



THE TREVITHICK SOCIETY

KOWETHAS TREVITHICK
NEWSLETTER 153 OCTOBER 2011



The Electrical Ore-Finding Survey at Dolcoath: 1905.

CHAIRMAN'S ADDRESS

A unique position

This Society was formed for the preservation of Cornwall's unique industrial archaeology and subsequently to disseminate information about it. It started by bravely collecting a number of remarkable Cornish mining engines and has continued to this day to accumulate important artefacts and records that have either escaped the attention or interest of other authorities. The result is an unparalleled collection of items and material that form the foundation of exhibitions by the National Trust and King Edward Mine.

Some forty years ago the Society decided to operate under the name of Cornwall's leading steam engineer, Richard Trevithick. In so doing it took on the further responsibility of guarding the reputation of one of the world's most significant inventors, one whose designs supplied the engines to power most of the Industrial and all the Transport Revolutions. The Society's commitment was exemplified by its organisation of a service in Truro Cathedral in April 1971 to commemorate the bicentenary of Trevithick's birth.

In spite of its efforts, the name Trevithick and details of his achievements have tended to be usurped by those of James Watt and George Stephenson. Then, in 2001, this Society introduced to the world a conceptual replica of Trevithick's 1801 self-propelled road carriage, surely one of the most significant vehicles that ever existed. A rash of bicentenary celebrations followed with media coverage and Trevithick's name became uncomfortably intermingled with those of the other steam engineers.

And yet Trevithick is still not acknowledged for his contribution to the advance of Mankind, something his countrymen and many engineers throughout the world see as a great injustice. We must remember that the late Frank Trevithick Okuno spent a great part of his life seeking true recognition for his ancestor's achievements.

Now the Trevithick Society is publishing a book, entitled *The Oblivion of Trevithick*, that explains why Capt'n Dick was denied his rightful place in engineering history. No one else has done this, or looked likely to do so. So, in the manner of the Levant and other early engines, the preservation of material from Holman Bros, the Redruth Brewery and many other sites, this Society is again in a unique position as it explains why there have been such blatant miscarriages of justice and who was to blame.

Philip M Hosken

EDITORIAL

I hope to have the next newsletter at the printer before Christmas so please send or email me your contributions by December 15th. Thanks.

Colin French

Copy date for next newsletter: December 15th



Established 1935

LETTERS TO THE EDITOR

Dear Editor,

Could someone kindly give me any information concerning Sara's Foundry, Redbrooke Road, Camborne. And possibly a photo. My grandfather worked there hence my interest

Trevithick membership number R130

With Thanks,

Chris Robinson.

email kriswrobinson@gmail.com

Dear Editor,

I am currently rebuilding one of the three sets of main gates for St Petroc's Parish Church, Padstow and am hoping that someone can help me identify a makers stamp that I have uncovered.

On pages 97/98 of the late John Fergusons book *Forge and Founded in Cornwall* the gates are dated to the 18th Century.

Unfortunately very little of the scroll work was salvageable but the forgings are of very high quality and it would be interesting to put a name and date to this work.

The stamp is on a flat bar and consists of a crown with the initials 'BBH' stamped below it.

Any information would be appreciated.

John Woodward



THE DRAWINGS DONATED BY JOHN DAY

The Cold War era brought work and the best training available at the Royal Ordnance Factory at Nottingham for wannabe mechanical engineers. For the class of 1960 the apprentice supervisor had a sense of history and chose a special

project for four of the lucky lads - they would study a Trevithick stationary engine in depth, then produce a set of drawings from which an eighth scale model could be constructed, the engine preserved in the Science Museum probably serving as their reference. They knew their stuff and this set of drawings, now in Trevithick Society hands, is proof of that.

