



SOUTH WEST WALES INDUSTRIAL ARCHAEOLOGY SOCIETY

NEWSLETTER

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Newsletter 18, March 1978

Editorial Committee: F.G.Cowley, W.I.Roberts, P.R.Reynolds

Price to non-members: 10p

FORTHCOMING EVENTS

21 March

Annual General Meeting

7 p.m. Royal Institution of South Wales (Swansea Museum)

After the formal business meeting, Dr F.G.Cowley will present a short trail with slides - "The road to Llangyfelach"

Copies of the Agenda, the Hon.Secretary's report, and the Hon.Treasurer's statement are included with this Newsletter. Please come along to the meeting and let us have your views on what the Society ought to be doing.

(N.B. This meeting is on a Tuesday night, and not on our normal Thursday.)

13 May

Visit to Pontneddfechan gunpowder works under the leadership of Mr Robin Cole. Further details will be despatched in due course.

TWO REMINDERS

1. Have you paid your annual sub. yet? The Hon.Treasurer would greatly appreciate it if members who have so far overlooked this important matter could give it their attention and let him have their remittances as soon as is convenient. The rates remain unchanged at £1-50 p.a. (or 75p for full-time students and OAPs). A banker's order form is also available if this would be easier.
2. Have you returned your questionnaire yet? The Committee wants to be sure that in arranging events they have as wide an appeal as possible, and this questionnaire is designed to help us do this. If you haven't filled it in yet, please try to find time to do so, and thus let us know what you think your society ought to be doing -
- even better, come to the A.G.M. and say what you think in person.

OBITUARY

BRYN THOMAS. It is with great regret that we report the death on 27th September of our member and friend, Mr Bryn Thomas of Llandeibie. A member of the Carmarthen-shire Antiquarian Society as well as of our own Society, he was a well-known and respected local historian. His books included The Good Old Days (1973) and Days of Old (1975). These are a happy blend of historical narrative and personal reminiscence which, with the aid of photographs, recreate the past of Llandeibie, Llandeilo and the Amman Valley area. He also wrote a history of Llandeibie parish church and contributed a column to the Ammanford-based paper, The South Wales Guardian. Bryn Thomas was a keen industrial archaeologist. He attended a number of summer schools in the subject held at Aberystwyth and only a few weeks before his death acted as guide when a small party of our Society visited sites in the Llandeibie region.

F.G.C.

THANKYOU...

SOUTH WALES EVENING POST. The Society's dig at Scott's Pit received useful publicity when the Post Man's Diary column in the Evening Post wrote about it on 30th December. A generous amount of space was devoted to the dig, and a large picture of three grim-looking navvies in front of the engine-house ensured that the casual reader's attention was instantly attracted.

ROYAL PHOTOGRAPHIC SOCIETY. The R.P.S.'s Directory of British Photographic Collections was published at the end of last year. Among the 1,582 collections of which details were provided is our own SWWIAS collection which has been built up by Hayden Holloway and is maintained by him in the University College Library. The Directory is likely to prove a useful research aid, and it is hoped that this will lead to further use being made of our collection.

COURSES, ETC. IN IA.

Details have been received of the following events. Further information may be obtained from Paul Reynolds:-

Welsh Arts Council Exhibition in Llanelli Public Library on wrought iron work. Mainly photographic, but includes examples of ironwork as well.
March 8th - 15th, 9.30 to 6.0 (Monday to Friday), 9.30 to 1.0 (Saturday)

Department of Extra-Mural Studies, University College of Swansea
"The Making of the Welsh Working Class": a Llafur / Wales T.U.C. open week-end conference to be held at the University College, 31st March - 2nd April.

National Trust. Grand Spring Cruise from Swansea to visit S.S. Great Britain at Bristol. Leaving Swansea at 9.30 a.m. and returning at 8.30 p.m. on Sunday 2nd April. Fare: £6-00 each. Bookings to 22 Alan Road, Llandeilo, Dyfed.

9th Annual Conference of Western IA Societies

As noted in the recent circular this annual event will take place at Oxford House, Risca, on Saturday 15th April. The conference fee is £1 each. Morning coffee and afternoon tea is provided and lunch may be booked in advance at £1-50. There will be the usual programme of short lectures, and stalls will be selling the publications of participating societies.

Since the conference is near home this year, it is hoped that the SWWIAS will provide a good delegation. Booking forms have to be returned by 1st April.

Snowdonia National Park Study Centre

A number of IA courses are included in this year's programme at the Centre which is near Porthmadog. Dates and prices are as follows:-

- 4-11 March. Quarries and quarrymen. £50
- 1-7 May. Welsh gold mines. £44
- 3-10 June. Practical industrial archaeology. £50
- 17-24 June. Lead and copper mines. £50
- 27-29 October. Aspects of industrial archaeology. £20
- 29 October -
5 November. Industrial archaeology of Snowdonia. £50

The Centre is a very comfortable house, the food and accommodation are good, and these courses all appear to be excellent value.

