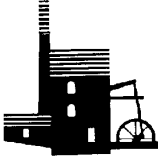


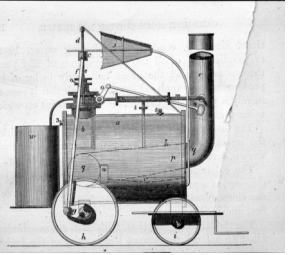
THE TREVITHICK SOCIETY



Eric Hughes, Co. Antrim, explains how he built the remarkable “Freddy” steam car

CHAIRMAN'S ADDRESS

If the Chinese celebrate the 'Year of the Ox' or 'Year of the Sea Dragon', then for the Trevithick Society, 2001 has undoubtedly been the 'Year of the Puffing Devil'. Since her debut in April, the Camborne Road Locomotive has had an extraordinary summer when, manned by her splendid crew, she has been seen, to acclaim, throughout most of Cornwall. She is most certainly a highly prestigious flagship, not only for the Society, but the town of Camborne itself, which is now too often mistakenly regarded as an impoverished backwater, devoid of skill, talent or vision. The engine is also a lasting tribute to the dedicated band, who virtually put aside all else for three years to ensure that the project came to fruition in such a magnificent fashion. In July, thanks to the generosity of Phil Hosken, I was able to attend the steam fair at Boconnoc, and the sight of the locomotive (even when she ran aground on a soft pathway) made me extremely proud to be your chairman. Certain voices have been raised as to whether the Society is departing too far from its roots, but this is to ignore the notion that anything that does not evolve in a considered yet vibrant fashion will ultimately face extinction.



Indeed, there are times when I feel that the Society stands like a rock amid a flood of mediocrity, indecision and procrastination. What twenty years ago was a simple enthusiasm for 'industrial archaeology' has been hijacked and re-labelled 'industrial heritage', and is now an integral part of 'regeneration'. This seems to equate with tastefully painted trams tucked under cherry trees, or engine houses standing amid what appears to be a poor TV garden makeover.

The ongoing problem for us as a Society, lacking any real power, is just how to influence what is often transient bureaucrats to whom Cornwall is merely 'Basingstoke by the Sea'. Too often they rely on their own stable of experts, whose expertise resembles workhouse jam, spread over a wide area, yet lacking substance and depth. We are inundated with policies, strategies and feasibility studies, while there are endless meetings and seminars, where so much hot air is generated that it could be an alternative source of energy in Cornwall. Listening to, or reading the subsequent outpourings, I am often reminded of something written by the American literary figure William Manchester, who served with the U.S. Marine Corps. on Guadalcanal, and who said of a particularly inept company commander, that 'inside his third rate mind, was a fourth rate mind trying to climb out'. The Society's views are being put forward much more strongly than in past years, and we should therefore be able to have more influence than in the past.

The Society can look forward to an excellent future as, besides our somewhat new role down at the 'sharp end', we maintain our academic roots with lectures, publications and field trips. I have a personal apology for not attending most of the AGM weekend, as an old back injury, a souvenir of the Geevor water wheel, and worsened by gallivanting around the Portsmouth Tall Ships Festival, saw me born away on a shutter at an early stage in the proceedings.

Clive Carter

STOP PRESS

Carlton TV have recently completed a feature length documentary on Richard Trevithick and it is anticipated that it will be shown this Christmas.

EDITORIAL

Please excuse the mistakes I made in the editorial in the last Newsletter. In the mad rush to get the Newsletter to the printer for publication in time for the AGM, I forgot to make the final amendments to the editorial. Instead of "The Trevithick Society has been awarded the London Cornish Association Shield for XXXXX" it should have read "The Trevithick Society has been awarded the London Cornish Association Shield for its outstanding services to Cornwall and Cornish people, through the promotion of Cornish industrial history, in particular the Trevithick replica carriage, which has become the cornerstone and living example of Cornish expertise, endeavour and achievement".

This year the Society has received a tremendous amount of good publicity with almost weekly articles in the West Briton and Western Morning News newspapers, frequent snippets on the local television stations and a few mentions in the National press.

This Newsletter contains a second review of *The Kalmeter Journal*, edited by Justin Brooke. I feel *The Kalmeter Journal* is such an important account that a second opinion of its merits by Bryan Earl deserves an airing.

Due to the amount of material received, this issue is rather crammed and four pages longer than normal.

The Camborne Road Locomotive has kept quite a few members busy this summer, tending to its needs at the many events at which it has appeared. It has been out and about most weekends, along with the bright yellow Society tent which provides welcome shelter for the crew, and houses the bookstall and a small display.

December 24th — Camborne Hill Run bicentenary

The plans for the Camborne Hill Run on Christmas Eve at 11 am, the true bicentenary of the engine are well underway. This event is being jointly arranged with the West of England Traction Engine Society. It will be a fitting end to this year of celebration for the Society.

Following the run will be a celebration Roast Goose luncheon at the Tyack's Hotel in Camborne to reflect the fact that Richard Trevithick had "Roast Goose and proper drink" on the day of the last outing of the original engine. There are very limited places available at this luncheon and any members wishing to attend should send a cheque for £10.00, payable to the Trevithick Society, to Kingsley Rickard, 6 Seton Gardens, Camborne. TR14 7JS. Places will be filled on a first come first served basis (closing date 30th November). Cheques will be returned if over-subscribed.



Copy date for next issue is January 12th,

Colin French

LETTERS TO THE EDITOR

Dear Editor,

I am writing to express my appreciation of all the effort put into Se-Tech 2001. It was an extremely enjoyable weekend from start to finish and the Society is to be congratulated.

Although I knew very few people, being an up-country, "ex-pat" Trevithick Society member, I found the company of like minded people very convivial, especially at relaxed meal times. The catering was excellent and the evening entertainment I found both uplifting and nostalgic. Just the right formula!

I really enjoyed Kingsley's bus tour. His commentary and anecdotes were A1. It was interesting to see the changes, some for the worse, since I last wandered through the area in total awe as a CSM student in the 1960s.

The conference itself was both instructive and informative. The range of topics was excellent and all the speakers were knowledgeable in their respective fields and imparted that knowledge succinctly within a very tight time schedule.

For me, Sunday crowned the event. Even though the Falmouth Docks are obviously cash-starved the opportunity of a proper guided tour was interesting and an eye opener. I already know Bob Dyke and his White steam car as I also belong to the Steam Car Club. The opportunity to see and ride upon the Trevithick replica was priceless. I collect steam engines of all sorts but they pale into insignificance alongside that!

