



THE TREVITHICK SOCIETY

KOWETHAS TREVITHICK

NEWSLETTER 186 WINTER 2019



Renamed the Lady Evelyn wheel, this 50ft wheel, which worked in Cornwall for 14 years, was returned to the Isle of Man in 2003

Reg. Charity No. 1,159,639

NEW MEMBERS

The Society gives a very warm welcome to the following new members and looks forward to meeting them at any Society events:

Rebecca Herron	Lincolnshire
David Booth	Warrington
Brett Grist	(Cornwall Resources) Callington
John Wakeham	Liskeard
Stephen Tucker	Crows an Wra

DECEASED MEMBERS

The Society is saddened to report the passing of the following members:

Mike Trott	Camborne
Martin Churly	Farnham
Tom Murray	Pendeen

Our condolences to their respective families.

MINING ARTEFACT

A response concerning the wagon protruding from the Gwithian cliffs reported in the last newsletter:

According to *Industrial Railways & Locomotives of South West England*, by Roger Hateley and published by the Industrial Railway Society in 2012, the Gwithian tramway was operated by The Pentewan Dock & Concrete Co. for the extraction of sand. It was replaced by dumper trucks in October 1958.

Graham Thorne

COURTNEY ROWE MBE

I was deeply saddened to hear of Courtney Rowe's passing this summer. Besides the stalwart work that Courtney gave to the Society for many years, I wish to pay tribute to the efforts that he made with the restoration of the Levant Whim ably led by Milton Thomas. Besides his great engineering skills from which we all learned a lot, he meticulously measured every part of the Whim, draughted scale drawings and estimated the weight of a lot of those parts. In conjunction with The Trevithick Society, Courtney then compiled a book entitled *Drawings of the Levant Whim* and this was used by members of the 'Greasy Gang' for very many years. It was of invaluable help to us with the original restoration and repairs and maintenance once the Whim was opened to the public and run on steam.

It was a pleasure to have worked with Courtney in those days and to acknowledge the legacy that he left to ensure that the restoration of the Whim was completed. I know how much he enjoyed demonstrating the Whim for visitors to the site, and passing on his vast knowledge to others. Sadly missed.

Ron Flaxman

Copy date for next newsletter:

March 15th 2020



Established 1935

LETTER TO THE EDITOR

Many thanks to those of you who have sent in responses to the piece on Street Furniture in the last newsletter.

R.M. Heard sent the photograph (top right) of a drain grill cast by A. Gliddon, Marhamchurch Foundry (n.b. hinge to open) which is in Kilkhampton. Another one, same shape and dimensions, slightly concave, but named W. Gregory & Sons, Bude lies south edge of street opposite Lynthorpe. He also reported two circular man-hole covers in the rear entrance drive for Lynthorpe, West Street, and the other further west, in the road, opposite The Old School.

Dear Editor,

What an excellent newsletter arrived with the exceptional Journal. The article about iron street furniture in Truro highlights that 'smart' ain't necessarily effective - the pavement channels of Sara and Visick and others are being callously ripped out, and terrace down-pipes left to dribble across footways. The drain grilles, man-hole covers and other long-enduring products of our erstwhile foundries are an overlooked, over-stepped and very useful legacy - O that Highways was able to stimulate such trade again!

I was reminded of John Ferguson's chapter on such things in his 'Forged and Founded in Cornwall' (Hillside Publications). Please do bombard Highways with demands to conserve, make use of and, most of all, commission ironwork - it seems to me that, where drainage, inspection and sealing are required, it is a most sustainable use of scarce resources. You will find, amongst those who labour on our streets and roads, a great sympathy.

How good would it be to see Sara's at work again - a subsidiary of CORMAC perhaps!

Bert Biscoe

3 Lower Rosewin Row, Truro. TR1 1EN



Dear Editor,

Crosses on drain covers don't necessarily mean they are due for change. More usually they are marked to show they have been cleared of mud and debris by the maintenance gang.



