



THE TREVITHICK SOCIETY

KOWETHAS TREVITHICK

NEWSLETTER 172 SUMMER 2016



A search on Google found this photograph showing the Puffing Devil which was an exhibit in the *Lego Bricks in Motion* exhibition at the Milestones Living History Museum in Basingstoke in 2015.

CHAIRMAN'S ADDRESS



The Trevithick Society has a new Chairman, Brian Jones, who was elected at the AGM.

At the Council Meeting in November, Council wholeheartedly agreed that the new Chairman should be Brian Jones, who, despite being a newcomer to the Society, has impressed us by his deep understanding of the issues being discussed, his forthright, down to earth, sensible views, and his commitment to working collaboratively with Council.

Brian is a local boy directly descended from two prominent Penzance families. He grew up and was schooled in west Cornwall, firstly at Sennen then Penzance and finally at (what was then) Camborne Technical College.

Pursuing a career at sea he spent most of the next 14 years away from the Duchy. On returning home he established an Electrical Contracting business which he has run for the last 25 years in partnership with his wife Jane.

He is a licentiate of the City and Guilds of London Institute and a member of the Institute of Engineering Technology.

Brian has a keen interest in Industrial Archaeology and Industrial Heritage in general and, in particular, has an interest in large static steam plant. He lives in Penzance with his wife and two children.

EDITORIAL

Normally the front cover photograph relates to an article within the Newsletter itself. This time the cover photograph was chosen because it is bright and cheery and depicts a Lego Puffing Devil which was on show at an event that passed largely without notice and which tantalisingly has nothing online to explain what happened.

I would like to thank the various contributors for the timely provision of text for this Newsletter. Despite that, there has been an unforeseen delay of several weeks due to the illness of one of the contributors.

Colin French
Copy date for next newsletter: September 5th 2016



LAWRENCE P. S. PIPER 1931-2016



The Society has been saddened to hear of the death of Lawrie Piper, whose history of the Camborne School of Mines we published in 2013. He had been ill for some time.

Lawrie grew up in the textile area of Gloucestershire and it was here, in Stroud, that he began his career in the cloth industry. He studied at the local Technical College to gain management qualifications. This led in 1961 to his appointment as Head of the Textiles Department at the Derby College of Education. Here he also found time to gain a Master's Degree in Education at the University of Leicester. He arrived in Cornwall in 1967 to take up the post as Vice-Principal of Cornwall Technical College and some twelve years later became Principal of what is now Cornwall College.

After retirement, in 1991, he began to write his history of the Camborne School of Mines and its various constituents, in collaboration with the CSM staff. *Camborne School of Mines: A History of Mining Education in Cornwall* is the definitive history which has excited interest and sales around the world. It was a privilege for the Society to bring it to publication. Lawrie was also an active member of the local Health Authority and, as an enthusiastic sailor, was a member of the Royal Cornwall Yacht Club. The Society extends its condolences to the Piper family for their loss.

Graham Thorne

E. W. A. EDMONDS



The Council are sorry to announce the passing of our past President Eric Edmonds. An electrical engineer by profession, having started back in the days of the Cornwall Electric Power Company, he was a stalwart of the Society for many years, naturally specialising in the electrical history of Cornwall. He also had a great interest in internal combustion engines and Cornish Industrial Archaeology in general. This is reflected in some of his papers that were published in the Society journal, including *Alluvial dredging in Cornwall* (2003), *the Lizard goes electric* (2004) and *Tresavean Mine, Lanner* (2005).

As a long standing member of Council he had a deep knowledge of every aspect of Society business and proved to be a very robust President during one of the key periods in the Society's history - the project to build the Puffing Devil replica. The photograph above shows him accepting an award, at the Cornish Gorsedd ceremony, in recognition of that project.

Eric kept very comprehensive records, some of which have been left to the Society. His passion outside of industrial history was Cornish rugby.

Our condolences go to Rosemary and family.

CORNISH MINING IN EASTERN PENNSYLVANIA II: THE PERKIOMEN MINES

At the northern end of the grounds of the John James Audubon Center at Mill Grove, the first home of America's well-known artist-ornithologist in Audubon (formerly Shannonville), Pennsylvania, stands a solitary Cornish stack (Fig. 1). The stack is the sole surviving structure of the Perkiomen mines, a group of small copper, lead and zinc mines on the east bank of Perkiomen Creek, a tributary of the Schuylkill River northwest of Philadelphia (Fig. 2). Hosted in red shales and arkosic sandstones of the Newark Basin's Upper Triassic Stockton Formation, the mines were most productive in the 1850s when they were worked by Cornish miners employing Cornish pumping technology.

Although knowledge of the presence of lead ore on the Mill Grove

property dates to the 18th century – there is a tradition that many a Redcoat was laid low by Mill Grove lead during the American War of Independence – the first records of mining activity date to 1803 when the deposits were shown to young Audubon. Audubon conveyed this information to his father, Captain Jean Audubon, who sent a fellow Frenchman, Francis Dacosta, to manage the mine. In 1808, Dacosta established the Perkiomen Mining Company, and by 1809, the mine was 13 fathoms deep and an adit had been driven in from the nearby creek of Mill Run. A considerable quantity of lead ore and a little copper was reportedly raised, but little of this ore was sold and, in 1810, the venture was abandoned.

