

THE TREVITHICK SOCIETY

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Edited by Colin Yelland, 'T'reireifel', 45 Chough Crescent, St. Austell

Douglas Harris

The death took place at his home in Camborne on 1st December, 1979 of Douglas Holman Harris, at the age of 58.

Douglas had been a member of Council of the Society for many years and, despite poor health, he was always one of the most enthusiastic and helpful members. In particular he was one of the main organizers of the Trevithick bicentenary celebrations in 1971, and one of the prime movers in arranging the service in Truro Cathedral, making the first approach to the Dean. He also did much of the organization and invigilation for the exhibition which was held in the School of Mines. Amongst other practical work for the Society, he undertook the completion of the Mitchell 80 drawings which have been sold to members and others for many years. Douglas also carried out most of the design work on the electric drive for the East Pool Whim, installed by the National Trust. More recently he supervised the drawing work carried out at the Science Museum by a Holman apprentice on the Trevithick locomotive. He was one of a small party which undertook practical work dismantling the dipper wheels and round frames at Tuckingmill.

Early this year he underwent a major operation, but he still did all that he could, including helping with a stall run by the Society at St. Just in August. An article that he wrote recently on Freeman Saunders, a diesel engine pioneer with whom he worked for some years in Penzance, will be published soon by the Society.

Douglas had been at Holman Brothers, Camborne for most of his working life, having served his apprenticeship there. He was a senior design draughtsman working on compressors - one of the last links in the Design office with the well known range of reciprocating compressors.

He will be greatly missed by the Society and by his many friends.

J. H.

SOCIETY NEWS

At its meeting in December 1979 the Council of the Society received the report prepared by the Sub-committee appointed to consider the role of the Officers of the Society and the appointment of new Officers as necessary; the most pressing problem being the appointment of the replacement for Alan Pearson as Hon. Secretary. The Sub-Committee (Paul Stephens, John Stengelhofen and Dennis Jenkin) had met in November and had reviewed the membership records to narrow down the membership to those though likely to be able to accept nomination. At the same time the role of each of the Officers of the Society was considered and it was felt desirable that in future the Hon. Secretary's burden could be lightened by the appointment of a separate Minutes Secretary to take minutes of the Council meetings and subsequently to prepare and circulate them separately from the Hon. Secretary.

It was felt by the sub-committee that the Society is fortunate in having Mr Marcus Trinick and Mr Rodney Law as Treasurer and Chairman and hoped that they would be able to give continuity to the Society for many years to come. The Council considered the suggestions of the sub-committee for the post of Hon. Secretary and will be hoping to make a definite decision at the meeting of the Council in January, 1980.

The other matters to be considered by the Council included proposals to change the format of the newsletter, and the various other publication projects of the Society. The 1979/80 Journal is with the Printers and the Council hope that it will be issued early in 1980. It will contain a long article by Mr Trounson on a visit around Britain in 1938 visiting engineering sites of interest, Nigel Tangye's Cornish Newspaper finding list and an article on Richard Trevithick as the inventor of containerisation.

It was reported to the Council that the booklet forming the bound article on "Industrial Housing in Cornwall" and the second volume of bound newsletters could also be made available early in 1980 as both were with the Printers and ready for printing.

Mr Bullen reported on the continued negotiations with Wendron Forge for the future of the Society's exhibits formerly at Holmans Museum and it was generally felt that it would be possible to come to an agreement with Wendron Forge satisfactory both to them and our Society. Mr Marcus Trinick had kindly been preparing a draft form of agreement which was now substantially agreed.

Under the heading of "Any Other Business" various matters were raised. Firstly Mr Jenkin and Mr Earl had been asked to investigate the state and ownership of the Capstan House at Sennen which had been raised by Mr Allen at the previous A. G. M. It was hoped that this matter could be dealt with early in 1980. Mr Stephens raised the matter of various water mills, in which correspondence had reached him from local authorities and the Cornwall Committee for Rescue Archaeology. It was also revealed that the Science Museum Library had been successful in purchasing Trevithick Letters sold at auction at Christie's on the 24th October 1970. It was hoped that the Society might have an opportunity of publishing some of the previously unknown letters in a future issue of Journal

A. A.
A. I. A. NEWS

In the months after the A. I. A.'s annual conference in September of each year it is normally a period for taking stock of views received and requests for action made and responding to them. This year has been no exception with the A. I. A. Council considering the proposal made at the A. G. M. for affiliation of local societies. The Council has decided in general terms that it sees advantages for both local societies and the A. I. A. in having such a scheme of affiliation, although it would not be in favour of such a scheme entailing voting rights. The Council seeks the views of local societies, A. I. A. members and other interested and related bodies in preparing a package of proposals to be put to next year's A. G. M.

Other projects of interest to our society may include the proposal for special interest groups, which is being over seen by Prof. Walter Minchinton of the Department of Economic History at Exeter University. There was a proposal for a Cider group, and now one for the chemical industry. It may well be however that A. I. A. members who are also members of the Trevithick Society may care to consider and propose groups related to industries which have been active in Cornwall.

The role of the AIA in education continues to receive attention and a conference has now been arranged for March next year at Aston and the education group will contribute a distinct section to the A. I. A. Bulletin which will be devoted to education matters.

It was agreed that note should be taken of the comments at recent A. G. M.'s that insufficient time was available for detailed discussion. Attempts will be made to arrange in the 1980 conference programme one or more periods for detailed discussion whether this is a direct extension of the A. G. M. or not.

Growing up in Chacewater in the 1860s and 70s.

During the sixties and seventies of the last century there grew to manhood a Chacewater boy who was to become an almost ideal illustration of the West Briton's lament in a contemporary edition that Cornwall was losing by emigration "the very bone and sinew of the country". Commencing in the 1830s emigration in numbers continued for the remainder of the century and in the 60s and 70s reached its peak. In the first six months of 1875 over 10,000 Cornish left for Australia alone.

Alfred Nicholls, was born on May 3rd, 1861. He was the sixth child and fourth son of William and Mary Nicholls. Another son born in 1863 completed the family, William Nicholls, the father, originally from St. Agnes, was foreman blacksmith at Nangiles Mine. He worked in the same shop for forty years and throughout that period never lost a day's work through sickness. He neither drank nor smoked and was a man of strong religious conviction. In his autobiography written for his family Alfred Nicholls describes his father as "a man of few words, but a good listener. How-ever he could talk intelligently if it were the honorable thing to do". The mother, Mary, a Northey before marriage, was a great deal more out-going than her husband. She enjoyed a chat with friends and neighbours, she had "a loving disposition and agreed with most people generally for the sake of diplomacy. She had such a kind tone in her voice, and a smile benevolent and tender, thereby completing an en-dearing personality." Alfred also wrote of his mother "I do not remember an instance when she sat at the table with us. She insisted on serving her flock, attending to their needs, and they were many - the hungry mob."