Richard Weeks

THE TITFIELD THUNDERBOLT

Dear Editor,

I was very interested in your note on Titfield Thunderbolt. I had never noticed the Trevithick link before. I can suggest a reason for its appearance in the film. Titfield, which came out in 1953, was inspired by the preservation of the Talylyn Railway by enthusiasts in 1951. It was the first preserved railway venture in the UK and possibly in the world. We know that T.E.B. Clarke, Ealing's scriptwriter visited the Talylyn in 1952. Tom Rolt was acting manager that year and he mentions the visit in his memoir, *Railway Adventure*. Rolt had hoped that the Talylyn might star in the film but that was not to be. Rolt though would have been well aware of Trevithick's place in railway history and I suspect that it was he who planted the seed with Clarke.

Graham Thorne

AUSTRALIA'S LITTLE CORNWALL III: WORTHING MINE

While the magnificent Cornish engine houses preserved on the South Australian mines of Burra, Moonta and Wallaroo, to the north and NW of Adelaide (see Newsletters 182 and 183), are likely to be familiar to many members, what is less well-known is that the oldest engine house in Australia lies within the greater metropolitan area of Adelaide itself. Tucked away in an unspoiled valley just a stone's throw from modern housing development (Fig. 1), it is unlikely that I would have found its location without the expert guidance of Greg Drew. Once again, I am indebted to him and it is from his published description of the site (listed below) that the following material is derived.

The all-enclosed engine house and separate stack mark the site of Worthing Mine and are located in Hallett

Cove, some 10km SSW of downtown Adelaide (Fig. 2). Copper was first discovered here in 1847 and the Worthing Mining Co. was formed in 1849. Several shafts were sunk and, in 1850, a second-hand beam engine was purchased (and a waterwheel ordered) in Cornwall. Although the engine was set to work the following year, the mine was forced to close in 1852 due to a workforce shortage brought about by the Victoria gold rush. It was reopened and the engine restarted in 1856, but by the end of the year the company had moved its operation to the recently purchased Bremer Mine, near Callington (some 50km ESE of Adelaide), and work at the Worthing Mine came to an end.

The engine house, which is built of local limestone, was erected in 1851 for an all-enclosed, 22-inch double-acting rotative engine (6-foot stroke) shipped secondhand from Cornwall in November 1850. Its provenance in Cornwall, however, is unknown. It was set to work in August 1851 and used to both wind and pump (by way of flat rods) from Middle



Fig. 1: All-enclosed house and separate stack of the 22-inch rotative engine at Worthing Mine viewed from the SW.

Fig. 2: Location of the Worthing Mine in South Australia.

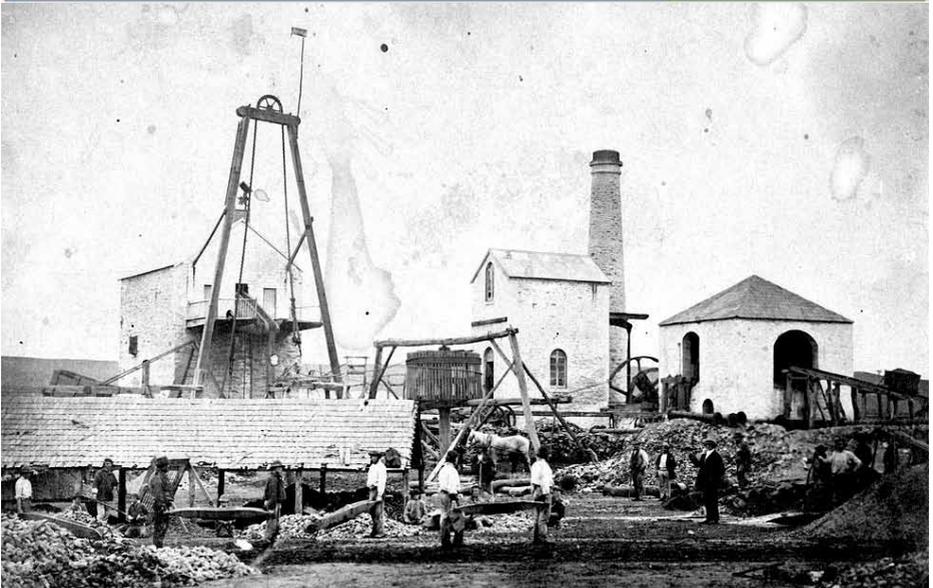


Fig. 3: Worthing 22-inch rotative engine (right) at Bremer Mine in 1875. To the left is a 60-inch pumping engine (10-foot equal beam) by Perran Foundry set to work on Legg's shaft in June 1859. This was originally ordered (with three boilers) for the Stathalbyn Mine, 50km SE of Adelaide, in 1852, but was never erected, and was purchased by the Worthing Mining Co. in 1858 (State Library of South Australia, photo B 7835).