In 1813, the property was purchased for its lead deposits by Samuel Wetherill Jr., as a means of supplementing the imported pig lead used to produce white lead at his paint works in Philadelphia, the



Figure 1: Solitary Cornish stack in the grounds of the John James Audubon Center at Mill Grove, in Audubon, Pennsylvania. The stack is that of the Ecton mine's 20½-inch, high-pressure pumping engine. Ecton shaft lies off-view to the right (east).

Perkiomen Mines

Audubon, Pennsylvania



Figure 2: Location of the Perkiomen mines in Audubon, Pennsylvania, northwest of Philadelphia.

supply of which had been interrupted by the War of 1812. In addition to developing the property, which became known as the Wetherill mine, Wetherill used existing mills for mining purposes and was the first to employ Cornish miners. In 1820, for example, over 100 tons of lead ore were raised by immigrant miners, most of whom were Cornish. Wetherill also erected a smelting works (Fig. 3) in anticipation of processing the ore on-site and, in an 1826 presentation to the Academy of Natural Sciences, described the mine as being 27 fathoms deep with three levels, and the ore as yielding 75% lead with traces of silver. However, the ore proved difficult to smelt economically and, soon after this, the Wetherill mine was abandoned.

Renewed interest, this time for copper, occurred in or about 1829 when two Cornish miners, John and Robert Rowe, sank shafts on the property. But while they found copper ore of good quality, they failed to find it in sufficient quantity.

Over the next two decades, the mines changed hands several times, but

an intermittent record of mining continued. In 1835, for example, copper from the Perkiomen mine was alloyed with zinc from Franklin, New Jersey, to produce the first brass weights for the newly created Office of Standard Weights and Measures.

1847, however, saw a significant renewal of activity with the opening of two mines on either side of Mine Run, about a kilometre north of the Wetherill mine. On the north bank of the creek, the Perkiomen (or New Perkiomen) mine was started by the Perkiomen Mining Association, while on high ground half a kilometre to the southwest, the Ecton mine was opened by the Ecton Consolidated Mining Company (Fig. 2). Both mines produced copper and lead, although they were chiefly thought of as copper mines. Rich zinc ore was also found, but in the absence of a means of smelting it, the ore was never produced.

By 1848, in which year the two mines were purchased by a New York firm of metal brokers, both companies had imported copper miners from Cornwall and had erected rows of frame houses for their

use. Although no trace of these buildings survives, F. Harold Evans suggests in his 1980 book, *Historical Sketches of Copper and Lead Mining in Montgomery County, Pennsylvania*, that they likely comprised "the most complete copy of a Cornish mining village ever built in the United States." Both companies had also erected pumping engines to keep the mines free of water. A 50-inch Cornish engine of 100 horse power capable of an annual load of 65 million foot pounds and valued at \$10,200 was erected at the Perkiomen mine, and a 20-inch high-pressure engine capable of an annual load of 18 million foot pounds and valued at \$9000 was erected at the Ecton mine (Fig. 4). Both mines also possessed whim engines and crushers.

From the view of the mines shown in Figure 4, the engine on the Perkiomen shaft (right) was a Cornish pumping engine. However, little is known of its provenance, although it is said to have been imported and was quite possibly built in Cornwall. The nature of the Ecton engine (left), where the surviving stack now stands (see Fig. 1), is uncertain and existing photographs of the engine house are not particularly informative. But it was likely to have been an all-enclosed, entablature rotative engine that pumped from nearby Ecton shaft by way of a short run of flat

rods. The building, to the northwest corner of which the stack was originally attached (Fig. 5) is not that of the engine, the house of which (Fig. 6) can be seen through the trees to the right. Neither building survives but masonry loadings for a balance bob can still be seen on the west side the shaft crater (Fig. 7), to the kingpost of which the flat rods would have been attached. The pit for the balance box can also be discerned between the shaft and the site of the engine house, and a depression on the far side of the building to which the stack was originally attached (as seen in Fig. 5) may mark the site of the engine's single boiler.

In 1849, the new owners sent a young mining engineer by the name of Charles M. Wheatley to Shannonville (now Audubon) to act as mine manager. Wheatley had previously served successfully as manager of the Bristol copper mine near Hartford, Connecticut, which was owned by the same New York firm, and it was their hope that he might likewise put the two Shannonville mines on a profitable footing. This he attempted to do and, when the Perkiomen shaft had been sunk to 40 fathoms and the Ecton shaft had reached a depth of 55 fathoms, a new level 1800 feet in length was driven between the two, thus connecting the two



Figure 3: Water colour copy by Charles Wetherill (from 1835) of a painting of the Mill Grove property in the 1820s attributed to Thomas Birch. The view shows the mills (left), the main house (on the skyline) and the smelter (right) erected by Samuel Wetherill (Charles Wetherill's grandfather).

Figure 4: Painting of the Perkiomen Consolidated Mines (looking north) from an engraving dated 1851, showing the 50-inch Cornish pumping engine on Perkiomen shaft (right) and the 20½-inch high-pressure engine on Ecton shaft (left). The headgear (centre) is that of Whim shaft.



mines. An adit was also driven into the Ecton shaft, the portal of which can still be seen close to the mouth of Mine Run.

As a further economy, it was decided to consolidate the two mines into a single enterprise and, on February 15, 1851, a charter was granted. The Perkiomen Consolidated Mining Company

"for the purpose of mining, selling and smelting copper and lead ores, and erecting the necessary buildings and machinery for such purposes, and as such, shall have power to lease or purchase the Perkiomen and Ecton mines, and certain other mines and mining lands, situated in the counties of Montgomery and Chester."