They duly turned out the normal

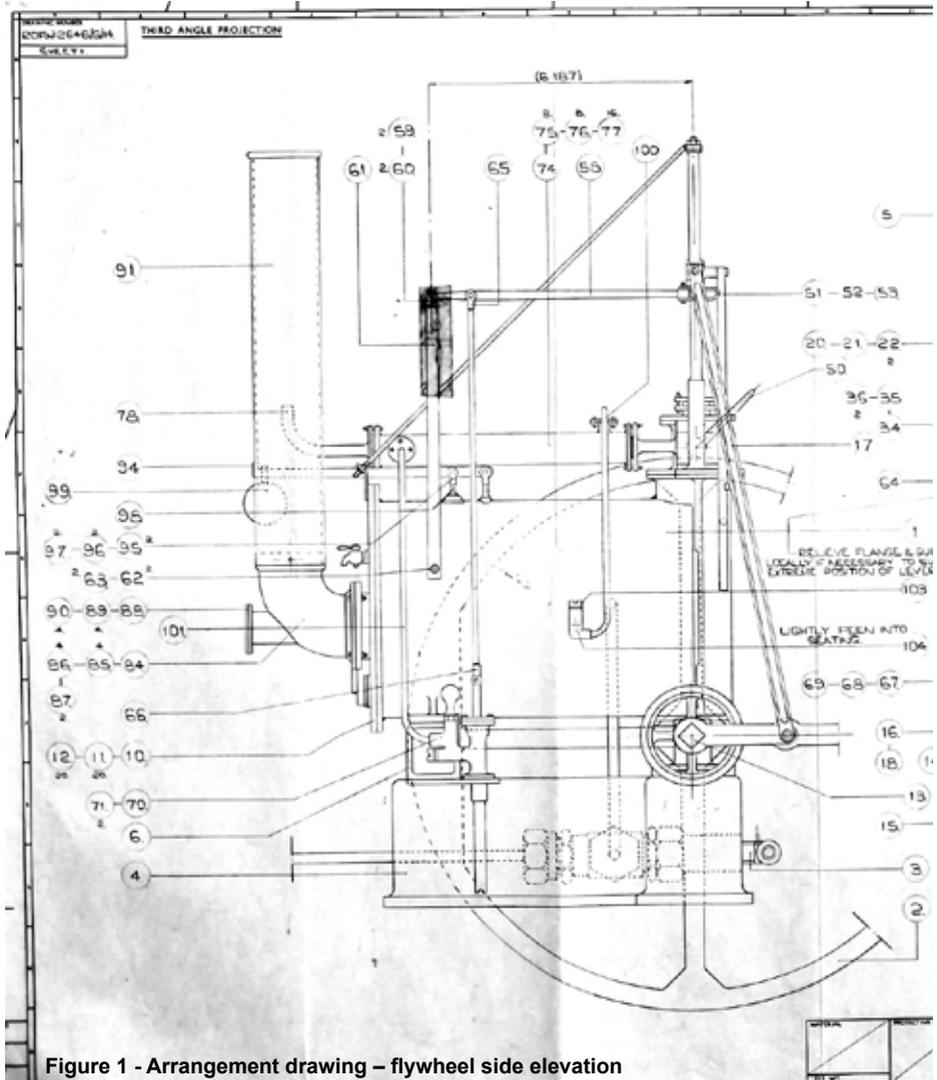


Figure 1 - Arrangement drawing – flywheel side elevation

hardly comparable; the eight fold larger steam capacity of our model will give a realism when under steam seen more usually in scaled-down traction engines. Model engineers working from original drawings are a rare breed but they do exist apparently. These ROF drawings are akin to original drawings so the next step could be appraisal and discussion with model engineers and model kit suppliers.

Roger Harris

PUFFING DEVIL

Following on from Trevithick Day and King Edward Mine Open Day, the next outing for the Puffing Devil was Troon Mid Summer Festival - a small local village show which the Society likes to support each year with the presence of both the engine and tent. The village school was the focal point for the day and the Puffing Devil was steamed on its trailer and located in the playground together with many other stalls and attractions.

The next outing was the West of England Rally held at Stithians Showground. The engine was once more steamed on its trailer and situated just inside the main entrance to the site next door to the Trevithick Society tent. Colin French manned the engine on the Friday, Mark Rivron and Sean Oliver on Saturday and myself on Sunday. The weather left a lot to be desired on the Saturday, with heavy rain during the morning, however, Sunday was totally different with the sun shining all day.

All the outings this summer proved very popular with the public and drew much interest and I am pleased to say that there were no mechanical problems to report.

John Woodward
Custodian

THE ELECTRICAL ORE-FINDING SURVEY AT DOLCOATH: 1905

In the book, *Dolcoath: Queen of Cornish Mines* (The Trevithick Society: 1974), on page 89 T.R. Harris refers to a survey conducted by the Electrical Ore-Finding Company (Ltd) over the northern part of the Dolcoath sett to identify likely copper bearing lodes.