I also attended the AGM, my first one since joining Alan Stoyel's Cornish Water Wheel Preservation Society in its infancy when I worked at Pendarves Mine, on graduation, as a Shift Boss.

Ian Thompson,
"Treslothan"
33a, Grosvenor Road,
Birkdale,
Southport, PR8 2ES

Dear Editor,

A very senior member of the Newcomen Society has sought my assistance in proving the truth or otherwise of the story that a young lady took a trip on the Dolcoath man-engine some time in the 19th century. The man-engine was installed in 1862 and was replaced by a more modern mode of transport in 1895.

Can any reader help?

Justin Brooke,
Chymorvah Veau,
Marazion. TR17 0DQ.

Dear Editor,

This is to express my appreciation to the Trevithick Society, and everybody involved in the Se-Tech 2001 programme for the highly interesting days we spent in Falmouth.

I enjoyed every minute, in the very friendly atmosphere, with all the members of the Society, the speakers and guests.

Luckily we had still time on Sunday to be driven around by John Sawle and to visit some places in Cornwall.

In connection with the history of technology, the mining business and Cornwall's role in advancing steam technology I understand now better the significance of your replica programme which is so symbolic and which hopefully marks the starting point of a new spirit in this beautiful country after the closure of so many mines.

In this sense your programme can not be estimated high enough. Those who have made it possible deserve the highest rewards and appreciation. Time will show that what you have done will eventually be understood by a broader part of the country.

I intend to find ways and means to bring your superb replica as soon as possible to Switzerland on display and operations in the frame of a Cornwall promotion program. There are many reasons to do that.

Jack R. Metz
Switzerland

Dear All,

Se-Tech 2001 was a wonderful and a successful weekend Congratulations all round. Proper Job! Many thanks.

Professor **John Sharpe**

Dear Editor,

Many thanks to the Society for the perfectly organized conference. I also considered it a success and hope it will give some input for the future of steam applications. It was also a pleasure to see the old steam in contrast and to actually run on the 1801 replica. Many thanks for this too. Unfortunately John Sharpe rushed us off, so that there was not even time enough to properly say good-bye and thanks. Sorry for this.

Roger Waller

DLM Ltd.

Switzerland

Dear Editor,

I am writing to pass on to the Trevithick Society the especial appreciation of those of the Stephenson Locomotive Society who attended SeTech, for a most interesting, convivial and generally happy weekend.

It is also a source of much satisfaction to the SLS that we are able to enlarge on the rapport between the two groups and our Chairman has asked me to express this sentiment.

Derek Cobby,

Promotions Officer,

102 Kingsley Road,

NORTHAMPTON. NN2 7BY

Dear Editor,

THE WEST COUNTRY AND LONDON

I congratulate Peter Stokes on his article in the Society's Journal No. 28:2001. His exposition on the work and thinking of early steam pioneers I found fascinating. However, with regard to his comments on the engines of more recent times, I would like to make the following observations.

Firstly, he mentions Trevithick's 24-inch engine of 1811 at Wheal Prosper and describes it as "Bull configured". The actual form of this engine has been the subject of speculation for many years. Francis Trevithick illustrates it in his book on his father as a "Pole" engine, that is the cylinder was over the shaft but the piston

was in the form of a trunk which emerged through a gland at the top of the cylinder: certainly not a Bull working on the Cornish cycle. (Pole engines were usually non-condensing).

Richard Hosking quoted in Dickinson & Titley's work on Trevithick, however, paints a different picture. He said it was an inverted engine with the beam under the cylinder working at 6ft equal strokes. The air and feed pumps were worked by an auxillary, or "half", beam arranged overhead. Both these descriptions were given many years after the engine's very short period of working, but to me Hosking's description (of 1843) appears the more plausible.

Some writers have suggested that there were two engines on the mine, but the scale of the operation certainly would not have supported two: the adventurers were lucky to have had one! However, the use of high pressure steam in combination with a condenser appears irrefutable.

Secondly, in dealing with London waterworks he mentions the crack in the beam of the 100-inch Cornish engine preserved at Kew and says that the engine will remain non-operational in consequence. Since the engine worked on full load for more than 60 years after the beam was patched (its last run in 1958 was a stunt) the Museum management sees no reason why it should not eventually be put back to work on a reduced load, as with the other preserved Cornish beam engines there.

Thirdly, he talks about the stopping of the Greensplat 30-inch engine in 1959 as if it were the last Cornish engine to run anywhere. All 14 Severn Tunnel engines worked until at least 1960. I have a note that I saw one of the Sea Walls 41-inch engines running in March of that year. The Ceremonial stoppage of the last 70-inch engine at Sudbrook took place on 6 November 1961, yet as far as I can make out nobody from Cornwall was invited.

Fourthly, the Phoenix United 80-inch engine was certainly not the last built. This honour goes to the Goonbarrow clay works 36-inch engine built at Charlestown in 1911-2 and set to work in 1914. Much later, in 1945, it donated its plate beam to Taylor's

90-inch engine at East Pool as a surface balance bob, where it can still be seen. Furthermore, in 1916-7, Pascoe's 80 at Basset Mines was replaced by a new engine, all but the old beam, which was retained. This was as a result of an accident. The new engine was built by Worsley Mesnes (pronounced Main) of Wigan. Basset's engineer, William Jelbert, went to Wigan to conduct a final inspection and then rode back to Cornwall in the goods train conveying the engine parts. The journey took him three days!

Kenneth Brown,
15 Coombe Park,
Camborne.
TR14 0JG.

Dear Editor,

I greatly enjoyed Mr. Peter Stokes' account of the evolution of steam power in the West Country, published in this year's Journal. However, I do question one point, which has nothing at all to do with industrial history and everything to do with the history of British music.

He is correct regarding the three act opera "The Wreckers" by Ethel Smyth, as being associated with Cornwall. The libretto was written by Henry Bennett Brewster, who was a close friend of the composer. The opera was first performed in England in 1906, under the baton of a young and promising conductor called Thomas Beecham. The latter, some years later, recounted an incident which occurred after that first performance, which was attended by King Edward VII.

Beecham had inquired of the king's secretary (Fritz Ponsonby) as to what his majesty thought about the work. "I don't know what he thought about it", came the reply. "Well he must have said something", said Beecham, to which Ponsonby answered, "Oh yes, he said something alright. It was about half way through that the king awoke suddenly and bellowed Fritz! That's the fourth time that infernal noise has roused me".