Figure 5: Undated 19th century photograph of the buildings surrounding Ecton shaft (just off-view to the right). The engine house is visible behind the trees to the right. The boiler house likely lay behind the building to which the stack is attached, the function of which is uncertain.

Figure 6: Photograph of the engine house (with large brick-arched opening) and separate stack (which survives) at the Ecton mine taken from the mouth of Ecton shaft (foreground) sometime prior to 1905.



For the purchase of the real estate, mines, machinery and other property, the new company paid the Perkiomen Mining Association \$109,000 and the Ecton Consolidated Mining Company \$111,000.

The new company carried out extensive mining operations and the same year Wheatley is quoted as saying that "all persons acquainted with mining operations that have examined the workings at Perkiomen have expressed astonishment at the regularity, size, strength and productiveness of the veins, and the high percentage of copper ore obtained from them. The Perkiomen is the first regular

copper lode opened in this country, and bears a true resemblance to the Cornish system." At the end of April 1851, Cornishman Captain Joseph Vivian, who was associated with the new company as an expert, submitted a favourable report, and between August 1851 and April 1852, the new mine raised 525 tons of copper ore (which was sold to the Baltimore Copper Smelting Company for \$30,575) and was employing about 200 men, most of whom worked on a tribute system like that used in Cornwall, under which groups of miners would agree to extend a level or stope a given distance for a certain sum.

The principal ores were chalcopyrite and, to a lesser extent, malachite, but were mixed with zinc blende (sphalerite)

that was mechanically separated as much as possible on site, but which made treatment of the ore difficult. In addition, the mine's operation was necessarily expensive because of its location, the ore having to be hauled to the Schuylkill canal and sent on to the nearest smelters in New York and Baltimore by way of Philadelphia.

In 1852, Wheatley resigned his position with the consolidated venture and started work on the Wheatley mines, a group of small silver-lead mines several miles to the west, near Phoenixville (see Fig. 2), that he had personally opened up

Figure 7: Masonry loadings (left) and balance box pit (centre) for the balance bob at the mouth of the Ecton shaft (just off-view to the left). The engine house was set back from the top of the bank to the right (west).



a year or two earlier (see Newsletter 171). With his departure, the mine's productivity declined, and in 1853 only 143 tons of ore were raised, which sold for \$9989. The Perkiomen Consolidated Mining Company officially closed in 1854, but the mine continued to be operated on a co-operative basis and, in 1858, there is a record of 151 tons of copper ore being shipped to England and Baltimore and 60 tons of lead ore being sent to the Bay View Smelting Works on New York's Staten Island. However, the operation was clearly unprofitable and, unable to raise enough ore to meet running costs, the mine was finally closed later the same year. At the time of the mine's closure, the Perkiomen shaft was over 80 fathoms (146 metres) deep and the Ecton shaft had reached a depth of over 100 fathoms (183 metres).

Renewed interest in the two mines accompanied the increased demand for lead with the outbreak of the American Civil War. In 1863, a prospectus was issued by the Perkiomen Mining Company in order to raise capital to reopen the mine. After selling some stock, an inauguration was held in November 1863, when the machinery is said to have been put in motion and a small amount of previously mined ore brought to the surface. However,

the venture was soon abandoned, although in 1865, during the reworking of his silver-lead mines southwest of Phoenixville, the burrows were briefly worked at a profit by Charles Wheatley in partnership with Captain Cocking from Cornwall.

The Ecton mine was briefly reopened in 1901 when as many as 30 men were employed in the extraction of lead and zinc ore. The final episode of activity occurred during the Second World War, when the U.S. government surveyed the mines because of the need for copper. But no work was done and there has been no interest in the mines since that time.

Damian Nance



AGM WEEKEND 13TH - 15TH MAY 2016

For 2016, the AGM weekend moved to Mid Cornwall with an emphasis on china clay and the ports serving that industry. There was also the bonus of a Cornish engine which has been little seen of late.

We began on Friday 13th May at Dairyland, near Summercourt. I confess that, on arrival, some of us may have had our doubts, but these proved groundless. As well as the dairy farming, which forms the centrepiece of the tourist attraction, the site has a large and comprehensive display of rural artefacts and bygones. These proved to be fascinating and to repay detailed examination. For many of the party it was the first chance to see the Cobbler's Shop from Carharrack which was saved by the Society and found a new home at Dairyland. On Friday evening some 30 members gathered at Wheal Martyn Museum to hear a lecture by Ivor Bowditch on the China Clay Industry past and present. This was a masterly summary of the industry from the earliest

days to now, backed by a set of excellent illustrations, and much appreciated by all. From a promotional film made by Imerys, which offered an insight into the industry in the twenty-first century, we learned that, what we know as the St Austell china clay area, is in fact the "Hydrous Kaolin Platform". The veracity of the film was somewhat undermined by the revelation from an audience member that the spinning globe logo in the film's titles was rotating in the wrong direction.

Saturday took us to the coast, specifically to the lost clay port of Pentewan. Again we were very fortunate with our guide. Robert Evans lives in the village, knows its history in detail and has published several excellent histories and guides. His two hour, comprehensive tour of the village and harbour was a revelation. After taking lunch in the Ship Inn at Pentewan, the party reassembled for the afternoon at Charlestown. This preceded Pentewan as a harbour specifically for the clay industry, but, while Pentewan is now something of a backwater, often missed by drivers hurrying from St Austell to Heligan Gardens or Mevagissey, Charlestown is busy with visitors who come to its Shipwreck Centre,





its sailing ships based in the harbour and the quays which are regularly used for filming. Somehow, as a result, there is an artificiality about Charlestown, which made our visit something of a disappointment. The absence of a Charlestown equivalent of Robert Evans, with detailed local knowledge and anecdotes, contributed to this.