Over the last five years I have been examining the history of the Electrical Ore-Finding Company Limited, as I believe it to be the first formally established geophysical exploration company in the UK, and probably the world (Northern Mine Research Society, British Mining 86, Memoirs 2008).

After extensive experimentation in British Columbia and Alaska, Leo Daft an electrical engineer, born in Birmingham in 1843 and Alfred Williams, born in Oswestry, Shropshire in 1871, set up the Company in London. Both men had previously emigrated to the USA where Daft is credited with the invention of the third rail system for electric trains, and established a successful electrical company. Williams married Daft's daughter Matilda in 1893 in Seattle, and entered into a working partnership with Leo. The Electric Ore-Finder worked by inputting an electric current into the ground through two transmitting electrodes. Two receiving electrodes, basically connected to an earphone were then moved around the likely mineralised area. By subjectively accessing the signature of the received signal the operating could determine the possible location of a lode.

On bringing the Electrical Ore-Finder to England in 1900, Williams sought financial backing, which he got, and the Limited Company was quickly established. Initially, trials were conducted at Cwmystwyth mine in Central Wales, but later surveys were predominantly on mine sites in the Cumbrian and North Pennine ore-fields. A patent for the method was taken out (London Patent Office, number

14,142, 21st June 1902) and trials took place at Ealing, London in February 1903, purely for publicity. These trials were widely reported both home and abroad, but the sceptical elements of the press demanded further proof at a real mine, so a further trial took place at Talacre lead mine, in north Wales in March 1903.

Patents for the equipment were also taken out in the individual colonies of Australia and South Africa. The surveys conducted by Ernest Lidgley at Kalgoorlie, Western Australia, who took a set of equipment there under license, are understood to be the first geophysical surveys in Australia.

However, the Electric Ore-Finder was not accepted by the mining community, despite its usefulness by pinpointing anomalies; It could not for example, determine precisely if the anomaly was indeed a lode, or if it was, what value of ore the lode contained. After a series of mixed results the Ore-Finder was employed for the last time, in the UK at least, on the Dolcoath survey. The

Electrical Ore-Finder Company was put into receivership in November 1905, but the equipment was used until 1907 in both Australia and Spain.

Reference is first made to the Dolcoath survey at the Ordinary General Meeting of the Dolcoath Company in March 1905, when it was proposed to use the Electrical Ore-Finder to search for the location of the north lode. Mr Arthur Thomas the manager indicated that on the present information, further underground development work into this area could not be justified. Referring to the Ore-Finder he stated, 'That they could find the locate lodes he had no doubt, but whether they could determine, within a sufficient margin, that they would pay for working remained to be proved. That is at present the weak point of electrical ore finding. To locate ore bodies with certainty, and at little or no expense, is undoubtedly a big advance on all previous methods, but all ore bodies do not pay to work – and there's the rub. In any case the Electrical Ore Finder Company are prepared to allow the



greater part of their fees to be contingent on the profits arising from any lodes they may locate, and here they give the best possible evidence of good faith. That their reward will exceed their anticipations is sincerely to be hoped.' (Mining Journal (i), 4th March 1905 p232). A month later it was reported that, 'Ore bodies had been located, but a considerable time must elapse before their values can be proved. At present the assumption is that the lodes are copper, that they are of considerable size, and at comparatively shallow depth.' (Mining Journal (i), 1st April 1905 p345). Some exploration was started to prove the identified lode as at the Dolcoath General Meeting in September 1905 the Chairman remarked that, 'Steps had been taken by the manager to cut that lode, if it exists.' (Mining Journal (ii), 2nd September 1905 p263) However, it seems like that no significant new reserves were proved in this direction!

Recently I have found, and been in contact with, relatives of Alfred Williams living in the USA and they have sent to me two photographs that I have identified as being taken in Cornwall. As the Dolcoath survey is, as far as I am aware, the only one the Electrical Ore-Finder Company undertook in Cornwall, both photographs must have been taken at Dolcoath in 1905.

Photograph 1, on front cover, shows the Ore-Finder survey team (Alfred Williams on the left) with Carn Brea in the background. I have recently discussed the photograph with the County Archivist at Truro and he has confirmed the engine house in the mid-ground in front of Carn Brea as Chappel's Shaft, Cooks Kitchen, whilst the headgear to the right of it is Eastern or Valley Shaft, Dolcoath. The photograph was taken just north of the present Coach Depot, a location that corresponds to the extreme northern section of the Dolcoath sett. It is possible that J.C. Burrow took the photograph.