I have suggested Alfred was an example of the finer type of Cornish emigrant, equally the family was an example of the strongly Methodist-motivated mining family involved in the great 19th Century dispersal of the Cornish. Most, if not all, of the sons left Cornwall; at least three, of whom Alfred was one, migrated to the United States of America. They were a close knit family destined to be split asunder by a situation they were powerless to avoid which eventually left the mother alone in the small house that had been the family home from the day the parents were wed.

It is almost certain the home was what is now the first cottage in New Row, the original name having survived the minimum possible age of a hundred and forty years. In the days of the Nicholls' occupancy it was the second, one having been demolished since. William Nicholls owned the first three, the first now being the second and third at that time.

At the age of four Alfred attended a "Dame School" in the village. There for onepenny a week he was taught the alphabet, "forwards and backwards" by Alfred's account, the first steps of writing and how to cipher. Although Alfred's mother could not read or write she evidently was not pleased with her son's progress and the School was exchanged for another costing three-half pence weekly. The curriculum was much the same but for the extra half penny the second seemed to offer considerably more sophisticated punishment. At the first it comprised of banishment beneath the stairs in what was called the "spence" whereas the second offered various sizes in dunce caps and for more serious offences a selection of "paddles" for physical chastising.

Some months later there was a further change, this time to the National School. I think it probable the National School required pupils to be five years old and Alfred had reached the requirement. Unfortunately the Headmaster was a martinet who wielded the cane mercilessly. Eventually Alfred found himself in the line of those awaiting the headmaster's award. During the caning Alfred's finger was split. This was one of the rare occasions when his Mother did not agree for the sake of dipolmacy. Before very long Alfred once again changed school and attended Baldhu Church School where he was happier even if it meant a two mile walk in each direction.

Just before Alfred's tenth birthday his older brother John arrived home one evening with the news that he had found a job for his younger brother. Schooling was over for the boy and he went to Wheal Jane to work in the stamp mills. This early start to earning ones livlyhood seems to have been the usual practice for in Alfred's case his earning capacity was not necessary to the family's needs. William Nicholls earned sufficient for the family to live quite well for those times.

Setting out at 6am in order to walk the three miles to Wheal Jane at 1am Alfred, not yet ten years old, started his ten hour stint broken only by a midday half hour for "croust". On completion of his labours there was another three mile walk home, His duties at the stamps mill, if not heavy, were decidedly tedious

A bal maiden, having half filled a keeve with water by bucket, would then add shovels full of crushed ore. During this period a man would be vigorously stirring the contents of the keeve. This done it was Alfred's job to hit the sides of the keeves ("large wash tubs" was Alfred's description of the keeves) with a mallet in order to speed the settling of the contents. It is hard to imagine a more unfulfilling task for a bright lad of ten. The work was in the open and during the winter the boy suffered badly from chapped fingers and hands. The remedy for this seems to have been a rather desperate one. Shoemakers' wax, melted by a candle flame, was dropped into the painful cracks. Maybe the theory was similar to the notion that effective medicine had to be distasteful, successful treatment had to be painful.

When Alfred reached thirteen it seems the pounding of the sides of the keeves with a mallet was not thought a sufficient contribution to the fortunes of Wheal Jane from a lad of Alfred's years. He, with three other boys, were given the extra duty of operating a calciner at night on a rota basis. Every fourth night, immediately after completing the day shift, the lad would go to the calciner, operate it through the night, then return to the mill for another day shift. This effectively meant a thirty six hour stint. In addition to a payment of one shilling for the twelve hour night shift there was the further concession that such time as was not needed to attend to the hourly requirements of the calciner might be slept through. A board strewn with heather was provided for this. A permanent night shift man, who worked an adjoining calciner, would rouse the boys for their hourly task. Alfred's autobiography recalls the dreaded intrusion of the call "Alford, Alford" into his slumbers bidding him to attend to the slowly revolving tube, about twenty eight feet long and five in diameter in which the crushed ore was roasted over a fire to remove impurities. The final removal of the processed material released sulphuric fumes described by Alfred as "terrible". Apart from the shilling for each night worked the biography does not divulge the wage his toll was rewarded by. In general the average wage for mine workers had yet to reach £4 a month.

When Alfred was fifteen years old he obtained a situation at Wheal Peevor a mile nearer home but on the opposite side of Chacewater to Wheal Jane. In securing the job at Wheal Peevor, Alfred had greatly improved his circumstances. His efforts were better rewarded, his work more worthy and responsible and he came under the control of Cap'n Walter Sweet, a much older man but one with whom he became a close friend. Alfred particularly mentions the confidentiality of their conversation and I feel that Walter Sweet was the principal influence which prompted Alfred's eventual emigration. Alfred progressed rapidly at Wheal Peevor and deputized for Cap'n Sweet who was responsible for the final refinement of the metal. The Superintendent of the mine had assured Alfred that Cap'n Sweet's position would be his in due time. Such a prospect for a young man in the late 1870's would have been thought of as excellent. I fancy it would be Walter Sweet's guidance that decided Alfred not to accept a future with Wheal Peevor.

Throughout his growing up the real influences in Alfred's life were his family, the Primitive Methodist Church and music. Much of the last was associated with the Church. All the family were connected with the church and its choir and the father and sons also played wind instruments. Chacewater Primitive Methodist Church possessed notable musical abilities at that time and there was considerable rivalry between the two Methodist churches of the village. Although the Primitives had acquired a pipe organ they still retained the instruments which had hitherto accompanied the singing. Alfred pumped the bellows of the organ as his first contribution to the music of the church and especially enjoyed the extended anthems of Christmas adding an unofficial voice to swell the far from inconsiderable volume of the Church's full musical forces. While at Wheal Peevor Alfred played the euphonium in a band that fulfilled some thirty engagements in the year, practically all Sunday School picnics.

On the day following his nineteenth birthday, about twelvemonths after his father's death, like so many of his contemporaries Alfred left his mother, his home and much else that was dear to him for the Land of Promise as many saw the United States and as his train travelled towards Truro saw the last distant view of his Cornish home for sixteen years. In 1896, not long before his mother died, Alfred made his one return home.