The AGM and Annual Dinner took place at the Victoria Inn, Roche. Some 30 members were in attendance. All were delighted to see our President on excellent form following his recent surgery. He conducted the AGM with his customary aplomb. A number of new Trustees were elected and the hope expressed that the new Council would now take the Society forward. Tribute was paid to retiring Chairman, Philip Hosken, who was unable to be present at the AGM for the first time in many years. Dinner followed with the usual opportunity for reminiscences and catching up with old friends.

Sunday was for many the high point of the weekend. Delicate negotiations by Kingsley Rickard and Ivor Bowditch had resulted in the 50" Cornish engine

at Parkandillick being open to Society members for the first time in several years. By the time the writer arrived, the 1852 Copperhouse Foundry engine was



already in work on compressed air making 4-5 strokes per minute. A nascent 'Greasy Gang' had formed and was carefully nursing the engine as it has not worked for some time. It is to be hoped that this might be a portent for the future, with the engine open and operating more frequently, and the Society undertaking some regular and needed maintenance and TLC. All present were clearly delighted with this most welcome ending to the AGM Weekend.

As a footnote, a small party of members visited the Lappa Valley Railway on the Sunday afternoon. The owner of this 15" gauge line on part of the track bed of the former GWR Perranporth branch had intimated that it might be possible for us to visit the great 100" East Wheal Rose engine house, which stands on his property at the far terminus of the line. Access is not currently available to the public but we were able to go inside and look in detail at this huge structure. The owner would welcome an organised visit by a larger party from the Society and this could make an attractive venue on a summer evening in the future. One to think about.

Graham Thorne

SIGNIFICANT LEAD MINES IN THE TAVY-TAMAR-TIDDY CATCHMENT, EAST CORNWALL AND WEST DEVON

As part of a research project (SEDiLINK) at Plymouth University founded through the European Union (EU) Horizon 2020, using lead isotopes to investigate sources of lead held in river estuary sediments, data on historic lead production within the catchment was required.

Investigation of mine waste accumulations in estuarine sediment profiles has the potential to provide evidence of otherwise undocumented periods of mining within the catchment areas, and in South West England, and it has been investigated by Camborne

School of Mines (CSM) and Plymouth University. Data are required for effective decision making in the management of legacy pollution to achieve the goals of the EU Water Framework Directive and Mining Waste Directive.

Care must be taken in interpretation of the results, as in cases mine waste input may have occurred subsequent to periods of actual mining. An example of this is in Polwheveral Creek (Constantine), where peak metal concentrations, identified by CSM, seems to post date the period of active mining. At the head of this creek there are remains of what is thought to be a tailings dam, constructed to prevent input of mine waste into the Helford River oyster beds. The breaching of this dam long after the cessation of active mining in the area upstream appears to have resulted in a surge of mine waste into the Helford River.

The current research required the use of lead production figures for mines in the Tamar catchment area. The figures available in published sources are, as may be expected, somewhat confusing, and there is much additional data in unpublished sources consulted by the author. The following summary of the data obtained is presented as it is probably the most complete summary on the subject so far obtained, but no doubt can be further updated if more sources come to light.

"Lead ore" is under modern terminology "concentrate". For lead mines in Devon and Cornwall, the tonnage of crude ore mined can be estimated at 10x to 20x the recorded production of lead ore; thus the 23085 tons of lead ore from South Hooe would entail the mining of some 200,000 to 500,000 tons of crude ore. Of the balance of 176,000 tons to 480,000 tons, coarse material would have been placed on surface tips or back filled underground, some used for building purposes, while finer material (perhaps 50% of the total) would largely have been discharged into the adjoining river. From South Tamar and East Tamar Mines, where the lode material was rich in fluorspar,

substantial quantities of that mineral were recovered for metallurgical use. In addition waste material would include substantial quantities of barren development rock.

Units of production were recorded in tons of 20 cwt or 21 cwt, but it is often not specified which in the original sources.

SOUTH HOOE MINE

Under names: Tamar Silver-Lead & Tamar Consols (includes some output from North Hooe Mine estimated at say 10% of the total).

1811-1821: 2932 tons ore.

source: Cornwall Record Office ME2796.

1836-1842: 3030 tons ore.

source: Agent's reports published in the Mining Journal.

1843-1860: 15121 tons ore.

source: Cornwall Records Office Stannary Returns STA517-518.

1861-1863: 2002 tons ore.

source: Mineral Statistics, Memoirs of the Geological Survey.

Figures under name Tamar etc. for 1870s-1880s refer to Buttspill, not this mine.

Total 23085 tons lead ore estimated at 62% Pb 14300 tons lead.

SOUTH TAMAR CONSOLS or BIRCH AND CLEAVE MINE

1812-1821: 11426 tons lead ore estimated to contain 6900 tons lead.

source: Cornwall Record Office ME2796.

1849-1860: 7117 tons lead ore estimated to contain 4542 tons lead.

source: Mineral Statistics, Memoirs of the Geological Survey.

total: 18543 tons lead ore estimated to contain 11442 tons lead.