Photograph 2, on page 7, shows the Ore-Finder team posing with their equipment outside a small building, with open country behind. It is possible that

the building was an explosives store, as there appears to be a notice on the door (regulations?). Alfred Williams is on the left. Stamped on the back is J. C. Burrow, F.R.P.S., Scientific & Mining Photographer, Camborne, Cornwall.

I would be delighted if any fellow member of the Trevithick Society had any comments, or observations, to make about the photographs, or indeed could provide any additional information about the Ore-Finder survey at Dolcoath.

Dr Rob Vernon

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HISTORICAL ASSOCIATION LECTURE

Email: rbrtvernon@aol.com
The Historical Association Cornwall Branch invites all members & friends of the Trevithick Society to a free talk:-

Friday 27th January 2012 @ 7.00pm
How Did Science Operate in Victorian Cornwall? by Dr Simon Naylor (University of Exeter in Cornwall) at The Council Chamber, County Hall, Truro.

HOPLEY LECTURE INVITE

*Staffordshire Mineral and Mining Institute
Hopley Lecture*

The Staffordshire MMI extends an invitation to all Trevithick Society members to attend the Annual Hopley Lecture which will be delivered by Charles Devereux, Head of Railway Applications, O & M Directorate, Cross Rail limited. The lecture will be held at 7:30 pm on 19th January 2012, in the Willesley Golf Club, Ashby de la Zouch, Leicestershire and will be followed by a buffet supper. Railways and tunnelling in a difficult environment under London come together in what should be a fascinating lecture.

PETER'S RAILWAY

Whilst the following has little to do with Society business, except the rather tenuous link to high-pressure steam, we know from enquiries and comments that some readers appreciate items like the following, especially as Christmas comes along.



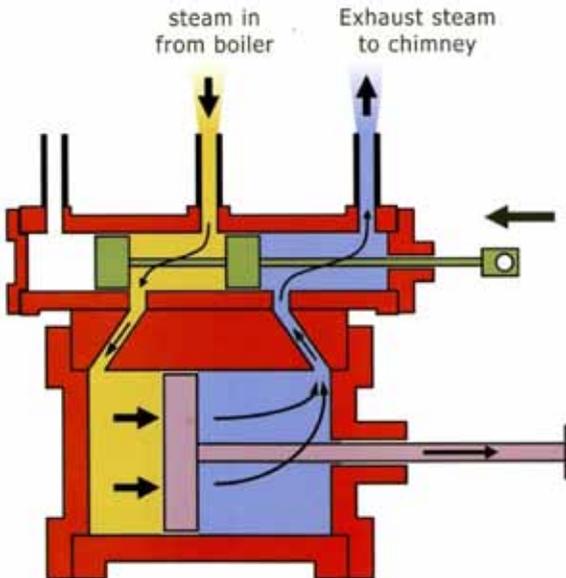
Christopher Vine is a Chartered Engineer with a sense of humour and the ability to tell a good tale of interest to all ages. In recent years he has written and published a series of little books for children and their grandfathers that feature Peter's Railway. The books are hardback with jackets and are beautifully illustrated in water colour by John Wardle. Composed of about 100 pages with a few simple to understand technical drawings, they are unlike Thomas the Tank Engine in that they feature the child (or grandfather) as the hero instead of the locomotive.

Each book retails at £11.99 each plus £1.50 P&P but we recommend you purchase all four books for just £40.00, post free, because before you've finished reading one you'll be looking forward to the other three. Christopher will even sign a dedication if you ask nicely. Buy them

now and you'll have a chance to read them before passing them on as Christmas presents to grandchildren.

For a taste of Peter's Railway go to www.petersrailway.com and enjoy videos that include the great Ruston 9H single cylinder engine and Bekonscot, the most incredible model railway journey you've ever been on.

P.M.H.



LEVANT REPORT

In early June it was noticed that the package boiler that powers the Levant Whim and built by Fulton was beginning to emit dangerous carbon-monoxide fumes into the boiler house. This was unexpected as the boiler had recently passed its annual inspection and pressure test and was only manufactured in 1992. However it was discovered that the refractory lining which on these package units is cast-in-situ at the factory had failed. A quote approaching £14,000 was given to repair the lining, but this was deemed to be uneconomic due to the age of the boiler, so the National Trust were approached to see if they would fund a replacement. Full marks to our custodian who managed to get the area manager committed to the task very quickly and sign off £35,000 for the complete replacement. The installation went very well with numerous Trevithick Society volunteers lending a hand, and a special word of thanks should go to Peter

Badger for the sterling effort that he put in every day of the project, and to Macsalvor Cranes and South West Boiler Services for their expertise.