In comparison with the general conditions prevailing for Cornish mining families during the 1860s and 70s the Nicholls family were better placed than most. Unfortunately the autobiography Alfred wrote for his sons and daughter says little concerning these general conditions. This is understandable for in writing his autobiography Alfred had only his family in mind and they were all American citizens. Alfred had taken out his first citizenship papers six months after arriving in America.

In the absence of such detail in the autobiography together with no reference to the reasons that persuaded Alfred's emigration, all that can be concluded as they were not ones of sheer necessity as they were with so many. Emigration had been continuing since the 1830s, and very heavily since Alfred's birth in 1861. With so many emigrants having been successful it might have been seen as the obvious course for those who wished to better themselves. They had practically no hope of achieving this in Cornwall.

Whether it was ambition or the influence of Cap'n Sweet or a combination of both that decided Alfred to leave Cornwall for America can only be speculated upon.

In those sixteen years a promising start to life in the New World Alfred met with disaster and out of it Alfred created a triumphal success he would never have been able to achieve had he decided against leaving Cornwall. However that is another and longer story.

Harry W. Tregilgas

Richard Trevithick and George Stephenson

Next year sees the 150th anniversary of the opening of the Liverpool & Manchester Railway, to which will be strongly coupled the names of George Stephenson and his "Rocket". I would not wish to belittle Stephenson's achievements but, as at the time of the Stockton & Darlington Railway celebrations four years ago, I cannot help wondering how much Richard Trevithick had to do with all this.

Trevithick's experiments with road and rail locomotives did not have a continuing success and can only be regarded as stepping stones at the beginning of the path of evolution but how much did Stephenson know of these? The Newcastle locomotive was built in 1805 at Gateshead for use at Wylam Colliery. Stephenson was born at Wylam in 1781 but in 1805 was living at Killingworth, some 10 miles from Wylam, and it would seem most likely that a man of his nature and interests would go to see the new engine, either at Wylam (if it ever got there) or at Gateshead. I have seen no direct evidence that the two men met but, in 1827 when Trevithick and Stephenson's son, Robert, then aged 24, met in Cartagena, Colombia, eye witnesses report that Trevithick referred to meeting Stephenson, and nursing the infant Robert. Doubtless this would have been in 1804 or 1805 when Trevithick was 34 and probably full of his ideas for high pressure engines, while Stephenson was 10 years his junior and becoming established as a competent mechanic of the steam engine.

How much they would have had in common! Both were largely self-taught men, hard working and with strong streaks of independence. How much early steam engine lore, not to mention enthusiasm, passed across the fireside one can only guess at, but from what we can read of the characters of these two great men, I feel the speculation is legitimate. Is it significant that many of Trevithick's ideas later appear in Stephenson's locomotives?

After the London "Catch-me-who-can" engine of 1808 Trevithick turned to other things and eventually left for South America. As he left the scene so George Stephenson entered to begin his climb to prominence and fame as the "father of railways". If Stephenson is the "father" I feel sure that this "parentage" was inspired by a Cornish "uncle" who gave freely words of wisdom and, if you will pardon the pun, put young George on the right track.

M. J. Messenger

Cornish Industry 100 Years Ago - Royal Cornwall Gazette

- 3/8/1877
- Materials for sale at Hall Mine - situate about 2 miles from St. Columb, the sett is held under Licence granted by W. B. Hoblyn on 1/18th dues. The Lease is for 21 years with a minimum annual rent of £25 merging in dues. Materials include engine angle bob, back balance bob, and 6" lift pumps fixed and ready for work.
 - To be sold - Bodella Mill, including dwellinghouse water grist mill and other outbuildings with 7 acres of land.
 - Report of sale of materials used in construction of St. Ives Railway Branch Line - (Page 1)
 - Wheal Prussia - opening one of the best lodes discovered in the district worth £60 per fathom in the 30 end west. Captain Tregay is in charge of the mine and the new shaft intended for an engine shaft is being sunk with all speed and is already down 8 fathoms.
 - North Bussy being well worked in a progressive manner. There is a large hard and productive lode at the addit level and Mr. Woodward the Purser has distributed a dividend of £1. per share. Stamps are kept constantly at work and the Copper is of a superior quality. The Agent is Captain Trevethan.
- and
- "Poor West Basset; poor unfortunate shareholders; poor despised purser, manager, and committee man, who has to pay from his pocket more than 1/6th of the debt as he owns 1,100 of the 6,000 shares; poor tin smelter and committee man, you too have to pay for your whistle, and on you auditor, engineer, and committee man are the heavens black with thunder, and the heaviest phials of wrath to be poured out. Yet no matter how heavily West Basset may be in debt these committee men have to pay as much if not more than three in-dividual share holders, and we cannot see the propriety of abusing them forever; it is no use to "brood over spilled milk." What as share holders we have to do is to make the call to liquidate the debt and as the bottom part of the mine is looking better we may yet again be blessed with a dividend ultimately".
 - Wheal Newton - inspected by M. Herbert of the Belgium Royal Mining Engineers who reports that the silver ground has a value of £30,000 only taking into account about 400 square fathoms. The accounts showed an available surplus of @14,100 out of which a dividend of 4/- per share has been declared, being at the rate of 80% on the paid up capital.
 - Mr. Charles Bawden solicits £10,000 in 5,000 shares to work Carnmarth Copper Mine.
 - Report- Page 6 - on pulverisers.
- 10/8/1877
- For sale - machinery at Great Wheal Vor United Mines, Breage, including 26" whim engine with drawing cage complete, with 12 ton boiler, 2 head pneumatic stamps, large turning lathe boring machine, screwing machine, punching machine, 2 pulverisers, calciner, tin hutches, buddles, etc.
 - Advertisement - (Page 1) - W. and E. C. Carne. (Brewers)