Substantial unrecorded production prior to 1812, perhaps 10,000 tons.

EAST TAMAR CONSOLS MINE

1846-1861: 2581 tons lead ore estimated to contain 1745 tons lead.

source: Mineral Statistics, Memoirs of the Geological Survey.

From extent of ground shown on old plans prior to 1845, estimate of perhaps another 10,000 tons produced prior to that date.

CRELAKE MINE, Tavistock

1860-1866: 1168 tons lead ore estimated to contain 852 tons lead.

WHEAL BETSY, Mary Tavy

1817-1837 returns about £180,000 (Friendship & Betsy Mine Accounts, Plymouth Record Office).

Estmate about 18,000 tons lead ore containing 10,000 tons lead.

1837-1844 estimate 3500 tons lead metal (Mining Journal reports).

1845-1877 1182 tons lead metal (Mineral Statistics, Memoirs of the Geological Survey).

Total 14682 tons lead (estimate).

REDMOOR MINE

1836-1842: 1430 tons lead ore estimated to contain 930 tons lead.

source: Agent's reports published in the Mining Journal.

1843-1844: 377 tons lead ore estimated to contain 260 tons lead. As Callington Mines.

source: Cornwall Records Office Stannary Returns STA517-518.

1845-1855: 6474 tons lead ore estimated to contain 4172 tons lead as Callington Mines.

source: Mineral Statistics, Memoirs of the Geological Survey.

1858-1860, 1883-1884: 271 tons lead ore estimated to contain 148 tons lead.

Total: 8552 tons lead ore estimated to contain 5510 tons lead.

HOLMBUSH MINE, Stoke Climsland

1846-1885 1477 tons lead ore estimated to contain 942 tons lead (Mineral Statistics, Memoirs of the Geological Survey). (Dines gives 1689 tons lead ore).

WHEAL WREY, St. Ives

1856-1866: 4976 tons lead ore estimated to contain 3435 lead. (Mineral Statistics, Memoirs of the Geological Survey).

WHEAL LUDCOTT, St. Ives

1853-1862: 5435 tons lead ore estimated to contain 3744 tons lead (Mineral Statistics, Memoirs of the Geological Survey).

TREWEATHA MINE, Menheniot

1853-1872: 4396 tons lead ore estimated to contain 2955 tons lead. (Mineral Statistics, Memoirs of the Geological Survey).

Acknowledgements:

Andra-Rada Iurian acknowledges the support of a Marie Curie Fellowship (H2020-MSCA-IF-2014, Grant Agreement number: 658863) within the Horizon 2020. More information on the project can be found at: <https://www.plymouth.ac.uk/schools/school-of-geography-earth-and-environmental-sciences/sedilink>

Alasdair Neill & Andra-Rada Iurian

LEVANT REPORT

The lime wash on the internal walls to the engine house is now being completed as the damp winter conditions within the engine house prevented this from being done before. Further work will be needed to the air pump rod bearing during the winter shutdown.

We have had numerous problems during the recent running season of the Whim. The oil burner pump serving the steam boiler seized which broke the shear-pin so a replacement pump was fitted. Problems also occurred with the automatic dosing of the water treatment for the boiler. Over a period of some months the mains water pressure was reducing due to a silted-up non-return valve. The reduction in pressure resulted in the flow switch controlling the dosing pump not operating properly. The next thing to happen was the 11,000 volt transformer feeding the mains electric supply to the whole site caught fire! A diesel powered alternator was quickly on site to keep us open, and full marks to Western Power for their speedy response!

Scaffolding has been installed around the head frame and new marine-grade sheeting fitted. A new internal wooden launder has also been made to divert water away from underneath the hoisting rope diverter sheave and a coat of paint to the head frame and diverter sheave is now in progress. A refurbished flagpole is now in position at the top of the head frame to enable us once again to fly the St. Piran flag.

A vivid theatrical experience celebrating the lives of Cornish miners serving on the Front Line has resulted in a replica World War One trench being constructed at Levant. This is to commemorate the 100th anniversary of the first day of the Battle of the Somme, and simulated life in the trenches using an area of 'No Man's Land' landscape on the mine site. On this day alone in 1916 the British casualties totalled nearly 58,000 troops with 19,240 fatalities.

The Trevithick AGM weekend went very well with many thanks to the

committee for an enjoyable three days. It culminated with us being able to run the Parkandillick Engine for the members. Some building repairs are urgently required and adjustments to the valve gear and cataracts are needed. We are indebted to Ivor Bowditch and Imerys for allowing us access to the engine house.

Ron Flaxman

LEVANT RESEARCH PROJECT PROGRESS REPORT

The project to digitise the series of Cost Books 1843-1872 was completed in March and consists of over 7500 items running to about 20Gb of data. With the demands of the new season at Levant, coupled with ongoing maintenance work, little analysis has happened so far. This will probably form part of the winter entertainment programme.

With regard to my request for information on the whereabouts of the Ennis Ticketing Book I am pleased to report that I was able to locate this volume with the help of David Lay, the Penzance auctioneer, who very helpfully put me in touch with the current owner. He, in turn, has given me access to the book and generously allowed me to photograph the whole volume, so I now have a complete digital copy. Brief analysis indicates that there are six sales from Levant records in the 1890s plus one possible sale from Boscregan in 1883. Also, of note, was a reference to a single sale from Kenidjack mine, nothing to do with Levant, but a St Just mine to which I had not previously seen any references.