The new boiler is proving to be very reliable and showing a substantial saving in oil due to its increased efficiency. It is manufactured by CFB Boilers and is a four-pass unit and runs on 28 second oil (kerosine).

Ron Flaxman.

Photo 1. Old Boiler being removed



Photo 2. Macsalvor's Crane



Photo 3. New CFB Boiler being installed



PUBLICATIONS

Many members will, I imagine, be familiar with the name, H G Ordish, who was an inveterate and highly regarded photographer of Cornish mines in the first half of the last century, often in the company of his friend A K Hamilton Jenkin. Yet no collection of his photographs had been published since two small books in the 1960s – that is until now. With the permission of the Ordish family and through the efforts of Tony Clarke, *H G Ordish: The Early Cornish Mining Photographs 1920–1933*, is now available and will, I am sure, attract great interest.

The book runs to 248 pages and contains over 200 photographs, the majority of which have never been published. They cover the whole of Cornwall and subjects range from well-known mines – there is a splendid sequence from Levant – to small trial workings, of which these photographs may be the only surviving record. Tony has contributed a Preface with memories of Geoffrey Ordish and notes on his camera and photography. H G Ordish is available as a large format paperback, cost £16.00, with a limited hardback edition at £25.00.

In Newsletter 151 I reported that Diane Hodnett's book, *The Metal Mines of West Cork*, had won a prestigious Irish book award. In July came the news that it had also won one of the Gorsedd's Holyer An Gof awards for the best non-fiction book in the science and technology category. West Cork has now sold out its original print run; we are considering whether to reprint it.

Graham Thorne

EAST CORNWALL BRANCH VISIT TO MOORCROFT QUARRY

The heavy duty machinery, methods of extraction, high tech use of explosives and various processing works

all found great interest amongst members when they visited Moorcroft Quarry, Plymouth in July.

Members felt very welcome on arrival. As they signed in they were offered refreshments and all gathered together to listen to a safety talk.

Dave Warne then gave a talk about the history and development of Moorcroft Quarry and illustrated this with the use of aerial photographs showing the site's development over the years.

Everybody was issued with hard hats and high visibility jackets and ventured out to discover what they could see around Moorcroft Quarry.

Dave Warne and Anthony Alladay gave expert guidance as the quarry mini bus transported members to various areas of interest.

Anthony Alladay gave a very knowledgeable talk on the principles involved in modern day explosives. This included the use of computerised mapping and highly accurate programmed detonations. This methodology provides maximum effect and minimal environmental impact due to the reduced amount of explosive material needed for the task. It was all highly impressive, especially when you consider this quarry operates in a residential area, with a garden nursery as a neighbour. The sympathetic approach to managing this heavy industry was very evident throughout. For instance, a policy of only blasting at a set time, so to provide a normal routine for residential neighbours.

The array of Buddleias, Teasel and St. John's-wort which adorned the quarry road ways attracted masses of butterflies, these were only briefly admired. Their beauty was soon over-turned by the super-sized quarry lorries. They were something too massive to behold. We all felt minuscule as we looked up at the tyres of one of these monsters. Similarly the massive rock crushers, see photograph held great interest.

Needless to say it is with much gratitude that we offer our thanks to the management of Moorcroft Quarry for permissions and to Dave Warne (seen here



with white hat) and Anthony Alladay (green hat) for their most excellent knowledge and guidance on the day.

The opportunity to visit a working quarry has great relevance as we have a talk by Dr Kayleigh Milden on 21st February 2012, 7.30pm at Liskeard Public Hall, Long Room on *Quarry Memories: an oral*

history of granite and limestone quarries in Cornwall and Devon. Everybody is welcome, so feel free to come along and bring a friend, especially if they know something about quarries.

Cheryl Manley



KING EDWARD MINE

As the newsletter goes to press the visitor season is coming to an end. Cornwall has had a busy season as far as numbers go but no doubt due to the general financial situation the general spend has been conservative. In spite of this King Edward has still shown a small increase in figures which is pleasing.