Having disposed of the above anecdote, I pass on to the part that puzzles me — namely Eric Coates "Four Cornish Dances", which were premiered at one of the 1966

Henry Wood Promenade Concerts with the composer conducting. Malcolm Arnold lived in Cornwall for some years, at St. Merryn, near Wadebridge, and another work associated with Cornwall is his rumbustious march for brass band — "The Padstow Lifeboat" in which the composer clearly depicts that raucous blast of the fog horn at Trevoze Head.

Eric Coates was more of a composer of light orchestral music and, as far as I know, he did not compose any Cornish dances.

Still, having said all this, I congratulate Mr. Stokes on an excellent study.

Gerald Williams,
2 Mount's Bay Road,
Alverton Estate,
Penzance. TR18 4QP.

Dear Editor,

Ken Brown has sent me a copy of his comments regarding my Journal article, with the suggestion that I might respond in this issue, thus speeding up communication. My response follows as well as an expression of my appreciation for the AGM and Conference.

I much enjoyed the opportunity to come down to Kernow from the hinterland of London and enjoyed the AGM and Conference, and the good fellowship at Falmouth. This was all consolidated by the personal opportunity for my own re-enactment of December 1801, courtesy of the team. By a miracle of the dry cleaners art I can wear my jacket again, and I give thanks that I did not fall off in the speedy progress and thus disgrace myself.

An up-country thought with regards to a side debate at the AGM concerning the date of the conference coinciding with the AGM weekend. The virtue of this decision facilitated attendance for those at a distance with economy in gaining accommodation and minimising travel expenses. Those blessed with domiciliary locality have first rate opportunity for dining with relative economy.

The conference made strong input per the renaissance of steam in compact power, and I am motivated to pursue making a contribution in the future in consideration of the closed cycle/latent heat engine 'dream',

surprisingly, I thought, unexplored.

Ken Brown advises of a difference in interpretation of some aspects of my recent Journal article, and debate is always a clarifying virtue when running at full spate in enthusiasm. With regard to my 'Bull' configured contention relating to Trevithick and the pumping engine, we seem in fact to agree with Hosking's interpretation. With regard to advice of managements opinion of the Kew 100", it stands. I stand corrected concerning the precedence of the Greensplat 30", having got caught up in my enthusiasm for the London—Cornwall saga.

Peter Stokes,
46 Carrington Avenue,
Borehamwood,
Herts., WD6 2HA

The LGLC is active in the following planning matters and if you wish for full detail please contact the committee member concerned. Should you come across a matter (not just planning) that should be considered by the Society then please contact the LGLC member direct.

BELOWDA & GOONVEAN ENGINE HOUSES. (RBC)

In a discussion with the MD of Goonvean Ltd it was ascertained that English Partnerships would allow the demolition of both of these engine houses subject to a home being found for the Goonvean

LOCAL GOVERNMENT LIAISON

Engine. The proposal to demolish these engine houses is to be put to the district council. No specific home has been found for the engine but Goonvean say they would assist with its removal/transportation. Whilst opposing these demolitions it maybe proposed, should demolition be approved, that "trade off" be considered where funds towards repairs to Belowda Engine house at Roche may be obtained from Goonvean Ltd if demolition of Belowda and Goonvean is approved.

MAKER WITH RAME EXPERIMENTAL WINDFARM. (C&WDD)

A letter of objection has been sent to

Caradon District Council. The application is to erect a "vertical bladed" wind turbine on the crest of a ridge within the area of Maker Fort. Whether this single wind turbine is purely experimental or the first of the many is not clear.

TOLGULLOW VEAN (ZIMAPAN) ST DAY INFILL. (CDC)

Whilst this application falls in Carrick District the case is being dealt with by Vernon Baldry. The Society has objected to this application on the grounds that the site falls within the "World Heritage Site Bid" area and there are also numerous social reasons why this application should be refused. The case was put before CDC on 10OCT, where the Society was present, and the Planning Committee resolved to hold a site meeting on 30OCT. A meeting of local objectors was held in Sept. and a further one on 24OCT. The Society will have been be represented at both of these meetings and contact has been made with all interested parties and all Local Councillors; parish, district and county. The case will probably be reconsidered by Carrick District Council on 07NOV.

HALLENBEAGLE INDUSTRIAL ESTATE. (CDC)

A number of Society Members have written objecting to this application, as have the Parish Councils concerned. At the time of writing the LGLC member concerned is away but contact will be maintained with the case. There are a number of important structures on the site.

CAMBORNE, POOL & REDRUTH REGENERATION. (KDC)

The local press has been full of this set of proposals over the past week or so and, from what can be gleaned from this and personal contact, little if any attention has been given to local proposals or objections. As things stand, South Crofty mine is now a part of the scheme where SWRDA were considering compulsory purchase so that the site could be incorporated in the overall plan but not as a working mine. Several society members are attending to this case and any information should be fed back to the LGLC Member concerned.

See page 15 for list of LGLC members
(and abbreviations)

A.I.A. 2001

This year's conference, which took place in August, was based at Fitzwilliam College, Cambridge, and was acclaimed as the best yet. The standard of the accommodation, and the University facilities, were the best we have seen for many a long year, whilst the numbers attending ensured a wide choice of field trips during the week following.

As is now customary, proceedings started with a seminar day on Friday. This covered a very wide range of topics, but also included the first talk on the main theme of the conference—the drainage of the fens. This was the greatest engineering project of the second millennium, and for sheer scale is exceeded only by Hadrian's Wall. At one time there were 11,000 employed on making the straight cuts that got the water away. Needless to say the field trips visited a number of the major drainage areas, with their accompanying steam, the diesel driven pumps, now nearly all replaced by electricity.

Over the weekend Ely received a visit, as did sites in Cambridge, both on the river and in the town.

On Sunday evening a reception was laid on at the Museum of Science and Technology in Cheddars Lane—it actually rained at this—the only adverse weather until the very last day.