The owner of the Ennis Ticketing Book was also in possession of the oldest share ownership document that I have so far encountered for the operation which commenced in 1820. This was the document which transferred the shares of Richard Boyns to his two nephews, following his death in 1830. Again I was allowed to photograph the document which

contained a hidden gem of information on the obverse.

The oldest written reference so far uncovered for Levant was found in the Diary of William Veale for April 12th 1782. It reads:

Went with Hichens and Robyns to Trewellard and dined at William Bennett's house on a beef steak pie carried from Hichens's. Bennett and William White dined with us, the latter is Capt. of a mine called the Levant which I adventure 1/12 part of.

ML 1032/1, Cornwall Record Office

The concern with food is pretty typical of William Veale! Another Veale document in CRO documents a dividend paid by Levant in 1791 and payments made to meet calls in 1792 and 1793. (Estate Accounts, Mrs Veale for her son 1789-1805, ML 385, Cornwall Record Office). On the face of it we have evidence of a period of working running from around 1781/2 to 1793 at which point the mine appears to close and interest shifts to the neighbouring property at Spearne.

My previous report on the Levant Research Project referred to a hope that we may be able to fill out the details on the first sale (April 1821) from information in the Jenkyn Letterbooks in the Courtney Library. This turned out not to be the case but a picture of sampling and carriage is beginning to emerge which is significantly different from practices followed in the Central Mining District, of which more later.

Ted Mole



KING EDWARD MINE

The 2016 season has got off to an encouraging start. Although the weather has been "catchy" this tends to benefit attractions such as ours as it favours under cover entertainment. Open Day this year was a smaller affair than usual as we did not have space available due to the builders requiring room for offices and storage, however we had a successful day given the circumstances. Music, singing and clog dancing in the mill and the mill machinery all functioning (but not at the same time!) proved as popular as usual. Our franchise for the new cafe opened a pop-up cafe in the dry which proved a great success. Their cakes and scones are scrumptious! Can't wait till they open full time!

One of our two firms of builders is making good progress with the new roof for the old beam winder boilerhouse. The roof covering is a scantle slate one and they are trying to recover as much slate for re-use as possible. The second company are currently building up the part of the stamps engine house which was demolished when the engine within was scrapped and they are also beginning work on converting the assay house to become the cafe. Not an easy task – the building is more listing than listed!

The archaeological explorations by Graham Sowell at the Brunton calciner site still continue. The more Graham uncovers the more we are confused! The grounds crew are very busy but it is a very good growing season and nature is currently winning.

The new shop layout is proving better to work in and seems to be liked by visitors as the takings and donations are increasing on last year's figures. Some tweaking of the layout and stock is still being done as we learn by the reaction of visitors.

K.J.T.R.

SS PENMOUNT

In the last newsletter there was a review of Pete Joseph's excellent book about Harvey's steamship - the Cornubia. The amazing life of that vessel reminded me of another ship with strong Cornish connections and an interesting history.

SS Penmount was built in 1900 by William Gray & Co. Ltd., West Hartlepool, for the Chellew Navigation Co. of Falmouth. In 1914 she was sailing across the Baltic as war was declared (with my grandfather working on board as an engineer). She was captured by a German ship and was impounded as a prison ship for POWs. Luckily for my grandfather, the German ship then proceeded to Sweden where the crew were dropped off and returned to Britain. Later in the war, SS Penmount and several other prison ships escaped from their moorings and made a dash for Britain. SS Penmount made it back, whilst at least one of the other escapees was recaptured. In 1917 she was requisitioned as a Royal Navy collier and at the end of hostilities was returned to Chellews.

In 1928 she was sold to the Latvian Shipping Company becoming SS Barta. In 1940, after Latvia was subsumed into the USSR she was nationalized. When Germany invaded Russia she was requisitioned as a transport. On 21/9/1941, during the Big Kronstadt raid, she was badly damaged and ran ashore. The wreck was then used as a signal and observation post. On 31/5/1944 she was refloated and towed to Leningrad. In 1945, after refurbishment she was returned to the Latvian State Shipping Company. It is not clear what happened next. One version says she was scrapped whilst another states she was lost in a storm in 1949.

CNF



ERECTED BY CAMBORNE OLD CORNWALL SOCIETY
IN COMMEMORATION OF
RICHARD TREVITHICK (1735 ~ 1797)
AND ANNE TEAGUE (1736 ~ 1810)
PARENTS OF THE GREAT INVENTOR
RICHARD TREVITHICK (1771 ~ 1833)

AND JOHN BUDGE, ENGINEER (1731 ~ 1823)
WHO ARE BURIED IN UNMARKED GRAVES IN THIS CHURCHYARD

Camborne now has another attraction for Trevithick aficionados to come and search out. On Trevithick Day Camborne Old Cornwall Society unveiled a plaque in memory of Richard Trevithick's parents and the engineer, John Budge, all of whom are buried in Camborne churchyard. The plaque is set in front of the grave of Andrew Vivian, Richard Trevithick's cousin and co-patentee of high pressure steam in 1802.

A small crowd witnessed the dedication ceremony in the churchyard, led by David Thomas, who is an authority on Camborne and its history.

It is also believed that the William Brunton, of calciner fame, and the sculptor Neville Northey Burnard are also buried in Camborne churchyard.