Gully (Engine) shaft about 35m ahead of the house. But its working life at the mine was short and it stood idle from the mine's closure the following year until 1856 when it was briefly restarted. In 1860, it was moved to the company's Bremer Mine where it was re-erected in a regular engine house in 1861. Here it was used for winding (from Legg's shaft), crushing and powering the dressing floors until the mine closed in 1875 (Fig. 3). It was likely purchased at auction (where it was listed as a 26-inch) in 1876 for either the Burra or Wallaroo mine, the later amalgamation of which survived until 1923.

The engine house faces NW with an external mounting block alongside the crankshaft opening (Fig. 4) and the base of the boiler house (for one boiler) along the SW side, part of the wall of which extends the house to the rear (Fig. 5). This is the side nearest the separate stack, which stands on the hillside some 100m to the south and to which a flue can be traced. The interior of the house (which had two floors) preserves openings for

the floor joists and beam support girder, a narrow cylinder platform (which does not extend to the rear wall), an "indoor" pit for the condenser and air pump, and slots for the flywheel and crank; an arrangement very similar to that of the operating whim at Levant Mine.

Drew, G.J. and Connell, J.E., 2012. *Cornish Beam Engines in South Australian Mines*. Special Publication No. 9, Department of Mines and Energy, South Australia, 191 p.

Damian Nance

Fig. 4: Front view of the all-enclosed engine house and separate stack at Worthing Mine, showing masonry mounting block alongside the crankshaft opening. Middle Gully (Engine) shaft lies just out of view to the bottom right.





Fig. 5: Rear view of the all-enclosed engine house at Worthing Mine, showing a portion of the boiler house wall.

TREVITHICK WINE

Following on from the Puffing Devil ale featured in the last newsletter, it is interesting to report the Richard Trevithick Reserve Red which is on sale in Cornish shops. I cannot comment, at the time of writing, on what it tastes like as the bottle will be opened on a few days time on Christmas Day!

It has been produced by the Goen Brenn Winery, Cornish Moorland Wines, Ltd. PL15 7TD.

CNF





Acknowledgements: Text based on Andrew Scarffe description, a trustee of the Laxey and Lonan Heritage Trust

PAINTED LADY

During a visit to the Isle of Man in the late summer, on a day abounding with Painted Lady butterflies, I spent a day in the village of Laxey, famous for its 70ft (21.3m) Great Laxey water wheel named Lady Isabella. The dressing floors of this mine are now the home of the restored 50ft (15.2m) wheel, built for the nearby Snaefell mine. Following the demise of the mine, the wheel was shipped to Cornwall where it worked at Blisland as the Gawns wheel, later being gifted to the Trevithick Society and eventually returning to Laxey in pieces in 2003. Here, it was re-named Lady Evelyn in honour of the mother of one of the principal fund-raisers to restore the wheel.

Both wheels are normally in working order, but neither were on my visit, Lady Isabella undergoing repairs, and Lady Evelyn having been stopped for several weeks to dry out in preparation for repainting.

Built for the Snaefell lead-zinc mine in 1865 by L. & G. Howell of the Hawaeden Iron Works in Flintshire, NE Wales, it was one of two wheels – the other the Ellan Vannin, a 55ft (16.7m) diameter wheel – built by that Company for the East Laxey Mine at Maughold. The whereabouts of the latter wheel has been lost but following the final closure of the Snaefell mine in 1908 the 50ft wheel was bought by English China Clay and re-erected in Cornwall in 1920, where it pumped china clay slurry until 1934.