- Order in the Stanaries court for the winding up of Treverban Trevanian China Clay and Tin Company. John Henry Hamley to be official liquidator.
- Cornwall Minerals Railway - half yearly meeting held in London. Receipts had amounted to £10,062 showing a decrease of £794 compared with the corresponding half year of 1876. Working expenses were £7,015 showing an increase of £423. Net balance of revenue was £3,043 against £4,261 in 1876. Decrease attributed to the long continued strike of the china clay workers. Agreement with the Great Western Railway for the purchase of the Act of Parliament had only to wait the Royal Assent. A net income of £15000 a year, increasing to £18,800 per year, was secured for the company under this agreement. The prosperity of the Company would depend on the China Clay and Iron Ore traffic and in regard to the latter the arrangement to purchase the Cornish Consolidated Iron Mines Corporation had been completed by the purchasers who were preparing to work them, so that with a revival of the iron trade considerable additional traffic might be expected. £75,000 new preference stock (750 shares of £100 each bearing interest at 5% per annum) was agreed to be issued.
- Wheal Agar - Captain Moyle reports that during 1877 £2,300 worth of tin stone had been sold averaging £110 of tin to a ton of stuff. 30 men were engaged sinking and stopping. The works at the dressing floors were approaching completion and the tin would be returned on the mine and not carted to Bissoe, Helston, or Ludgvan
- Page 5 - letter from Mr David Stephens on pulverisers
- Tresowes China Clay Company Ltd - 116 tons sold and 300 tons more ready to be marketed. A new pit nearly 2/3 completed to take the clay water after passing from the other pits, whereby a 100 tons of clay yearly may be saved which had hitherto been lost.
- Report - page 8 - of half yearly meeting of Falmouth Docks Company
- 17/8/1877 - Cathedral tin and copper mining Company Limited - to be sold, portable steam engine, two balance bobs, capstan and chain, horse whim, wire rope and chain, 3 jiggling machines, bucking mills.
- Truro Gas works - Mr Robert Tweedy as chairman.
- Action commenced against the Native Iron Ore Company Ltd for £223 for breach of of contract with Messrs Sparro to supply them with a 1000 tons of iron ore. Only part delivered before winding up proceedings took place
- Treverbyn Trevanian China Clay and Tin Company Limited registered in 1874 with nominal capital of £16,000 in 1,200 shares of £5 each.
- Page 7 - defended action to have West Roskear Mine wound up
- South Great Work Mining Company - addition for winding up by Harvey and Co; mine was being worked on the cost book system down to the beginning of 1876 when the mine was divided into 2,290 shares. The petitioners held 200 shares.
- 24/8/1877 - For sale - machinery at South Carn Brea Mine, Illogan including 36" pumping engine, 24" winding engine, 30" stamping engine with 40 head stamps, 200 fathoms flat rod, 4 skips, 8 arm capstan, 200 fathoms iron stave ladders, 6 tons railway iron, 10" water wheel, jiggling gear, etc.
- Wheal Eliza mine - profit on previous 6 months amounted to £2,707, dividend of £2 per share, absorbing £2,048, was declared. Captain Williams reported that £10 profit was made on every ton of tin raised.
- West Wheal Eliza - half yearly meeting showed loss to June of £344 reducing the credit balance to £887. Captain Williams reported that development was still required.
- Unity Wood - beginning to draw materials to surface
- Treleigh Consols is preparing a small parcel of silver ore for the market, likely to find its way even from this mine into the Par or other Smelting works. -
- (Page 5) - practical test of pulverizers proposed.
- Medlyn Moor Mine opening of well under the control of Captain Joe Prisk. He has 30 men employed in exploring and a dozen men on tribute.
- Report - (page 7) - of Wendron mining district and tin streaming - "Cober river is being worked from Coverack bridges to the Looe pool. Mr. Dale working, and also parties at Lower town. The machinery is not on such a gigantic scale as at the red river, yet the streamers here know what machinery is best adapted to their work equally as well as the red river and Portreath parties. Editorial surprise that the owners of Looe pool, Messrs Gundry and Stephens, should not display more activity to work the pool. Only two pulverizers and a few frames then at work.

- Important judgement of the Stannary court relating to West Roskear. Also reports in respect of East Wheal Basset mining Company West Roskear, Boscaswell and New Chiverton Mining Company Limited.
- 31/8/1877 - For sale - machinery at the Providence mines, in Euny Lelant Parish, including 40" pumping engine, 30" stamping engine, 23" winding engine, 20" man engine, double acting 6' stroke, with fly wheel and wrought iron shafts, 8" horizontal engine together with tin leavings. The setts have about 15 years to run. The mines have sold since 1832 (the commencement of the present adventure) about £533,000 worth of tin and £58,000 worth of copper ore. Dividends of £113,820 have been paid against £23,000 total calls. Captain Holloway was the manager of the mine and Mr Edward Trythall the Purser in Penzance
- For sale - machinery at St Just Amalgamated Mining Company Limited including 46" engine, 36" engine, 24" winding engine
- Wheal Jennings - said not to have been sunk any deeper since the last working seven years ago, and even so tributors have raised 1000 tons of tin from it.
- In the Wendron district, Combellaack mine could show a balance in favour of the adventurers with tin in the past at £500 but in the future with tin at £48
- In the Bodmin district the majority of the iron mines have collapsed - Tretoil, Wooley and many others.
- Malberry pit - Captain Hamley in command. There are several large stamps being worked by water power, one wheel twelve abreast and at the principal stamps "We see one of the largest if not the largest wheel in the County, 50' high and 4' abreast. There is also a steam whim erected but which has not worked since the decline in the tin standards. The pit is being worked at a depth of 120ft as an open quarry. The stuff is trammed in wagons through a long tunnel, capsized into a very large pass from which it is trammed to stamps one of which is fully half a mile from the pit. The Proprietors are Messrs Martin of St Austell, Plymouth, and Wadebridge. Lamarrock Pit is also the property of Messrs Martin. When operations could not be carried on without a loss they let it to the miners at Tribute and have given them every facility.
- Report - (page 7) - Falmouth Gas Coal and Coke Company
- Special meeting of the Cornwall Minerals Railway - directors authorised to create and issue in the name and on behalf of the Newquay and Cornwall Junction Railway Company debenture stock to the aggregate of £5,350
- Page 7 - report of visit by the British Association to Phoenix and South Caradon
- 7/9/1877 - Sale of machinery at Spearn Moor (including Spearn Consols), in parish of St Just, including 30" stamping engine, 24" whim engine, 26" pumping engine, 18" whim engine with whim cage, tram road iron, tin leavings, etc. The setts have 13 years to expire
- Tin Croft meeting - labour costs for 7 months £10,646, bills £7,909, carriage £502, with others made a total of £22,892. On the credit side 8,186 tons of tin sold for £7,119, and the balance against the mines for the period £15,593. Captain Teague commented that Lord Robantes had received dues of £21,644 for an area of under 100 acres and that the mine had paid over £232,580 in dividends since he was connected with it. Captain A. James, chairman, stated that the mine made a clear profit of a £1,000 during the quarter.
- Carn Brea Meeting - labour costs for 7 months £15,524, merchants bills £16,383, carriage £171 making a total balance against the Adventurers of £36,725. 241 tons of tin sold for £9,698, in receipts of £10,701 showing a deficit balance of £26,024. Captain Teague stated that since he had been connected with the mine, during the past 6 years, £27,000 had been paid to the share holders as dividends and about £10,000 to Mr Basset as dues. It was stated that the Beaumont drill was giving entire satisfaction. Tin Croft was now considering acquiring one.
- Treleigh Wood - a little more tin sold recently; 10 tons recently in one month. The previous manager had been replaced. Only 30 or 40 hands currently being employed.
- Report - (page 5) - "mining and the telephone" experiment carried out at West Wheal Eliza mine near St Austell.
- Fatal accident - page 7 - West Cornwall Railway on the Angarrack viaduct.
- 14/9/1877 - For sale - Delank Quarries about six miles from Bodmin leased by Mr Charles Goodyear, by whom the quarries have been partially developed. Granite had been supplied for the Thames embankment. Cranes and other machinery to be taken at valuation.
- Machinery for sale at Old Treburgett silver and lead mine, St. Teath, including 50" pumping engine, 24" crusher, 3 ten ton boilers, winding engine, several jiggling machines, water wheels, Whims, tram waggons, etc.