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PUFFING DEVIL

The Puffing Devil was readied for Trevithick Day over many weekends in the lead up to the great day itself. The front end of the boiler was cleaned and painted, the chimney and several castings sand blasted and painted, a stainless steel chimney liner fabricated by Sean Oliver, all the brass taps cleaned and refurbished, leather parts replaced and new coal baskets made. The inside of the boiler and the firebox were cleaned out and a special additive was prepared to help reduce rusting in the boiler. Teagles manufactured three drain plugs to replace the original one which had worn threads. Everything was done except for a fresh coat of paint on the sides of the boiler. The photograph below shows John Sawle steam cleaning the engine using a steam lance fed directly from the boiler of his steam tractor. Unfortunately, despite lashings of steam it did not work and so

the boiler was not clean enough to paint.

Two days before Trevithick Day the engine was filmed for the BBC programme Antiques Road Trip, to be screened this autumn. The engine drove up and down the road which divides the Wheal Busy mine site, which is generally a quiet road with a suitable background of Industrial Archaeology. On the day filming took place many more cars than usual drove along the road disrupting the filming. So what will probably be 2 minutes of programme time took 4 hours to film. John Woodward steered, Colin French drove the engine and Kingsley Rickard was interviewed by the presenter, Phillip Serrell (see photo bottom right).

Trevithick Day started at 0630 for the crew, in the car park of Glasson's Garage, where the engine was delivered by Richard Olds' tractor driver who helped us to pull the engine off its trailer. This year the steam pressure rose reasonably fast and we were ready to drive up to our



spot in Basset Street in good time. In fact we arrived just before the main column of traction engines reached their display area.

Trevithick Day was under new management this year and, whilst the overall format was very similar to previous years, there were significant differences, most notably the loss of the Camborne Hill Run of traction engines, including the Puffing Devil. For the Puffing Devil crew, the Hill Run was the highlight of the day, and despite seemingly being over in a flash, the drama of commemorating Trevithick's original journey in front of a large cheering crowd was really special. This year the Traction Engines paraded through the main street instead, which is what used to happen prior to 2001.

The Puffing Devil did not take part in the afternoon parade of engines. Instead, for most of the day, we had Basset Street to ourselves and so were able to drive up and down at will, giving many people an unique view of the engine driving along the road. A select few were also lucky enough to ride as passengers

on the engine, including one lady who desperately wanted a ride despite being wheel-chair bound. We made her day!

Basset Street is offset from Basset Road where the traction engines were all lined up, consequently, the size of the crowd was smaller and there was plenty of room for the onlookers to spread out. This suited us well.

The crew, John Woodward, Sean Oliver and Colin French, was supplemented by two steam apprentices, Tom Fogg and Morgan Carveth. We were delighted to welcome Ralph and Geoff Ingham, two members from England, who organised their holiday to coincide with Trevithick Day. Their help was very much appreciated.

Normally on Trevithick Day we consume 5 or 6 bags of steam coal. This year, due to the amount of driving along the street we used eleven bags. A costly, loss-making day for the Society, but undoubtedly worth every penny to see the smiling faces on the crowds that watched, some of whom had come from abroad especially to see the Puffing Devil.



The traction engine parade ended with the departure of the traction engines from Camborne. This left Basset Road empty and largely bereft of people. We were still running, but soon used up our water tank and then discovered the water bowser had gone home. Thankfully, the Animal Rescue charity shop came to our rescue and provided sufficient water to get us back to Glasson's Garage.

Overall, Trevithick Day was a tremendous success and very enjoyable for the Puffing Devil crew. The weather was perfect, the crowds were the largest for many years and the atmosphere was very friendly and happy.

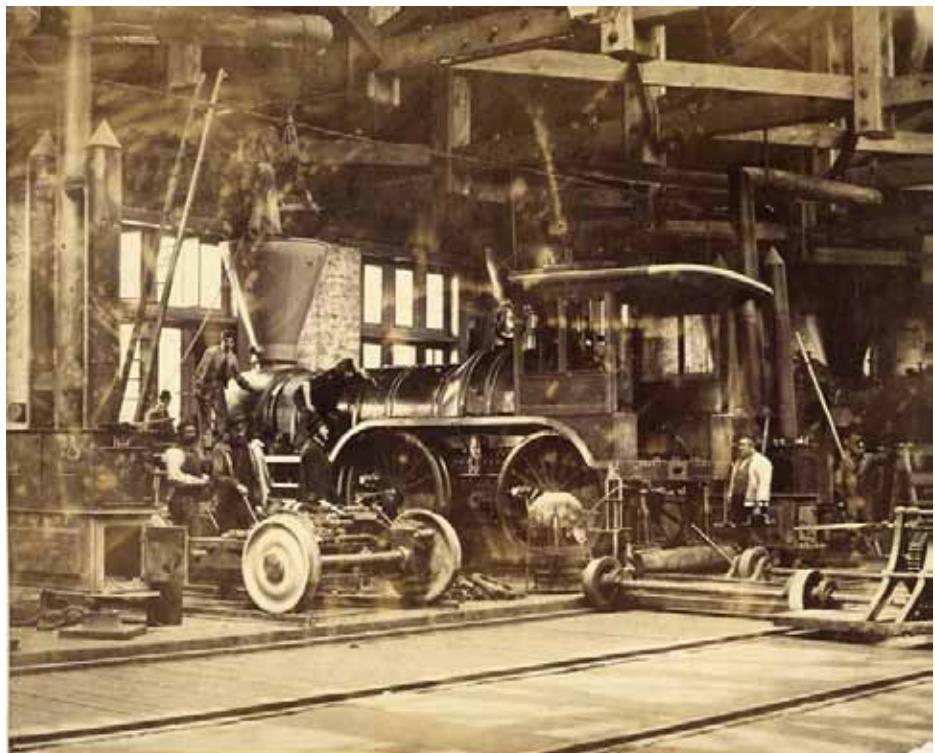
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The photographs above and below show the engine driving along Basset Street on Trevithick Day.