Other sites visited included Duxford aircraft museum (where a guided tour emphasised the restoration side); Peterborough, including a works trip of Perkins diesel; Chantry mills at Haverhill; Bulmer brick and tile works, where all the products are exclusively hand made for restoration projects e.g. Hampton Court; Rugby cement works at Barrington; St. Neots; Grimes Graves (including a flint-knapping demonstration); Euston Park watermill, where the Duke (a previous chairman of S.P.A.B.) and Duchess of Grafton personally showed the visitors round; Thetford, taking in the Burrell traction engine museum; conducted tours of Elgood's brewery at Wisbech—including splendid restored formal gardens; sites at Kings Lynn; casting demonstrations at Bulbeck Iron foundry and the early 19th century development of Commercial End at Swaffham Bulbeck; Newmarket and the horse racing museum, Tattersall's etc

There was plenty for every interest—we even learned about the 19th century coprolite industry. Coprolite comprises fossilised droppings from the Dinosaur era, and was discovered in great quantity—250 to 300 tons per acre, about 20 feet below the surface of the fens. Treatment with sulphuric acid converts this to superphosphate, which retailed at £2 a ton for fertiliser. I leave the slides of this interesting excrement to the reader's imagination, but they provoked a great deal of hilarity at the time!

The Rolt Memorial lecture was delivered by Stuart Smith on the subject of "The development of industrial museums in the landscape"; this will be published in due course. Next year's conference, 6th-12th September 2002 has the theme "Forth and Clyde", and will be at Heriott Watt University, Edinburgh.

Roger Ford

McNAUGHT BEAM ENGINE

In 1955, following a fire in the Boiler House and Engine Shed at Risby Bros Timber Mill in Collins Street, Hobart, where the Beam Engine was used to drive saw benches and dressing machines, the owners decided to replace it with a 100 hp electric motor and donate the engine to the Government on the understanding that it would be preserved and hopefully housed in an appropriate Technology Museum.

The engine was removed and re-assembled in the workshops of the Public Works Department and stood in the open for the ensuing 35 years, fortunately it was periodically turned over by compressed air from the workshop supply. In September 1990, it was refurbished and displayed at the Hobart Institute of TAFE.

EARLY HISTORY

Little is known as to exactly when the engine arrived in the colony. The first evidence came from the original records of Boiler Inspections which commenced in 1885. At this time, it was on record that there was a 20 hp McNaught engine

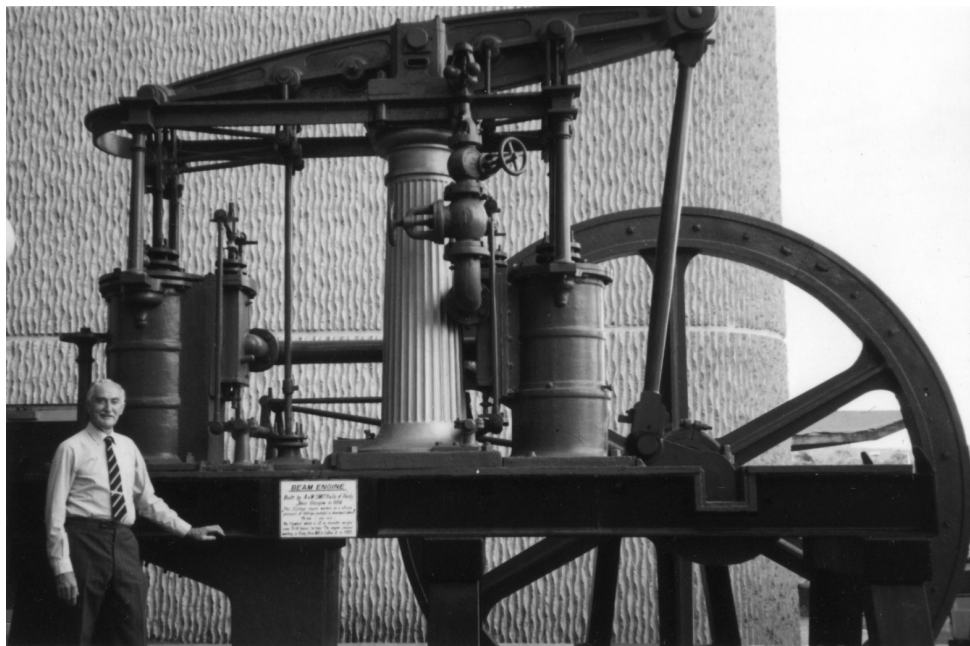
operating in Henry Clark & Co's sawmill in Collins Street, Hobart; this mill was later bought out by Risby Bros in 1921. Incidentally the first Inspector of Machinery was a Mr. John Clark, a brother of Henry Clark. These two brothers had taken over the Engineering business consisting of workshops, foundry and the importation of machinery from their father Alexander Clark upon his retirement in 1870. Alexander Clark, a prominent engineer, arrived in Van Dieman's Land in 1832 and set up his own engineering business in 1838.

In July 1872 'The Engineer' reported on the manufacture by Mr. John Clark of Hobart Town of a boiler for a 20 hp McNaught engine. This was obviously the same engine.

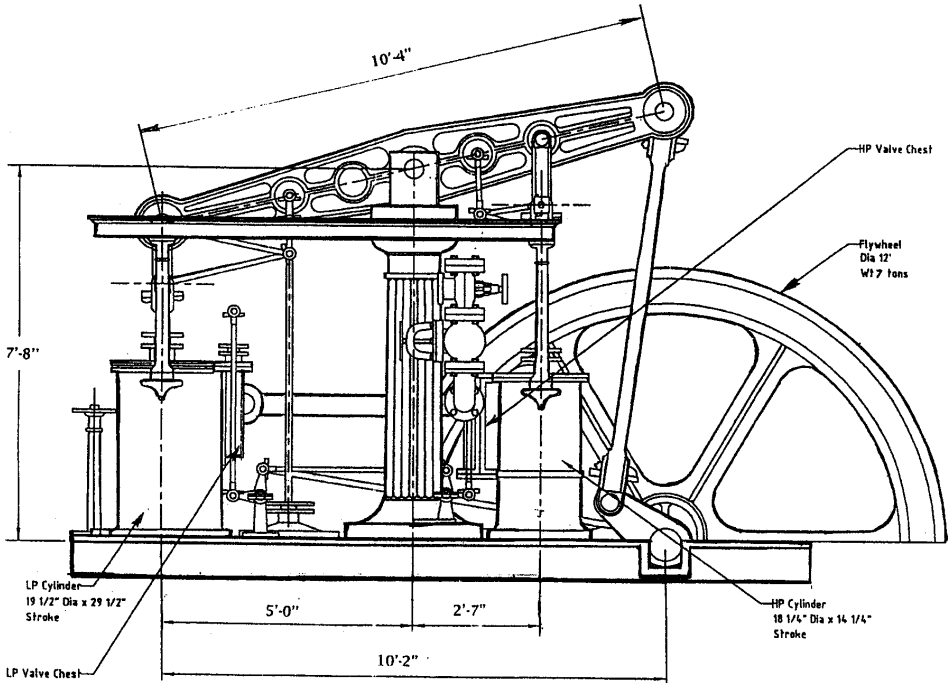
Enquiries were made to the successors of A. & W. Smith & Co. viz Fletcher Smith Ltd of Derby and to Archives Offices in Scotland and whilst all were most co-operative, no additional information has been obtained as to the arrival of the engine into the Colony. It is considered most likely that Alexander Clark or his sons imported this engine.