In 1971, English China Clay presented the wheel to the Trevithick Society who then loaned the wheel to Llywernog Lead Mining Museum near Aberystwyth, Wales. However, the wheel was never re-erected and in 2003, Peter Geddes of the Laxey Mines Research Group contacted the Trevithick Society requesting that the wheel be returned to Laxey. This they agreed, and on 22nd September that year the surviving components of the wheel arrived in Laxey, 138 years after its original construction.

It was agreed that the wheel should be erected as a working exhibit on the ore dressing floor of Laxey mine rather than the remotely located Snaefell mine. A wheelpit, which formerly housed a 43ft wheel, was available once cleared of debris and sufficiently large to house the 50ft wheel. It took a further three years to raise the £100k required to restore and re-erect the wheel.

A number of the cast iron rim segments had to be replaced which was accomplished by Progress Foundry of Stoke on Trent. The axle and hub were refurbished by Booth Kelley Ltd. at Ramsey shipyard, Isle of Man, and the bearings - lost long ago - and hub end plates that secure the spokes, were replaced in the Isle of Man Steam Packet workshops. The timber spokes, buckets and back guard were all remade from locally donated timber.

On 5th February 2005, the axle and hub were mounted over the wheel pit and by 17th July all the spokes and rim segments were in place. Assembling and fitting the buckets took a further five months.

On 19th February 2006, the wheel was ready to receive water from a lade (leat) carrying water from a weir on the Laxey river. In August 2006, a grand opening ceremony took place attracting 3000 members of the public and guests. The Trevithick Society was represented by Peter Joseph, Kingsley Rickard, Brian Earl and Sue Maunder. At the event, Peter Joseph formally handed over ownership of the wheel to the Laxey and Lonan Heritage Trust. In recognition of the Cornish connection, Cornwall's St Piran's flag proudly flies alongside the Manx flag over the site.

Should anyone be visiting the Isle of Man who is a National Trust member, be sure to take your card with you as this gives free access to all museums and castles on the island, including the Laxey Mine trail which is highly recommended. Lady Evelyn is accessible throughout the year in the Valley Gardens, free of charge.

Tim Smith

JAMES WATT 2019

Birmingham Library hosted an exhibition to mark the bicentenary of the death of James Watt (1736-1819). Watt moved to Birmingham in 1774 and entered into partnership with metalware manufacturer Matthew Boulton. Together

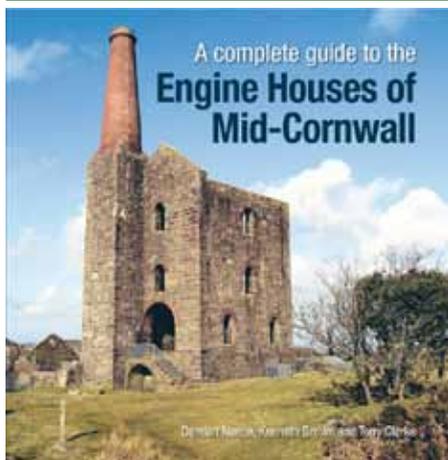


they held a virtual monopoly on steam engine production for the next 25 years. This was enforced through litigation and stifled innovation in some quarters, however, in Cornwall it had the opposite effect and led to much research and development and a seismic leap forward in technology to high pressure steam within weeks of Watt's patent expiring.

Nevertheless, the B. & W. steam engine business was highly successful and Watt became a wealthy man. His interests were widespread and he invented a diverse range of mechanical apparatus including the first reliable document copier.



NEW BOOK



A complete guide to the Engine Houses of Mid-Cornwall by Damian Nance, Kenneth Brown and Tony Clarke.

Nowhere in the world has metal mining been of greater importance than it has been in Cornwall, and it is in recognition of this extraordinary heritage and the global influence of the pioneering technology developed here that Cornwall's mining heritage was named a UNESCO World Heritage Site in 2006.

During the 19th century, Cornwall produced most of the world's copper and tin, as well as substantial quantities of lead, silver, arsenic, tungsten, zinc, iron and uranium. What made this unparalleled productivity possible was the development of the Cornish beam engine, a reciprocating steam engine capable of driving pumps that could keep the ever-deepening mines free of water. Although few of these great engines survive, many of the buildings that housed them remain. This book introduces these remarkable engine houses by providing an illustrated guide to those in Mid-Cornwall using contemporary and archival photographs together with brief descriptions and interpretations of each.

