craig and Frank Senior.

Alan Crocker

NEW PUBLICATION

GUNPOWDER TERMINOLOGY AND INCORPORATION by E. M. Patterson

This duplicated A4 booklet of 32 pages, which has been published by the Faversham Society contains two papers by Edward Patterson.

The first is a 'Gunpowder Terminology' containing 76 entries and is a slightly expanded version of the author's recent paper in the Industrial Archaeology Review.

The full title of the second and more substantial paper is 'The Incorporation Process in the Manufacture of Gunpowder and the History of the Associated Explosions'. Its stated aim is "to examine the parameters of black powder incorporation and to study the frequency of mill explosions during the century after the passing of the 1875 (Explosions) Act." It contains a wealth of information not readily available elsewhere and all those involved in research into the history of the British gunpowder industry are strongly recommended to obtain a copy. At the exceptionally low price of 85p (plus 40p postage and packing for U K customers) they are available from:

The Faversham Society, Fleur de Lis Heritage Centre, 13 Preston Street,
Faversham, Kent. ME13 8NS

Alan Crocker

HALES, Stephen. A description of Ventilators. London, 1743.

In the chapter of 'The Usefulness of Ventilators ...', pp 119 - 126 refer specifically to the use of ventilators for drying gunpowder and Hales' experiments with same.

M. Watts

MEMBERSHIP CORRECTION

In the 'Amendments to Membership List' in Newsletter 2, the sub-heading "Additional Information" should have been inserted above the name of Dr. E. M. Patterson. He has not been deleted from the list.

GUNPOWDER MILLS STUDY GROUP

The aims of the Group are the study of the complete span of gunpowder and explosive industries, including the processing of raw materials and the manufacture and handling of the finished products and the exchange of ideas and information. Meetings are held twice a year.

Convenors: Professor Alan Crocker) 6 Burwood Close, Merrow,
Mrs. Glenys Crocker) Guildford, Surrey. GU1 2SB
Mr. Phil Philo) Gunnersbury Park Museum, Gunnersbury Park,
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This Newsletter was compiled and produced by Mr. & Mrs. John Upton.