- Wheal Grenville - since December 1875 when "the old executive were kicked out" £18,000 has been called up but it looks to be one of the "our best progressive mines". The mine sold 14 tons of tin as the produce of one month. The heavy parts of the new engine are fixed in their places.
- Unity Wood engine was stopped last week and the materials are being brought to surface.
- Report - (page 7) - on pulverizers from N Holman and Sons of St Just
- (Page 8) - Advertisement - Nankivell and Co, Brewers, Truro
- Letter (page 5) on the necessity to replace the Moores Water Viaduct at Liskeard
- Wheal Kitty - Captain Teague was manager and reported last four months working showed an adverse balance of £8,00. The Lords had received £111 as dues on sales of £2,457 (63½ tons of tin). Reported that if the mine were closed at once the liabilities would be only £2,000. £30,000 to £40,000 has already been distributed by way of dividends.
- Combellack - "the mine is getting into something like ship shape order and the surface arrangements for dressing monthly parcels of tin are assuming a different character. The mine as improved at the deeper points."
- Medlyn Moore - the driving of the upper levels has been suspended as there is insufficient tin to meet the costs. The shaft is being sunk below the 27 level. There are 30 tributors now at work.
- Wheal Agar - a balance against the mine of £5,419 and a call of 10/- shillings per share was made
- West Godolphin - The new engine will be at work in a week or two. At present there are 80 WORK men, but a few have recently been discharged. The mine does not yield more than 12 cwts of tin per fathom, but is comparatively shallow. Last week the water rose to the back of the 60.
- Holmbush - 28 stopes are worth an aggregate of £525 per aggregate fathom and 120 men are engaged on stoping alone. The lode has been intersected at the 60 fathoms level.
- Long reports (page 5) on West Chiverton and East Chiverton
As to West Chiverton accounts showed total receipts of four months for lead amounting to £6,471, for blended £3,394, in total of £10,086. 5 months labour costs amounted to £6,248, merchants bills £1,677, in total of £8,446; leaving a profit of £1,639. There was an overdraft at the bank of £3,465. Reported that there had been two serious breakages in their machinery, one at Hawkes Engine. Repairs were completed and the mine in fork within seven days of the occurrence of the accident. The main or batters shaft was being sunk as quickly as could properly be done to the 170 fathom level. Captain Southey, the manager, reported. Mr Hocking, engineer, reported that the main link between the piston rod and main beam at Hawke's Engine had broken. Messrs. Williams Perran Foundry Co. put the whole force of the establishment upon the work and the new part was delivered within 5 days and nine hours. As to East Chiverton - said to be the same body of shareholders was producing very pure ore from the 74 fathom level. The assay shows 80 to 82% of lead and a yield of 18 to 20 ounces of silver to the ton. There was a balance of £839 against the mine. The lode was altogether about 3 feet wide.
- 28/9/1877 - Levant - accounts for the 4 months ended showed expenses of £4,312 and receipts of £3,599 - a loss of £712. Balance now against the adventurers was £1,618 and a call of 6/- per 1/2500th share was made.
- (Page 5) - report on attempt to change the management Wheal Grenville Mine - said that the South Condurrow Adventurers seeing their lodes running into Wheal Grenville Mine wanted to get their hands on to this very valuable property. Anonymous attacks have been made on the committee of management whom local cornish adventurers believed were working the mine admirably with the help of Captain Hodge as Agent. The committee was supported by 4,577 proxy's out of 9,100 shares. Statements of accounts for the 12 weeks to 14th of July was £4,313, including £90 to Wheal Agar for a second hand engine. The credits amounted to £2,149 showing an apparent loss of £2,164. Agreed to make a call of 5 shillings per share.
- Report of 3 monthly meeting of West Basset - (page 7) - reserves of tin above the 164 fathom level estimated at £116,104. Up to now the mine had been almost entirely copper producing, producing profits to the amount of £180,000. Returns are now 55 tons of tin per month. New stamps and floors have cost £1500, remodelling and extension of the old stamps and floors £1200, opening out the mine at the great flat lode and putting the underground portion into working order £10,000, providing new boilers and repairing old machinery £2,000