ISBN 9781911038610, 172 pages. Full colour. Price £18.00. Lightmoor Press.

LEVANT

Levant is now closed to the public for the winter season and is not due to reopen until the 1st of March 2020.

The commemoration of the 100th anniversary of the Man-Engine Disaster took place in the Miners' dry on October 20th. This was very well organised and followed in the evening by a Memorial Service at the Miner's Chapel in St. Just. Congratulations to Delia Webb and everyone else who were involved with the organisation of events.

In previous years the winter maintenance at Levant was always carried out by the volunteers together with the help and advice of John Treloar who had 30 years of experience with the Whim. This has been handed over to John Woodward or other contractors. At the time of writing the stairs up to Middle Chamber have been removed together with the Engine Regulator Valve and the Gab-gear and eccentrics that operate the valves.

The 'Greasy Gang' originally formed in 1984, to restore the Levant Whim to working order, no longer exists. Once Milton Thomas could no longer come to Levant it was my pleasure to carry on with Milton's legacy and ensure that the team spirit with the volunteers endured. The demise of the 'Greasy Gang' is a sad time for Levant and brings to an end a long and worthwhile effort by volunteers that ensured the smooth and safe running of Levant. Thank you to all of those that were involved - it was greatly appreciated.

Ron Flaxman

HIP HIP HOORAY!

Forgive the jollity but I am so pleased to be progressing well having undergone a total right hip replacement procedure. Thanks to the many members who have sent e-mails, cards or telephoned and to the number of local ones who have also offered assistance in shopping, transport or in keeping the Society business up and running during the post operative period. There were only three of us in the ward and we had all had the same the same procedure. The gentleman in the bed opposite me had a bad reaction to the opioid analgesics administered to us and sat in his bed constantly telling me I had a big green tea pot on my head. He was taken away to another ward. I wish him well.

Two weeks after the operation I was to report to Redruth Hospital Dressing Clinic where the operation site was assessed. The nurse removed the dressing and went into raptures over my operation scar. Apparently she had never seen such a neat wound closure. I later learnt that she was so impressed that a record was duly made in my patient notes. In my case beauty is obviously just skin deep!

Do keep messages, requests, queries etc. coming in as Wheal Wrisket and the Chatline are operating even if on crutches!

Kingsley Rickard



LEVANT BOILER HOUSE MAINTENANCE



During the winter of 2017-18, a considerable amount of work was carried out to the small diameter steam pipes, condensate returns and mixing tank etc.

Over the years a large amount of alterations have been done to most of the pipe work. Consequently, the mixing and preheating tank was no longer working satisfactorily which resulted in water not being heated anywhere near the required 80 degrees. This, in turn, meant that the water treatment was not emulsifying into the boiler feed water, causing over dosing and congealing in the pipe work and feed pump.

As a result of that winter's work, the monthly average fuel consumption for the engine dropped by 33% and the total site energy consumption dropped by 26%.

The work on the attached reports was undertaken by Mike Penberthy and myself.

John Woodward



High Pressure Strainer and Water Separator

Removed strainer and adjoining water separator, refitted strainer angled just above the horizontal so it will drain. Re-fitted water separator using new gasket and high tensile nuts and bolts to flange.

High Pressure Water Separator Condensate Return

All ½ inch mild steel pipe has been replaced with stainless steel. New condensate bowl fitted, site glass repositioned and returned pipes lagged with Rockwool steam pipe insulation.



Mixing Tank Return Pipes

All mild steel pipes have been replaced with stainless steel. Return pipe correctly routed to both mixing tank inlets. Bypass system installed to the common drain. Pipes lagged with Rockwool steam pipe insulation.



Boiler Water Feed Pump

The pump has been stripped and cleaned, mild steel pipes replaced with stainless steel, lagged, a second gate valve installed and pump moved to reduce water travel distance to about 5ft.