The volunteers have all had a busy summer and much has been accomplished. The ever invading undergrowth in various parts of the site has had to be cut and burnt and a track has been cut through the gorse to our field on the east side of the pit. This will give us vehicular access and will help unite the two sides of the site. To assist our grounds crew we have now purchased a second hand brushwood cutter which will cut back young gorse, bracken and brambles much quicker. A Wednesday working party has braved the elements for some weeks to re-glaze some of the survey office windows and also strip and paint the walls. Apart from preserving the building this has much improved the initial view the visitor has on arrival at the site. Alan Bingley has put in a valiant effort in lime washing the rear elevation of the couthouse and shortly the ivy will be removed from the roof of the adjacent building, the old blacksmith's shop.

The spiral classifier which has lain in the yard for some time has been dismantled, cleaned and painted and shortly will be on display in the mill to enhance the visitor experience.

NEW MEMBERSHIP SECRETARY

We are very pleased to welcome our new membership secretary, Sheila Saunders, who kindly responded to our appeal for assistance at one of our public film shows. Sheila has now taken up the reins and is acquainting herself with our system. Naturally a small backlog of work has accumulated in the interim so please

bear with us if we have been slow to react to queries.

We hope you will be very happy with us Sheila and will be enthused by the world of industrial archaeology.

As Sheila puts it herself:

“Hello, I am the new Membership Secretary for the Trevithick Society. I have had some very good training from Keith and Pennie!

My name is Sheila Saunders and I am a local primary school secretary married to Peter and live in Camborne. Peter and I previously worked at Compair, Camborne. We have two grown up children and two small grandsons. In our spare time we enjoy walking the coastal path, cycling and sports.”

K.J.T.R.

JOHN DICKINSON

It is with great sadness that I have to report that John Dickinson passed away peacefully on the 20th September. John had been suffering with heart failure for many months and he will be greatly missed, especially by those at Levant, and those that attended the AGM weekend where he and his wife Ann always attended, including this year.

John's knowledge of mining and geology was legendary (as as his beekeeping) and he regularly took groups of visitors around the site at Levant. Our condolences are expressed to Ann and his family.

Ron Flaxman.



SOCIETY MEETINGS

Society Programme

Fri., 14th. Oct., KEM.

The Early History of Teetotalism in Cornwall. By Dr. John Lander.

Sat., 29th. Oct., ECB.

Field trip to Wheal Benny led by Stephen Docksey. Due to very limited parking at the site we will meet at the Engine House Tea Room at Compton Park. (PL17 8EA. SX370 704) to share cars at 10am. On completion of the walk we will meet back up at the tea room for refreshments, if wished, at approx 3.30pm.

Tues. 22nd Nov. ECB.

7.30pm Liskeard Public Hall. *Machinery and Men of Dartmoor, Tin Mines 100 Years Ago.* An illustrated talk by the author Tom Greeves.

Tues.13th Dec. ECB.

7.30pm Liskeard Public Hall. *The History of metal mining in Cornwall.* An illustrated talk by the author Tony Brooks.

Tues. 31st Jan. 2012 ECB.

7.30pm Liskeard Public Hall. *Forder Mill and Tramway-Industrial Activity in the Forder Valley in Saltash.* An illustrated talk by John Parsons, Chairman of Saltash Heritage.

Tuesday 21st Feb. ECB.

7.30pm Liskeard Public Hall-
Quarry Memories: an oral history of granite and limestone quarries in Cornwall and Devon. An illustrated talk by Dr Kayleigh Milden Project Officer of Peninsula Quarry Industry Social History Trust.

March. ECB.

Visit to West Mary Ann Mine at Menheniot. A rare chance to go underground in a local mine. Dates, times will be confirmed on the next programme.

The West Cornwall Branch meets at King Edward Mine (KEM) at 7.30pm.

The East Cornwall Branch (ECB) usually meets at the Public Rooms at Liskeard and commence at 7.30pm.

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The Trevithick Society, a registered charity, is a recognised body of the study of industrial archaeology in Cornwall. Membership is open to all who are interested in the region's great industrial past, whether or not they live in Cornwall. The Society takes its name from one of Britain's foremost inventors and pioneers of the Industrial Revolution, Richard Trevithick, a Cornishman whose name is inseparable from the development of steam power. This newsletter is published quarterly and, together with the annual journal, is distributed free to members. Letters and contributions are always welcome and should be sent direct to the editor.

The views expressed in this newsletter are those of the authors and not necessarily those of the Trevithick Society.

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