- 5/10/1877 - South Roskear - Captain Hosking is engaged in setting two boring machines at work, one in sinking a shaft and the other in cross cutting the lode. The electric telegraph has here been substituted for the ancient "knacker line". The first communication was made last week and so far the trial has proved satisfactory
- Production at the last ticketing held at Redruth:-
- | | | |
|--|---|----------|
| West Wheal Tolgus | - | 340 tons |
| Mellaneer | - | 303 tons |
| South Wheal Crofty | - | 135 tons |
| West Wheal Seaton | - | 124 tons |
| East Poole | - | 73 tons |
| West Basset | - | 60 tons |
| Great Crinnis and Carlyon Consolidated | - | 52 tons |
| Carr Brea | - | 51 tons |
| Wheal Eliza | - | 59 tons |
| West Poldice | - | 27 tons |
| Penstruthal | - | 20 tons |
| West Godolphin | - | 18 tons |
| Wheal Unity Wood | - | 11 tons |
| Wheal Grenville | - | 9 tons |
| West Wheal Eliza | - | 7 tons |
| East Basset | - | 6 tons |
| Poldice | - | 3 tons |
| New Hendra | - | 3 tons |
- Letter - page 7 - pulverisers.
- Kit Hill Tunnel - a company being formed with capital of £25,000 in £5 shares of which Mr. Stephen Henry Emmens of Kinston House, Brixton Rise, takes 1/5 of the shares and is to be Managing Director at a salary of £100 per annum and 5% upon the amount of interest dividend or bonus distributed. Mr. Miller is the first local director at a salary of £150. The object is to drive a tunnel right through Kit Hill - the first in the united kingdom for mining purposes. This tunnel is not only for draining the adjoining mines but to drain the whole area of Kit Hill and to intersect the 27 well known and clearly defined East and West lodes. The tunnel has commenced to be driven both on the north and south sides by 6 men in each end. Two rock drills will shortly be at work, and it is thought that the task will take about 2 years to complete as the tunnel would be 2 miles long. This level will prove some of the lodes at a depth of over 100 fathoms. Mining Companies at Kit Hill shall pay a yearly rental of 5% on the paid up capital and in addition to this the tunnel company is to receive a royalty of 1/10th of all the profits derived from the various lodes intersected. The mine is to be under the supervision of that man who after the serious reverses and bitter opposition brought Red moor, Greenhill, and Holmbush to be successes and giving dividends at the rate of 13% per annum. Wheal Newton also is one of the mines of Doctor Emmens.
- 12/10/1877 - Iron Ore production in Cornwall for the year 1876 amounted to 18,390 tons with a value of £10,566.
- An 80" cylinder engine due to be started at North Trescerby next week
- South Francs - meeting for 4 months to 25th August showed total expenses of £3,564, with credits amounting to £3,763 including 99 tons of black tin. The profit of £201 was retained.
- Rumours of proposed re-working of East Wheal Rose Mine
- West Godolphin Mine - 60" cylinder engine was started at the mine on Thursday last by Mr. Bennetts, the engineer, in the presence of Captain Pope, the manager.
- South Ale and Cakes - recently commenced by Captain John Main & Son is now stopped.
- Cargoll Mine - costs for 12 months amounted to £1,129. 18 tons of lead ore had been sold for £286 and the 3/- per share call made in July realised £502 leaving a balance against the Adventurers of £464. A further call of 5/- per 3,348th share was made. Total mine indebt is £1,709. The mine was said to be looking encouraging.
- Reports of mines in St. Columb & St Enoder District. Comments particularly on The Park of Mines and a recommendation given for trying the tin sett known as Toll Dish at St. Columb. Consisting of 70 acres with 3 east west and 3 north south lodes Captain W. H. Burke was the late manager. There had not previously been any machinery on the property, merely an adit level.
- Report - page 7 of Red River stream works giving details of numbers of Buddles, settling ponds, owners, managers, litigation and production.

- 19/10/1877 - For sale - machinery at Unity Wood Mines, near Scorrier Station on the West Cornwall Railway - 70" cylinder pumping engine with 3 boilers and 60' shears and 12 armed capstan, 200 fathoms 15" capstan rope, 500 fathoms steel wire rope, 20" cylinder double acting winding engines, 6' stroke, 2 iron stamps axles with 32 head stamps, buddles, floors, frames, 20' water wheel 18" breast, and another 20' wheel 2'6" breast; the pumping engine was considered one of the finest in Cornwall with duty being invariably above the average.
- 26/10/1877 - Wheal Owles - 16 weeks expenditure included labour £2,323, carriage £161, merchants bills £966, subsists £121, stamps rents £27, interest and commission £370, - total £3,971. Credits included tin sold (less dues) £3,500, subsist receipts £121, sundries £3 - total £3,572. The balance against the Adventurers at the last account was £23,121 and a call was then made of £2,000. The present balance against the Adventurers is £21,614.
- West Poldice - "it is rumoured that a quantity of water has accumulated in the shaft. It would have been a wise plan for the Adventurers here to have kept Unity Wood engine working."
- Report - page 6 - of East Cornwall and South Western Coach Company
- 2/11/1877 - Nangiles Mine, Kea - machinery for sale including 36" stamping engine with 2/11 ton boilers, 24" winding engine with 10 ton boiler, 36 heads of stamps with axle, shaft and whim kibbles, tram waggons, tram iron and bridge rail, horse whims, buddles dressing frames and floors. Details from Captain Rowe on the mine.
- East Wheal Basset - machinery and plant for sale including 60" pumping engine, 30" stamping engine, 2 x 16 head iron axles, 24" winding engine, 150 fathoms of wire rope, copper ore crusher.
- To be sold privately, 24' water wheel 4' breast, 200 fathoms wire rope with horizontal engine and boiler, apply to Mr. John Phillips East Carluddon, St. Austell.
- Proposal reported to establish a gas works at Newquay. An offer to supply one half of the capital required.
- Gunnislake Clitters - loss of £100 per month shown on 4 months account. Duchy of Cornwall was the mineral lord. The accounts showed sale of copper ores of £2,564 in total receipts of £3,619. Balance in favour of the adventurers £635. The shaft was down to the 212 fathom level.
- Carzize - The Adventurers have received through the Stannaries Court a dividend of 1/- 1d. in the pound as their portion of the surplus assets.
- Carnelloe machinery and materials at Zennor to be sold by auction.
- Two boys killed in Tin Croft Mine when a scale of ground fell on them in the 234 fathom level. Ages 15 and 16. The rock that fell weighed about 1 ton and a half.
- 9/11/1877 - Belowda Clay Work, Roche, to be sold as a going concern with all machinery including 12" cylinder horizontal winding and pumping engine with boiler, shaft and balance bob, sweep rods, shears, 3 tram waggons and railway iron, whims kibbles, etc.
- For sale at Padstow, the Schooner Britannia of 99 tons register. Apply to Captain Quick at Padstow.
- Notice given of petition for winding up the East Rocks Hematite Iron Ore Company Limited by Petition of William Arundel Oatey and John Martin trading as Oatey and John Martin trading as Oatey and Martin of Wadebridge.
- Mr. Bolden, in a circular issued from the Tehidy Office shows that the diamond rock boring company's percussion drill employed at Carn Brea Mine has in 5 months driven 70 fathoms which is about 12 times the speed of hand labour in similar ground. Captain Teague is satisfied that the system produces larger results than the method generally used in Cornwall.
- 16/11/1877 - For sale - machinery at St. Just Amalgamated Mining Company Limited including 46" cylinder engine, 36" cylinder engine, 24" winding engine with cage.
- Notice - (page 1) - of Introduction to Parliament of proposal to dissolve the Newquay Hotel Water Gas & Lighting Company Limited and to incorporate the same into a new company to erect and maintain a gas works. Giving full details of proposed works and powers sought.
- East Basset - the whole of the pit work has been sold but the engines were retained.
- Report on telephone experiments at Wheal Eliza - (page 5).
- Duchy Authorities reduced dues at Phoenix Mine to 1/36th until tin reaches £60 per ton, "other lords please note and follow the good example".
- Captain Mitchell had taken over as manager at Killfretth