THE McNAUGHT PATENT

Up to about the middle of the 19th century



9 most Beam Engines were of the low



pressure single cylinder type. By the mid 19th century boiler pressures had increased considerably and in order to obtain additional power from this increase, many existing single cylinder engines were fitted with an additional cylinder mounted alongside the low pressure cylinder.

This frequently resulted in overstressing of the beam and William McNaught had the idea of mounting the additional cylinder on the opposite, or crank side of the central column thus avoiding the overstressing. In 1845, McNaught took out a 15 year patent on the placing of the high pressure cylinder in this position and such engines became known as McNaught or McNaughted (Beam) Engines. This patent applied not only to engines which had been modified by the fitment of a high pressure cylinder, but also those which were originally built with this cylinder configuration.

ENGINEERING DETAILS

The engine, although small by comparison to many Beam Engines made in Britain in the 19th century, has many interesting features.

The most controversial feature is the placement of the high pressure cylinder which necessitated a portion of the central column being cut away to make room for the steam line entering the valve chest. This arrangement results in the whole high pressure cylinder having to be removed in order to gain access to the steam chest and valve. Obviously this was the only possible solution because, if the cylinder was turned through 180° the connecting rod would strike the valve chest. In outward appearance the two double acting cylinders are similar in size, however, the lower one third of the high pressure cylinder is in effect a pedestal, whilst only the upper two thirds is the cylinder proper. The lower pedestal section has a cut away portion to provide clearance for the crank shaft and connecting rod. The cylinder dimensions are as follows:

High Pressure 18" diameter bore X 14.5 stroke
 Low Pressure 19.5" diameter bore X 29.5 stroke

Whilst the difference in cylinder bores are minimal, the variation in stroke, due to the relative cylinder positions, results in a

cylinder capacity ratio of 2.36:1.

Initially the foregoing led to the conclusion that the engine had been McNaughted, i.e. the high pressure cylinder had been added at a later stage, Dr Peter Milner, Senior Lecturer in Mechanical Engineering, University of Melbourne, in his report dated November 1992, considered that the engine was originally built as a compound engine, making use of existing patterns and components. The article appearing in *The Engineer* of July 1872, which confirms Dr Milner's findings was discovered well after he published his paper, and examination of the engine base plate further confirmed this opinion. The engine incorporates the parallel link motion patented by James Watt in 1784.

Another notable feature is the way in which the bedplate and valve control linkages and shafts have been built so as to enable the flywheel and drive to be mounted on either side of the engine.

Other features of interest are the use of artistically tapered columns, both for the central beam supporting column and the minor columns supporting the entablature. Most moving parts are assembled and held together by the use of tapered keys.

The 7 tonne flywheel is cast in two halves and balanced by some 16 balance weights bolted into recesses in the rim. As is common practice with engines of this type, the hub of the flywheel is bored out considerably larger than the diameter of the crankshaft and secured to the shaft by four flat wedges.

Although the engine was initially operating under a pressure of 40lbs per square inch, in later years it was reported as operating under a pressure of up to 100 psi. The operating pressure of the engine prior to removal in 1955 was 80 psi at 80/90 rpm.

The only other land based beam engine listed in the boiler inspection records of 1885 was a 15 hp unit of unknown make operating with a pressure on 35 psi at D. Ritchie & Sons flour mill in Launceston. The subsequent fate of this engine is unknown.

THE ENGINE'S CLAIM TO FAME

In October 1992, the Institution of Engineers Australia held the 6th National Engineering Heritage Conference in Hobart

and it was most fortuitous that the Keynote Speaker at this Conference was Professor Angus Buchanan, then Director of the Centre for the History of Technology at the University of Bath (UK). He is a recognised world authority on the history of early steam engines and a past President of the Newcomen Society. Dr Peter Milner, was also in attendance at the Conference. Both were impressed with the historic importance of the engine and Prof. Buchanan later stated in his report on his Australian tour that ... "at the Technical College there stands a mid-nineteenth century beam engine for which it is likely that a claim could be made that it is the oldest surviving McNaught (Compound) Engine". He further stated ... "It deserves to be moved into a better protected environment".

This claim was further supported by information contained in the publication "The Industrial Archaeology of the Steam Engine", of which Prof. Buchanan was co-author and in which it listed the oldest existing McNaught engine in Britain as having been built in 1865.

In May 1994 the Newcomen Society in London, confirmed that they were unable to find an older McNaught Beam Engine.

CONCLUSION

The Historic Engineering Marker presented by the Institution of Engineers Australia was unveiled by the Hon. Sue Napier MHA, Deputy Premier and Minister for Education and Vocational Training in the Boardroom of the Hobart Institute of TAFE on Tuesday, 8th April 1997. The function was arranged jointly by the Institution and the Institute.

Mr C. A. Risby, former Managing Director of Risby Forest Industries, who gifted the engine to the Government some 42 years earlier and who recently donated most of the cost of protective roofing over the engine, also participated in the ceremony.

At the same time it was announced that the Tasmanian Museum and Art Gallery had agreed to accept formal ownership of the engine, thus ensuring its long term safe keeping.

As a person who has had close involvement with the engine from the time

of its removal from Risby's Mill in 1955, I consider the final outcome for the engine's preservation to be most satisfying; it is however, fair to say that without the visit made to Hobart in order to attend the 1992 Engineering Heritage Conference and interest shown by both Prof. Buchanan and Dr Milner, the engine would have remained just an interesting old engine and would certainly not have received world recognition.

ACKNOWLEDGEMENTS

The author wishes to record his appreciation for the interest and research carried out over several years by Dr Peter Milner, Senior Lecturer in Mechanical Engineering, University of Melbourne and to the assistance given by Mr Clive Ellam, Executive Secretary of the Newcomen Society of London.