Canals and Railways of the Peak District

A residential course to be held at the Peak District National Park Study Centre, Castleton, Derbyshire, from 29th May to 2nd June. The fee is £43 fully inclusive. The course consists of lectures, and visits to canals and railways. It includes a canal boat trip over the Anderton lift, said to be the only working canal lift in Britain.

The Midland Canals in Town and Country

This course will be held at Avoncroft Residential Centre, Birmingham, from 29th July to 5th August. The fee is £58 plus VAT (or £60 plus VAT for a single room). It consists of lectures, two full day trips, afternoon visits, two half-day boat trips and a rare feature film, 'Painted Boats'.

WILLIAM PRICE STRUVÉ, 1809-1878

April sees the centenary of the death of William Price Struvé. It is therefore appropriate that this issue of the Newsletter should contain an outline of the career of a local man who was a figure of some importance in the world of mining engineering in his day.

As his name suggests, Struvé was not a native Welshman. He was born in Jersey in 1809 and in about 1824 was articled to Henry Habberley Price of the Neath Abbey Ironworks who had married his sister Julia the previous year. Under Price, Struvé received a wide instruction in civil and mechanical engineering, and in 1834 became Managing Partner of the Millbrook Ironworks at Landore. He built up an extensive practice as an engineer and mineral surveyor, including the post of viewer, or consultant mining engineer, to the Governor and Company of Copper Miners in England, owners of the copper and iron works at Cwmavon. He was also an enthusiastic supporter of the Geological Survey at this period, and managed to find time to do some valuable work in this connection.

As well as being a mining engineer, Struvé was also able to turn his hand to other branches of his profession. In 1841 he produced a plan for the proposed Swansea & Loughor Railway which was based on an earlier survey completed by his mentor, H.H. Price. It involved the construction of a line from the newly-opened Llanelli Railway at Loughor to a spot in Swansea near the Pottery, and was intended to encourage coalowners to ship through Swansea. For this reason a number of branches to collieries in the vicinity were included in the proposals. A prospectus was issued and a public meeting held, but then the scheme was dropped without any further action.

The years 1846-1850 were in many ways the high spot of Struvé's career, for they saw the introduction of his colliery ventilator which brought him a considerable amount of favourable publicity. In the 1840s the normal method employed of mining coal in South Wales was the pillar and stall system. Besides being wasteful of coal which was left standing in the pillars, this system also led to inadequate ventilation and so to serious risk of an explosion because fire-damp built up in worked-out stalls. It was to provide an improved system of ventilation that Struvé patented his air pump in 1846 (Patent no. 11,127, 12th March). Before long an opportunity arose of putting the invention to practical use. Penrose & Evans' Eskyn Colliery at Eaglesbush near Neath was notoriously prone to the build-up of gas. Struvé himself said of it that if it were left to stand idle for twenty-four hours, all the stalls would fill with fire-damp. Explosions occurred at the colliery in 1841, 1845 (three times) and finally, and most disastrously, in 1848 (29th March) when twenty lives were lost. After this last catastrophe the opportunity was taken of installing the very first example of the mechanical ventilator. It was in the process of being installed in August 1848 when Struvé read a paper to the British Association on the subject at its meeting in Swansea. At the same meeting he also presented papers on atmospheric railways and on the geology of the coalfield, which gives some idea of his breadth of interest.

Struvé's ventilator comprised two large bells, or aerometers, powered by a steam engine, which moved up and down in a masonry casing partly filled with water to form a seal. A pipe passed through the water by means of which the aerometers drew air out of the pit as they rose. As they fell they expelled the air through valves and so created a vacuum which once again was filled with air from the pit. The principle was not new, but Struvé improved it by covering the aerometers and making the apparatus double-acting. The example constructed at Eaglesbush had two aerometers, each 12 feet in diameter, with a 4-foot stroke. They were powered by a 5 h.p. engine working at $7\frac{1}{2}$ strokes per minute. It had a maximum capability of passing 40,000 cubic feet of air per minute, but because the upcast shaft at Eaglesbush was too narrow, it only achieved a performance of 13,500 cubic feet. A drawing of the ventilator appears in the Transactions of the Newcomen Society, vol.42, 1969/70, Plate Ia.

In March 1849 Struvé was elected a Member of the Institution of Civil Engineers, and on 5 July of the same year gave evidence to the Parliamentary Select Committee on the Prevention of Accidents in Coal Mines. He had clearly made his mark as an accepted authority on the subject of colliery ventilation both within his profession and nationally.