- 23/11/1877 - Report - (page 5) - mining machinery displayed at Camborne.
- Livingstone Consols - St. Agnes to be re-worked. Captain W. Vivien reports an outlay of about £30 per month at first and offers to take 1/10th part himself to prove if the Wheal Kitty load passes through the sett.
- Illogan and New Towan Tin & Copper Mines - 40" puming engine purchased by Captain R. Prior to send out of the county.
- Hingston Downs Consols - last six moths accounts shows total cost of £4,499 with sales of copper ore for March at £626 and from April to September (1,052 tons) of £2,640. The capital and liabilities are set down to 18,000 shares of £1 each of which 4/- per share has been called up. Cash at the bank amounts to £2,192 and bill recievable £270.
- The Old Treburgett Silver Lead Mine - letter from the miners as to real reasons behind the closure of the mine and their willingness to work the mine on their own responsibility. The engine had since been kept working at a loss of £150 per month but only 6 men working underground. Report of amount of underground development work. Dues were 1/18th to 1/20th.

A CONTEMPORARY DRAWING OF A TREVITHICK HIGH PRESSURE PATENT STEAM ENGINE

The industrial development of Cornwall during the 18th and 19th centuries was closely linked with the expansion of industry in South Wales at that same time. A prime example of this is the progress of the Neath Abbey Iron Company. This works was founded in 1792 by a Fox-Price partnership to supply Perran Wharf Foundry with pig iron and castings. However, conditions favoured the growth of Neath Abbey as an engineering concern and early in the 19th century steam engine building commenced. Growth continued and in the 1840s Neath Abbey was building stationary steam engines, locomotives, marine engines, iron ships and gas plant.

It is unfortunate that the letter books of the company were destroyed but the majority of the engineering drawings produced at the works have survived and are now preserved at the Archive Service for Glamorgan's Office, County Hall, Cardiff. This collection can provide much information for Cornish Industrial historians. Included in the collection are drawings for a 16in engine dated 1809 for Mr. Williams of Scorrier House, drawings for a 19in x 3ft 6in beam engine dated 1816 for Herland Mine, signed drawings for 1819 by Arthur Woolf for the large 90in beam engines for the Consolidated Mine Adventurers, drawings for an 1823 70in beam engine for Wheal Sparnon, drawings for the Wotton, a small screw steamer built for Howard Fox of Falmouth, the drawings for the Camel, 1834, and Elephant, 1836, the locomotives for the Bodmin and Wadebridge Railway and also in the collection are various gas plant drawings for Cornish towns.

However, one of the most important drawings in the collection is an undated one which is not even catalogued and hidden away among some locomotive drawings. The legend on the back of the drawing states that this is "Trevithicks Engine from Penydarren". The drawing consists of various views of a Trevithick patent stationary high pressure steam engine. The boiler was 8 feet long and 4 feet in diameter and the engine had a 9in cylinder with a 4 foot stroke. Also drawn are end, side and internal views of the boiler. The drawing probably dates from the time when the Neath Abbey engineers were preparing to enter the steam engine trade.

Neath Abbey began constructing steam engines in 1806 by building a number of Trevithick's patent high pressure engines, one being supplied to Wheal Crenver and Abraham and another to the Swansea Pottery. Trevithick, at this time, was in partnership with Samuel Homfray of the Penydarren Ironworks, Merthyr Tydvil who promoted the use of the engine by supplying licences for various firms to construct these engines. Obviously the Neath Abbey engineers had inspected and recorded one of Trevithick's engines at nearby Merthyr in preparation for their own excursion into engine building. This drawing (D.D.N.A.I./L 34 ii) is an important addition to the information already collected about Trevithick's patent engines and deserves, like the whole Neath Abbey Collection, to be more widely known and acknowledged.

Laurence Ince
September 1979

British Mining Number 11.

In the same format as previous issues this copy of the Memoirs of the Northern Mine Research Society is packed with useful information.

However, the idea which seems most useful is the double cover, with the inside reproduction of the cover illustration and title being on the ordinary page thickness of paper for binding into a cumulative volume. If only this were a practise of more societies!

The contents ranges from The Coalbrookdale Coalfield, Oral History in the shape of the memories of a collier in the Halifax Coal Mining District, the Preesall Salt Mines, Photography Underground, Mines in Cumberland and Wales, and then two matters of particular interest to our society. Firstly, an article by Mr. I.J. Brown on the dangers, location, and treatment of old mine shafts in part of the Coalbrookdale Coalfield. The suggestions as to making safe would appear to relate directly to Cornwall. Secondly, Roger Burt, P. Waite, and M. Atkinson of the Department of Economic History at the University of Exeter report initially on the mineral statistics of lead and zinc mining on Alston Moor, Cumberland. Of more interest to our members is the information that this team has converted the mineral statistics of the United Kingdom maintained by Her Majesty's Inspector of Mines (appearing in the collection of British

Parliamentary Papers) from 1845 to 1913 on a mine - by - mine basis. The whole series has been entrusted to a computer record and one would imagine that individual runs for mines the subject of members research would be readily obtainable. In addition it is understood that details of the companies structure, ownership and management are also included and the series covers both ferrous and non-ferrous mines throughout the United Kingdom. This information alone would justify acquisition of this volume, but of similar interest may be the diagrams of the Greenside mine dressing floors at Ullswater taken from Eorlase 1902-3 but of useful comparison with Mr. Bice Mitchells paper published in the society's 1978 Journal. In this issue the standard of plans diagrams and photographs is to be commended.

Paul Stephens.