PUBLICATIONS

Levant Mine: An Anthology duly appeared in early October and has attracted a good deal of interest and favourable comment. It is available locally in West Cornwall, from Geevor shop, Tormark and specialist sellers, Moore Mining Books and Camden Miniature Steam, for whose regular support the Society is most grateful. We have had significant enquiries for the limited number of hardback copies so prospective purchasers should not delay.

I should like to apologise for the fact that the proposed launch on 9th November, mentioned in the last issue, did not take place. Our Vice-chairman and myself were both firmly in the hands of the medical profession at that time and it proved impossible to make the necessary arrangements.

Graham Thorne

BOOK REVIEW

Situated on the B3212, south-west of Postbridge is the intriguing industrial site of Powdermills. A row of cottages, a chimney and some ruined buildings mark the location where gunpowder was produced for around 50 years from 1844. A significant work force was employed here, many of whom lived in the cottages. The site has been surveyed in detail, notably by Andrew Pye in 1989.

A new study has now appeared, *Powdermills: The story of the Dartmoor Gunpowder factory* by Drew Campbell. His book concentrates on the people of Powdermills, the workers, owners, shareholders who were all part of the enterprise. We read of the project instigator, George Freat, whose name is better known from his son's biscuit enterprise, and in considerable detail of the families who worked there. There are also interesting chapters on the way water was used across the site and a helpful tour of the site.

Powdermills comes from Blackingstone Publishing, who also publish the Dartmoor Magazine, at £10.00. (ISBN 9780995498617) and can be recommended as throwing new light on the history of this remarkable place.

Graham Thorne

2020 AGM

The AGM weekend will be based in the Plymouth area on Friday 1st, Saturday 2nd and Sunday 3rd May.

Full details will appear in the next newsletter.

CORNISH INSTITUTE OF ENGINEERS

Thursday 9th April 2020, at 6pm

The UNEXMIN Project: Robot Submersibles Investigate Geology and Industrial Archaeology in Ecton Mine, Staffordshire.

Location: Chapel Lecture Theatre, Tremough Campus, Penryn. TR10 9FE.

Submersibles developed in the EU Horizon 2020 UNEXMIN project have been used in the Ecton copper mine, flooded since 1858. All investigations were by imaging and non-contact instruments.

Members are invited to attend the above free lecture. The Cornish Institute of Engineers AGM will precede this talk.

<https://www.iom3.org/cornish-institute-engineers>

SOCIETY MEETINGS PROGRAMME

KEM: 7.30 pm start at King Edward Mine, Tron, Camborne TR14 9DP.

Liskeard: 7.30 pm start at The Long Room, Liskeard Public Hall PL14 6BW.

Friday 10th January 2020 (KEM)

Godolphin Mining.
By Steven Polglaze

Monday 13th January 2020 (Liskeard)

Mine Buildings of Cornwall.
By Kingsley Rickard

Monday 10th February (Liskeard)

In the Footsteps of Ian Fleming's Diamond Smugglers.
By Derek Stonley

Friday 14th February (KEM)

National Explosives Works: Voices from the past.
By Jean Charman

Friday 13th March (KEM)

Witchcraft and Folk Magic in Cornwall.
By Jason Semmens

Friday 17th April (KEM)

Battle Beneath the Trenches.
By Robert Johns

May: 1st-3rd AGM Weekend

Friday 12th June (KEM)

The Date and Significance of the Antler Pick found on the Carnon Valley Tin Ground near Truro.
By Simon Timberlake

Non-members are welcome to attend.
Non-members £2.00 please.

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For up-to-date news check:

<http://www.trevithick-society.org.uk>

<https://www.facebook.com/trevithick.society/>

MEMBERS' BENEFITS

Trevithick Society members are entitled to free entry (on production of the membership card) to the following attractions:

- King Edward Mine
- Cornish Engines at Pool (East Pool Mine and Michell's Whim)
- Levant
- Geevor Museum
- Poldark – free entry to site and reduced fee for underground mine tour

Also:

- 10% off book purchases at Tormark.
- 10% off purchases at KEM shop.

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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.

ANNUAL SUBSCRIPTIONS:

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Corporate members	£35.00

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