In November 1850 Struvé read a paper to the I.C.E. for which he was awarded a Telford Medal, and was able to report that two more collieries near Swansea had installed his ventilator, the Millwood and the Mynydd bach-y-glo. Although opposition existed to mechanical ventilators, due largely to the number of parts which could go wrong, this was soon broken down and mechanical ventilation became the norm. As well as Struvé's design, examples were also produced from designs by Brunton, Waddle and others.

In 1860 Struvé was appointed Manager of the Cwmafon works. Two subjects in particular exercised his attention here, the production of so-called homogenous iron to improve the durability of rails, and the conversion of copper smoke into sulphuric acid. However, the advent of the steel rail put paid to the first, and his resignation in 1870 took place before he could bring the second scheme to fruition. A further invention, which was said to have been a boon to those obliged to do delicate work in fiery collieries, was a safety lamp. However, it was not widely known, one of the reasons for this, it was suggested, being Struvé's dislike of pushing himself and his inventions forward.

After his resignation from Cwmafon, Struvé gradually withdrew from engineering. He settled at Crynallt, Neath, where he died on 10 April 1878.

Principle References

Galloway, R. Annals of coal mining and the coal trade. 2nd series. London, 1904.
Morris, J.H. & Williams, L.J. The South Wales coal industry 1841-1875. Cardiff, 1958.
Institution of Civil Engineers. 'Memoir of William Price Struvé', Proc.I.C.E., 52, 278-80.
P.R.R.

LOCAL STUDIES RESEARCH

An ad hoc committee at University College, Swansea, the Local Studies Committee, of which our Vice-Chairman, Dr Fred Cowley is a member, is investigating ways in which local studies in our region can be promoted and made to serve community needs. One of the committee's objects is to establish a register of research being carried out in local studies. Any member of S.W.W.I.A.S. who is carrying out research into any aspect of local studies is invited to submit his or her name for inclusion on this register to Mr R.V.Barnes, Assistant Registrar, University College of Swansea. The submission should also include a very brief resumé of the work being undertaken.

"ACES"

Action for the Care of the Environment in Swansea is a body of Swansea residents with a concern for the quality of the environment in which we all live. Most of the members are architects, planners and surveyors, but it also includes and welcomes any lay members who share its concern.

The group was formed because of a widespread feeling of disquiet at the progressive erosion of the character of Swansea through the demolition of old buildings, the disruption of old-established communities, the loss of historical continuity and the insipid modern buildings which result in a bland and characterless Swansea with nothing to distinguish it from any other large city.

ACES hopes to pinpoint buildings of architectural or historic merit which deserve to be preserved, and to make a case for the retention of more of the humbler old buildings which give the city its character. The group is also anxious to increase public awareness of the issues involved in redevelopment, and has plans for a public exhibition.

The field of urban redevelopment is one where architects and industrial archaeologists find an overlap of interest. Three recent cases in this region that illustrate this are Neath station, Weaver's mill and the Carlton cinema.

Further information may be obtained from ACES, 32 Summer Place, Llansamlet, Swansea.

RECENT LITERATURE

G.F.GABB. 'Driving an iron road through the hills'. (The Carmarthenshire Historian, 14, 1977, pp.76-81.)

The iron road in question is the Llandovery - Llanwrtyd Wells section of the Central Wales line, opened in 1868. The writer shows how this was an event of more than local significance, for it provided South Wales with a standard-gauge railway link to the Midlands and North of England in competition with the broad-gauge monopoly previously enjoyed by the G.W.R. The two engineering features were the Cynghordy viaduct and Sugar Loaf Tunnel, the piers of the former of which, it is interesting to learn, were built of sandstone quarried at Dunvant.

G.M.HOLMES. 'The South Wales coal industry, 1850-1914'. (Trans.Hon.Soc. Cymmrodorion, 1976, pp. 162-207.)

A wide-ranging survey of the coal industry during the period in question. There is evidence to show that South Wales lagged behind the rest of the U.K. where mining technology was concerned, and that both managers and workers adopted a conservative outlook and were suspicious of innovations. Nevertheless, the writer concludes, in the period up to 1913 South Wales had a major achievement to its credit in the form of an export-led boom.

L.INCE. 'The Neath Abbey Ironworks'. (Industrial Archaeology, 11,4, 1977, pp. 21-37.)

It is good to see the re-appearance from a new publisher of the journal Industrial Archaeology after its long dormant period. The revival is all the more welcome when the first volume of the new series contains an article by a member of our own society which has been awaiting publication for some time. Making use of a number of illustrations and a good clear plan, the writer gives an account of the history of this successful undertaking and describes the buildings still to be seen and their original purposes. It is to be hoped that this article will contribute to these important remains becoming better known.

J.B.LOWE. Welsh industrial workers' housing, 1775-1975. (National Museum of Wales, 1977. 75p.)