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R.A. Buchanan & G. Watkins, The Industrial Archaeology of the Stationary Steam Engine. London, Lane 1976.
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F.N. Lakin

The Society has obtained a 1935 Holman compressor as a suitable restoration project.

A stone crusher is also being painted by Society members for display on the roundabout outside the CompAir Holman factory in Camborne.

A full list of Society Publications was in the August 2001 newsletter and these are all available from Willow Books. Elsewhere in the letter is a review of Clive Carter's 200-year history of Holman's of Camborne. Holman's have granted the Society publishing rights to this book and, together with the Trevithick 2001 Celebrations, Holman's unique record in Cornish

HOLMAN COMPRESSOR & WINDER

Industrial History must be essential reading for all Society members.

As you know, any publication at all is available from Willow Books and the Society benefits from every purchase you make. There is a small number of various publications (Some Shire Books

BOOKS FOR CHRISTMAS

Publications, The Textile Mill Engine, Engines of Newcomen, Trinity House, Cornish Engines (Laws), Port of Penzance) that have been in stock for some time are available from Willow Books at discounted prices. Contact them for a list of what is still available. To order:

- Please provide full details of the books you wish to order: Title, Author, ISBN (where known)
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Personal contact Anna

A Merry Christmas and A Happy New Year to all Members and thank you for your support over the past year.

Vernon Baldry.

Se-Tech 2001

The Se-Tech 2001 Conference at Falmouth College of Arts, 21,22,23 Sept 2001 was a tremendous success and was a part of the Society's 200th anniversary celebration of Richard Trevithick's development of high pressure steam. Perhaps surprisingly it was the first conference of its kind in the world. A very special occasion to show the ability of Cornish people 200-years-ago and their vision for the future. Both the speakers and delegates were from around the world and this was an occasion of very special importance for the future of transport and control of global warming.

Trevithick's work provided the power for the Industrial Revolution and transport for the following 100 years. Its subsequent replacement by the internal combustion engine has loaded untold millions of tonnes of pollutants into the atmosphere, causing climatic change and threatening the long-term future of mankind. New steam technology can help to halt this process by such developments as the zero emission

engine.

On Friday the delegates arrived during the day to register at the Green Lawns Hotel. Many went on the afternoon coach tour through the St. Day and Camborne-Redruth mining districts, led by tour guide Kingsley Rickard. For those that did not know Cornwall, it gave ample demonstration of just how industrialised Cornwall once was, how extensive is the remaining mining landscape and how badly Cornwall has fared due to the prolonged economic decline and associated grinding deprivation.

Following the evening meal at the Green Lawns, the keynote speech was given by Mr James Hodge, former Chief Engineer at Power Jets (R&D) Ltd and Director of Engineering at Holman Brothers. A Cornishman and past president of the Society his address was entitled, 'Steam, the Cornish and the Trevithick Society'. It told of some of the multitude of engineers and scientists from Cornwall, and in consequence the disproportionate contribution that this small region had during the Industrial Revolution.

He was followed by a dramatic interpretation of the Cornish mining industry



James Hodge giving the keynote speech at the Se-Tech conference



Jack Metz, Prof. Sharpe, Roger Waller, Ted Pritchard, Dr Alec Moulton

by Cornwall Songwriters with their award winning 'Cry of Tin'. This gave a very graphic, and at times moving, account of the 3000 year history of tin mining, dramatised in powerfully worded song.

"You are all very special people," said the president of the Trevithick Society, Mr Eric Edmonds, in his welcoming address to speakers and delegates at Falmouth on Saturday, "you are all people with vision for the future."

Papers at the conference started with a review by Tony Stebbing, former Director of the South West Centre for Climate Change Impact Forecasting, who set the tone for the conference by issuing a warning on the present position of global warming, eloquently demonstrating the urgent need for new technology to drastically reduce engine emissions, and the almost inevitable, eventual replacement of the internal combustion engine.

Prof John Sharpe spoke of William Murdoch's use of waste to produce gas and its subsequent purpose in the large scale production of steam for the industrial reciprocating engine.

Prof Sharpe also explained Trevithick's principle of 'artificial cold' and how it is used

today without CFC's to cool aircraft cabin temperatures. He said of Trevithick, "We owe him an immense debt of gratitude for his pioneering concepts and embodiments."

Two generations of success with the practical application of steam to road transport in Australia and North America were recounted by Mr Ted Pritchard, FMTC, of Melbourne. This is leading to renewable energy projects in developing countries where crops are grown specifically to fuel small, efficient steam powered electricity generators.

Roger Waller, Dipl Ing, enthralled everyone with his amusing account of the very effective re-steaming of several Swiss railways to replace diesel and diesel-electric engines. Not only did they prove more economic to operate but they had the all important charm factor that attracts extra customers. During his paper he gave a number of other examples where modern steam out-competed modern diesel engines on rails and on water — namely a paddle steamer on Lake Geneva.

A very important lecture was given by Jack Metz, Dipl Ing, who explained the EZEE 03 zero emission steam engine. Designed in

Berlin and now undergoing development and testing in Michigan, US, this compact, economical engine heralds a new age in vehicle propulsion. However, Mr Metz spoke of the entrenched attitudes towards change and cautioned, "Do not attempt to sell anything to the motor industry!"

Dr Alec Moulton, known for his cycle and BMC Mini suspension system, spoke of his many years of work with steam and his association with such notables as Abner Doble in America. "Whatever you do" he advised, "do not forget that steam can provide a great deal of fun!"

Another paper was given by John Tilston, F.Inst.E, on the activities behind closed doors at DERA, Farnborough, concerning micro-air vehicles — tiny tea-plate sized aircraft powered by miniscule hydrogen peroxide jet engines being developed for reconnaissance work.

After the plenary session the fun was provided by Mr Eric Hughes from Co Antrim with his steam car 'Freddie'. "I've had twenty years of fun with steam" he told delegates as his little car performed impeccably on the hill within the college.

At the AGM of the Trevithick Society the chairman, Mr Clive Carter, recalled what an exceptional year 2001 had been. In addition to its usual activities the society has completed the building of the Trevithick 'Camborne Car' replica, displayed it all over Cornwall this summer and held the successful Se-Tech 2001 Conference.

On Saturday evening many delegates and speakers from the conference joined the members of the Trevithick Society at their annual dinner in the Green Lawns Hotel.

After dinner the Four Lanes Male Choir entertained with a fine evening of song including 'Camborne Hill' and 'Trelawny'.

Next day was European Car-Free Day but it was celebrated in Falmouth by a parade of steam in anticipation of the time when cars will be welcomed for being emission-free.