The photograph on the previous page and bottom right were taken by Ralph Ingham at the Antiques Road Trip filming.





The photograph above was found on the internet. According to the label it was taken in Canada at the Grand Trunk Railway erecting shops in 1858 and shows locomotive No. 209 'Trevithick' with F.H. Trevithick standing by the engine. It is interesting to note there is a man standing on top of the chimney.



PUBLICATIONS

First a reminder that Diane Hodnett's book, *Cornwall's Fuse Works* was officially launched at Trevithick Day and is selling well. It costs £20 in paperback and £28 in hardback. This is the first history of an industry which was of international significance and huge importance in Camborne-Redruth.

The press has been busy at Twelveheads and has resulted in several new volumes from that quarter. Author Elisabeth Stanbrook was written historical guides to two of Cornwall's most famous lighthouses, Bishop Rock and Longships. In a standard format these run to 64 pages and cover the construction and operational history of these two lights. The story of the people involved in building and manning the lighthouses also receives coverage. These books are excellent value at £6.50 each and are well illustrated with maps, drawings and photographs, modern and contemporary. The overall design and appearance is to the publisher's customary high standard. It is not clear whether these two books are the first instalment of a series covering all the principal lighthouses of Cornwall.

Only just received from Twelveheads at the time of writing is a new mining volume by Dr Tom Greeves of Tavistock. Called *Home: The Dartmoor Tin Miner 1860 – 1940 Photographs and Memory*. It is a history of three Dartmoor mines, Hexworthy, Vitifer and Golden Dagger. The book is profusely illustrated with old photographs of the mines at work and some more recent showing the gradual disappearance of the remains. Much of the text is based around interviews conducted by Dr Greeves over several decades with those who knew the three mines during the period 1900 to 1930. First acquaintance with this book suggests that it is a very important contribution to the story of Dartmoor's tin industry in its final phase. *Called Home* is published in a hardback edition at £16.

Finally is a book published last year, of which I only recently became aware. *Teagle: Reflections on 75+ Years 1937 – 2015* is the story of the remarkable agricultural machinery manufacturers of Blackwater from their first tip cart of 1937 to the present day where the company is only one of a handful of family run companies making farm machinery in the UK and exporting worldwide. This is a splendid tale, well told in 200 pages. It sells for £10 and supports Cornwall Hospice Care.

Graham Thorne

SHOW PROGRAMME 2016

The Society will be attending the following:-

- July 24th. Bude Heritage Day
- August 19/20/21st. WESES Steam and Country Fair, Stithians Showground.

The Puffing Devil was in attendance at the Bodmin & Wenford Steam Railway Gala on 18/19th. June. A very pleasant two days was spent there by Phil Porter and the writer but we have only just dried out and that was not through being in the bar!

Camborne Trevithick Day was attended as usual and it was a very busy and successful day with bright sunshine bringing out the crowds.

Thanks to all volunteers who helped make it an excellent day namely Dave Crewes, Peter Bickford-Smith, Diane Hodnett, Lincoln James, Pete Joseph, Dave Mann, Phil Porter and Barbara Tripp with Colin French and Sean Oliver manning the Puffing Devil.

K.J.T.R

SOCIETY MEETINGS PROGRAMME

KEM: meet at 1900hrs for a 1930hrs start at King Edward Mine, Troon, Camborne TR14 9DP.

Saturday 2nd July (Field Trip).

Visit to Wheal Jane

Meet 1000hrs at Wheal Jane Earth Science Park, Baldhu, Truro, Cornwall, TR3 6EE. Wheal Jane provides mining contracting, surveying and mineral processing on site. A presentation followed by a tour of the site.

Friday 8 July (KEM).

Antarctic.

by Tracy Elliott

See the wonderful scenery of the Antarctic and glimpse the old whaling trade.

Monday 11 July (Liskeard).

Talk by Gus Horsley – Caves and Conservation

Gus has been in Cave Rescue teams and has wide experience of caving and mining

Monday 12 September (Liskeard).

Talk on Hemerdon mill by Klass van der Wielen

A rare glimpse into the workings inside a modern mill.

Sunday 25 September (Field Trip).

Visit to Kit Hill. A look at the history with local Blue Badge guide, Chrissie Le Marchant. Tea & cakes to follow.

Tuesday 20 September (KEM).

Mines of Cornwall and West Devon (Davy to Tavy).

by Dr Keith Russ

(Joint meeting with Carn Brea Mining Society)

October (Field Trip).

Visit to St. Michael's Mount tbc

Non members are welcome to attend.

Non-members £2.00 please.

Liskeard: Meet 1900hrs for a 1930hrs start at The Long Room, Liskeard Public Hall PL14 6BW.

Monday 10 October (Liskeard).

The Shamrock. A history of the boat moored at Cotehele and the estate.
by Joe Lawrence.

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

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

Also:

- Members are invited to visit Poldark Mine free of charge on production of a valid membership card.
- 10% off book purchases at Tormark.
- 20% 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.

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