This attractive and well designed booklet is a rich source of information on its subject, and forms a welcome introduction to it. The author seeks "to link the variety of house forms which can (or rather, could) be seen in our towns with the conditions of life experienced by our ancestors". Examples are drawn mainly, but by no means exclusively, from the South Wales coalfield and include Princess Street, Swansea and Ty-maen, Cwmavon. The standard of production is excellent and the illustrations, both photographs and drawings, attractive and informative.

B.S.OSBORNE. 'Patching, scouring and commoners: the development of an early industrial landscape'. (Industrial Archaeology Review, 1,1,1976, pp. 37-42.)

The author describes the late 18th century practice in the Merthyr area of patching (i.e., quarrying iron ore and coal by means of shallow workings along the outcrop) and scouring (i.e., collecting a head of water and then releasing it to wash away the topsoil). Both made a considerable impact on the landscape and affected the commoners who had previously enjoyed the right of grazing their animals on the moors.

SWANSEA CITY COUNCIL: Planning Department. Lower Swansea Valley facts sheet: an introduction to the valley and the literature. (Swansea City Planning Department, 1977. 15p.)

A typescript pamphlet with three maps which seeks to introduce visitors and students to the history of the LSV, the work of reclamation and planning proposals for future land use. A number of former industrial sites are described. A bibliography and addresses of sources of information are included which enable readers to delve further into the subject. Perhaps the greatest value of this pamphlet is its resumé of planning proposals and policy reports, information on which is not so readily available as for the history of the LSV.

RECENT LITERATURE (continued)

NEATH ANTIQUARIAN SOCIETY. Transactions, 1977.

Members of the Neath Antiquarian Society deserve to be congratulated upon the latest volume of their transactions. It has proved deservedly popular and, it is understood, the entire edition was sold out within weeks of publication. Articles cover all aspects of the history of Neath and its valley, but two in particular deserve special mention in an IA newsletter. These are 'Cwmgwrach iron and Resolven coal' and 'Parsons' Folly - Glyncoerrwg Mineral Railway', both written by Harry Green. The author has been able to consult original sources in private hands and is thus able to correct a number of errors in D. Rhys Phillips' well-known work. The latter article is particularly valuable, since it provides the first properly researched account of a fascinating and spectacular tramroad.

PORT TALBOT HISTORICAL SOCIETY. Transactions, vol.3, no.1, 1977.

Among the articles in this collection it is difficult to categorise any as being of specifically IA concern; yet in a district like Afan industry impinges on virtually every facet of local history. There is a re-examination of Dic Penderyn, an account of floods and sea defences, articles on postal history and on the administration and several others. A section of old photographs includes the Pelton wheel at the Copper Miners Tinsplate Works, Cwmavon, and one of the former R.S.B.R. station and locomotive shed at Aberavon. One small criticism is that the use of glossy paper throughout does not make for easy reading, especially in artificial light.

GOWER, vol. XXVIII, 1977

Most readers of this newsletter are surely familiar with the Gower Society's annual offering, and it is therefore superfluous to go into great detail. Their latest volume includes a number of articles of interest in the fields of IA and local industrial history. Bernard Morris, in 'Swansea potters in the early eighteenth century' brings forward documentary evidence for the existence of this trade in Swansea in the middle of the century. In 'Limestone quarrying at Pwlldu' W.N. Jenkins describes the methods used to extract the stone and load it on vessels for Devon and Cornwall. Gerald Gabb gives an account of the construction and opening of the South Wales Railway at Swansea in 'The railway comes to town', and finally there is a useful and interesting article by David Morgan recounting 'The history of Dunvant', including its mines and the tramways that served them.

AQUEDUCT, no.3, 1978

This third issue of the magazine of the Neath and Tennant Canals Preservation Society is a much more business-like piece of work than its predecessors. Besides containing reports on the activities and plans of the society, it includes two articles of interest to local industrial historians, 'The Ivy May' by Alan Fowler, a history of the last canal boat to be built in South Wales; and 'A dynasty of coal-owners at Llansamlet' by P.R.Reynolds, an outline of the mining operations of Chauncy Townsend and his successors at Gwernllwynchwyth.

SWANSEA INDUSTRIAL & MARITIME MUSEUM

Those members who have not yet done so, are strongly recommended to visit Swansea's Industrial and Maritime Museum. The conversion of the warehouse at the South Dock was a bold and imaginative venture and an investment for the future. The museum, although in its early stages, has a more representative collection of exhibits than its dockside counterpart at Cardiff and more to interest the general visitor. Mr John Bunt and his staff are to be congratulated on what they have already achieved and particularly for the valuable services which they provide for visiting school parties. The opening hours are 10.30 a.m. to 5.30 p.m., Mondays to Saturdays, and admission is free.

F.G.C.