A large crowd followed the cars, led by the 2001 replica, to Falmouth Docks where they performed for the delight of the crowd.

Thanks to Ivor Bowditch, Ken Brown and Charles Thurlow for manning the Parkandillick engine on the Sunday afternoon of the AGM weekend. The

donations were collected for the Treliiske Hospital Oncology Unit "Sunrise" appeal.

Another bonus of the conference was that the Society gained fourteen new members.

This conference demonstrated that high pressure steam has a great future. It is significant that its use started here in Cornwall 200-years-ago and through the vehicle of Se-Tech we have shown that Cornwall has a part to play in its re-development, and could have an active role in its renaissance. The opportunity is there.

So that the objection (or support) for various planning applications may be co-ordinated would Society Members please send to the LGLC Member a copy of any letter they send to the local authority and advise any other information they have so that the Society's case may have the maximum strength. Combined and co-ordinated approach is the most likely to

LOCAL GOVERNMENT LIAISON cont..

succeed. Don't keep it to yourself!
The LGLC members are:

<i>Caradon & West Devon C&WDD</i>	
John Badger	01752 786398
<i>Carrick</i>	
Phil Corbett	01209 890897
<i>Kerrier KDC</i>	
Kingsley Rickard	01209 716811
<i>North Cornwall NCDC</i>	
Vernon Baldry	01209 822311
<i>Penwith PDC</i>	
Peter Joseph	01736 364619
<i>Restormel RBC</i>	
Charles Thurlow	01726 73882

BOOK REVIEW

Cornish Engineering 1801-2001: Holman: Two Centuries of Industrial Excellence in Camborne. Clive Carter. 2nd edition published by Trevithick Society ISBN 0 904040 53 4, pp. 110. Many photographs. Softback £9.99.

There is little doubt that Clive Carter is the ideal person to write a history of Holman Brothers, the great Camborne firm of engineers. He worked there, mostly in PT, for several years, and members of his family were also 'Holman Men'. Clive details the early history of the family, who moved into the expanding mining-engineering locality of Camborne-Illogan in the first half of the eighteenth century. William Holman, father of the firm's founder, Nicholas, became a mine blacksmith, and in 1772 the family moved to Pool, in Illogan Parish. A year earlier, Richard Trevithick had been born 100 yards away at Penherrick Vean. Nicholas, born in 1777, was to become a firm friend and colleague of Trevithick. In 1801, Nicholas Holman followed in his father's footsteps and set up his own foundry and smithshop at Pool, and before long was making great boilers for mine engines.

Thus, was the international company of Holman Brothers established, and within decades there were boiler works, foundries and ancillary businesses all over Camborne. The book details the astonishing success of generations of Holman boys, who worked hard, treated their men well, were amazingly creative and innovative, international in their exporting outlook, and trend-setters with respect to new technology. By the end of the nineteenth century Holman rock drills were world beaters. This continued to be so until the last decades of the twentieth century. Holman development of compressed air machinery, and eventually to the most advanced compressors — machines which can still be seen throughout the earth in the remotest corners — was due to their foresight and business acumen. It was also due to the array of skills their workforce had at its

disposal.

The enormous expansion of the factory space and workforce during the twentieth century, coping with war conditions between 1914-18 and 1939-45, the large numbers of women employed to replace the fighting men, the involvement of the firm in inventing and making such innovative weapons as the Holman Projector, and a score of other fascinating parts of the Holman story are all dealt with by the author with skill and humour. He has a genuine feel for the atmosphere and crack of the place. As a Camborne man who followed so many of his relatives into the foundry he obviously misses the great times.

Finally, Clive deals with the crucial part played by Holman's and its former apprentices, in the construction of the 2001 replica of Trevithick's original road loco—the first motorcar. The story of the replica is also an inspiring one, which, like the Holman story, covers two-hundred years of Camborne history.

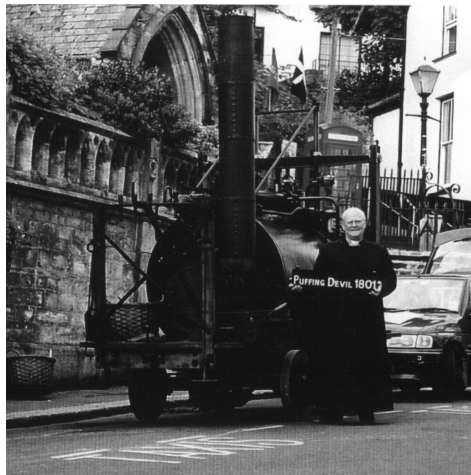
The typing errors do not detract from a truly enjoyable book. Williams Shaft reached 3000 feet in 1910, not 300! The raise referred to on page 23 went up 300 feet, not 300 fathoms! The Charles Thomas mentioned on page 22 was Josiah's brother, not his father — he had died in 1868. Both Rogers Lode and the Tolgus Tunner run east-west, not north-south; it goes nowhere near Illogan churchyard, although many of the men who used Holman machines to drive it, ended up there!

This book is well worth reading. It is extremely well written, full of fascinating facts and anecdotes, and, considering the mass of historical detail, is very easy to read. The author has a gift for bringing narrative alive and grabbing the reader's interest. The price of £9.99 is a gift. This must be one of the best value-for-money books currently in the shops. Buy it, you will not be disappointed.

JAB.

TREVITHICK 2001 PROJECT

On the Sunday morning of the AGM weekend, the engine proved of much interest to the congregation assembling at the Parish church, and as was said to the preacher "today you can truly say that the devil is standing outside your church!".



The Royal Cornwall Show gave an opportunity to show off the replica and to advertise the work of the Society. The first day was beset by poor weather and the number of visitors was understandably low. The following day more than made up for the frustrating day of the wind and rain, for large crowds saw the engine in motion



A QUIET MOMENT ON THE SOCIETY STAND AT THE ROYAL CORNWALL SHOW

within its pen.

At the Carnhell Green Rally the engine won the President's Cup for finest steam engine on show.

Tuckingmill Fun Day saw the replica lead a procession of brass band and children dressed as miners and bal maidens through the streets from Holmans factory to Tuckingmill Church Hall, where it steamed in stationary mode.

Since its first appearance the engine has appeared at 19 events and steamed a total of 32 days. A very good summer indeed.

The purchase of a trailer for the engine is still being investigated.



BRIDGNORTH HAZLEDINE RASTRICK TREVITHICK PROJECT

In order to mark the bicentenary of "Catch me who can" in 2008 a public meeting is being held in the Town Hall, Bridgnorth, Shropshire on Thursday 15th November at 19.30. All are welcome.

Any suggestions, offers of help, etc. would be much appreciated.

I am writing a book on Richard Trevithick and Bridgnorth, including "Catch me who can" and the Peruvian adventure. Any help, or contributions, are most welcome and will be acknowledged.

**Christopher
Magner,**
21 Dunval Road,
Bridgnorth,
Shropshire,
WV16 4NA

LEVANT REPORT

Levant has been the venue for several functions and ceremonies over the past 18 years and Friday September 14th 2001 saw yet another, but rather special occasion. A surprise party was held to honour and celebrate the 80th birthday of our leader Milton Thomas.

Much planning and secrecy was necessary and I am pleased to report that everything went precisely according to plan — a credit to all involved in making it such a special day for Milton.

By arrangement with his son Stephen, Milton was brought to the engine house on the pretext of a casual visit. I persuaded him to accompany me to the electric winder house to examine a “recently discovered” cylinder bed stone. On entering the winder house Milton was greeted by about fifty hidden friends and guests all associated with Levant over the years. It was a total surprise leaving him completely overwhelmed.

A few speeches and formalities then the party began with pasties, punch and birthday cake. The “cylinder bed stone” was in fact a cake made and exquisitely decorated by Beryl Langsworthy, complete with cracks and holding down studs!

It was wonderful to see so many past and present “Levanters” gathered to honour Milton.

Special mention must be made of representatives of the original painting gang dating from 1983, namely Bill Newby, Dennis Jenkin, Michael Ladner and of course myself and Milton.

Our thanks are extended to Ron Flaxman, who arranged and organised the proceedings in great secrecy. Beryl Langsworthy for the cake and, together with husband David, the punch. Also Beryl for the hand painted birthday card signed by all present, and to Lindsay Bremmell who painted the engine house scene presented to Milton.

Finally, thanks to all who attended and to the volunteers who made the winder house so clean and presentable.

In the annals of Levant, a very special day

indeed.

Tom Barr.

To All Volunteers at Levant Mine

The Trevithick Trust has enjoyed working with the Volunteers and the Staff at Levant Mine over the last few years and we believe that the site has significantly developed over this time to become a major tourist attraction. The Volunteer input has been vital and has developed many new projects, together with landscaping and consolidation work carried out by Cornwall County Council.

I must congratulate you all on what you have done in the development of the site and the restoration of the engine, which was a most difficult task.

However, with great reluctance The Trevithick Trust has decided that it cannot continue to manage Levant Mine now that the management of Geevor Tin Mine has passed out of its hands. From 1 November 2001, therefore, the management of Levant will revert to the National Trust, but The Trevithick Trust will not forget Levant as it is now playing a major part in developing the World Heritage Site bid for Cornish mining, in which of course Levant was a major player.

Stuart Smith.

All members are reminded that their subscriptions are due on January 1st 2002. The late payment of subscriptions may

2001 SUBSCRIPTIONS

mean that Newsletters and Journals are not posted to you.

Paul Smith.

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BOOK REVIEW

The Kalmeter Journal. Translated from Swedish and edited by Justin Brooke. Published by Twelveheads Press, pp.80, 19 illustrations. Casebound £19.50. ISBN 0 906294 45 2.

Henric Kalmeter was an early 18th Century Swede who had travelled widely in Britain and became an official representative of the Swedish Department of Mines. In 1723 he was instructed to return to Britain, with the Department's support, to report on industrial developments. This is a fascinating record of early 18th century industrial espionage.

The text of the journal has been carefully translated from the Swedish by Justin Brooke, an Affiliate of the I.M.M., whose knowledge of the language has made this fascinating account accessible to the wide audience it deserves. The book opens with an account of who Kalmeter was, and his position in Sweden. It details the reasons for the visit to Britain, and includes an assessment of Kalmeter's character - his reluctance to go underground in the St. Just mines is noted! The visit records a round trip from Bristol to St. Just via Boscastle, Plymouth, Exeter and Taunton. A detailed map of this journey forms the frontispiece of the book.

At the time, Britain was of much interest to foreigners; great advances were being made in mining and industry and the foundations were being laid for the country to become a superpower.

The journal reported on the countryside and towns, but concentrated mostly on the varied industries. Wool, weaving, fishing techniques and shipping movements — both coastal and international — are examined. Most extensively investigated and of the greatest interest is the description of mines, mining and smelting techniques and machinery. These were noted in great detail, for example recording the number of teeth in the cogs of machinery. Some interesting sketches are reproduced and it is a pity that Kalmeter did not draw a greater number of his observations. He was able to “get into”

many sites, but the copper smelters at Hayle appear to have been less pliable: he only notes an outline of the process used.

Tin blowing and smelting coverage is revealing. Included is a description of blowing furnace design which does not agree with many other later descriptions, for example Pryce in *Mineralogia Cornubiensis*. However, it does agree with that deduced after careful examination of old sites, and used with considerable trepidation by this reviewer in his work on tin blowing for the Historical Metallurgy Society. This gives us confidence in the reliability of other information on techniques in the Journal.

The mining and smelting chapter investigated covered tin, copper, lead and antimony. Valuable supplementary information is the description of the various weights and measures used: a topic with implications that have frequently been overlooked by researchers of mining valuations.

The book is printed on high quality gloss 'art' paper, but the typography and layout do not do the contents justice. The shape of the volume (23 cm X 23 cm) is awkward. The text is photocomposed using a light sans serif typeface, resulting in similar tiresome problems as occurred with the Transactions some years ago. There is an index of names and another of subjects.

The contents and the care taken by Justin Brooke, however, shine through so that the book is a most valuable addition to a library for mining research.

BE.



TREVITHICK SOCIETY EVENTS AND CONTACTS

NOV 16th — CSM

Holmans of Camborne. By Clive Carter

NOV 16th — East Cornwall

Early uses of China Clay, Adulteration or Improvement. By Charles Thurlow

JAN 18th 2002— CSM

The Bebington Collection, Part One.
Slides—A variety of views.

FEB 22nd—CSM

The Bebington Collection, Part Two.

*Meetings are held in the Lecture Theatre,
Camborne School of Mines at 7pm.*

*East Cornwall Branch meetings will be held
at the Public Hall Complex, Liskeard 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.

Subscriptions 2002:-

Single members	£15
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