Barclay Fox's Journal, Edited by R. L. Brett, Bell & Hyman,

The Fox family of Falmouth held a prominent position in Cornwall during the industrial revolution yet little of their activities has been documented. The family had interests in mining, engineering, the copper trade, banking, shipping and held valuable assets in their iron and coal works in the Vale of Neath. It is a delight to see more information come to light about this family in the publication of an edited version of Robert Barclay Fox's journal. Barclay Fox was the son of Robert Were Fox and his journals stretched from 1832 to 1844 and were never published, unlike his sister Caroline, whose journal originally appeared in 1882. The ten volumes have been skillfully edited down to one and provides the reader with glimpses into the day to day life of the Fox family.

The Foxes were connected through marriage to many other important Quaker families and there are many references in the journal to their relatives the Barclays, Backhouses and Gurneys. This is a text book example of how the Quakers built up strong trading links through inter-marriage and these links are clearly illustrated by the inclusion of several family trees. The journal contains many references to the industrial concerns in which the Fox family held interests. Perran Foundry figures in several entries and there is an important section dealing with a visit Barclay made to the Neath Abbey Ironworks in South Wales.

This volume is a welcome addition to our knowledge of Cornish social and industrial history and will also provide a wealth of information for anyone interested in the development of Falmouth in the middle of the nineteenth century. The price is £8.95.

Laurence Ince

Cornish Guernseys and Knit-Frocks

Mary Wright

Today few people are aware that hand-knitting was once a flourishing and vitally important cottage industry in Cornwall. In the fishing villages, girls learned the craft at an early age. Women and girls would knit as they kept watch for a shoal of fish or gathered around the pump, and coastal villages developed their own distinctive patterns and often their own names for the traditional navy blue garment. Polperro, for instance, became a centre of contract knitting; many of the finest patterns originated there and the name knit-frock is still used by its older inhabitants.

Guernsey knitting died out in the 1920s as alternative sources of income and mass-produced clothes became available. Mary Wright pieces together this almost forgotten aspect of Cornish social history. Her researches have resulted in a fascinating book whose lively and informative text is delightfully complemented by a great many contemporary photographs. She has collected thirty different patterns from all over Cornwall, and in the second part of the book gives detailed instructions with charts and photographs to show knitters how to make a traditional Cornish guernsey, incorporating a distinctive local pattern.

60 photographs - 30 patterns - 30 charts - Published by Alison Hodge, 5 Chapel Street, Penzance.

Historic Industrial Scenes

The Steam Engine in Industry - 2

The Second volume of George Watkins Work to be published by Moorland Press (P. O. Box 2, Ashbourne, Derbyshire) at £6.95 consists of 128 pages of photographs and captions, the later of which average over 100 words.

To those who enjoy the feel of books they can be assured that they will have no regrets. It has a pleasantly chunky and solid feel to it - perhaps befitting the subject of the contents.

As before George Watkins sets the scene with a not inconsiderable introduction and then technical notes as to the various modes of operation of the engines described. Most purchasers of this book will know from their own experience of the difficulty of photographing engines in confined buildings and in particular of getting a proper prospective and overall view. Similarly lighting can hardly be described as easy, and certainly not of studio quality. Bearing in mind these inherent difficulties the technical quality of reproduction and the authors original photography are to be commended - even if much would be forgiven for the sake of a record of machinery in most cases now demised.

Although the categories of engine covered include vertical twin cylinder winding engines, horizontal single cylinder winding engines, beam pumping engines, tandem-compound rotative, and ventilation engines in the majority of cases their location has been within the coal mining industry. Although there is a section devoted to Cornish engines in Cornwall (and the Perran Foundry Engine at the Hod-Barrow Mines in Cumbria) it is not until the author reaches the allied metal trades with blast furnace blowing engines, rolling mill engines and the like that the scene shifts from being basically colliery-related.

11

Neither the architecture (in passing) of the engine houses nor the boilers that fired them are neglected and again both George Watkins and Moorland Publishing are to be congratulated for their diligence over the years in the case of the author and enterprise in the case of the publishers in being prepared to provide a permanent accessible record for the authors research in what must inevitably be a limited and specialised market.

There are occasions when it might be regretted that there is only one view of each engine, and certainly a desire is left by the end of the book for greater detail of the manufacture and working history of some of the engines - and indeed perhaps this is the greatest compliment that can be paid to a book. It leaves one thirsting for the smell of steam and hot oil and the measured sounds of the Cornish cycle valve gear in movement.

Demise of Industrial Archaeology Magazine

Industrial Archaeology Magazine issue number 1 appeared in the Summer of 1979 at a price of 65 pence and it no more. Comprising 36 pages with colour photography and articles on the Festinog Railway in Wales, the Norwegian Railway Museum at Hamar, patent extracts from the engineer of 1907 and general information about Industrial Exhibitions Museums and Societies is apparently failed through inability to obtain distribution facilities.

The track record of journals and magazines relating to Industrial Archaeology is not good, with a patchy record for "Industrial Archaeology". Industrial Archaeology Review published by the AIA is hopefully a permanent feature, as is "Industrial Past" and both these cater for different markets and do not compete. It might be thought that a mass circulation low priced magazine such as Industrial Archaeology Magazine should also have had a place and it is sad that the enterprise shown has not been better rewarded.

CORRECTION

In the last Newsletter a note about Colin Bowden's book, Stationary Steam Engines in Great Britain - A Check List, erroneously stated that it consisted of a 19 page Gazetteer. This should have read a 90 page Gazetteer. The book also includes seven illustrations of engines and deals with Great Britain in six separate regions. This is a comprehensive list of existing stationary steam engines and is a must for anyone interested in the subject. Available from Colin Bowden, 16 Church Manor, Bishops Startford, Herts, price £1.40.

ED.

The Early History of Floatation

Following the article by Mr. Cullimore in the last Newsletter, I have received further information;? From Mr. E. W. A. Edmonds:

May I offer some information on Elmore plant used in Cornwall.

Other Elmore plant in Cornwall.

There was also an Elmore vacuum plant installed in the Mill at Clitters, just before the Cornwall Consolidated Tin Mines Ltd had acquired an interest in Clitters United Mines Ltd in 1907. This is mentioned in "A Key to Cornish Mining" by H.J. Meyerstein, page 84, and in the "Mining Journal" of 8.12.06, page 704, and 15.4.07, page 492.

The first flow-sheet and layout of the Clitters Mill plant is given in MJ 7.12.01., page 1525. This plant was supplied by the Luhrig Ore Dressing & Appliances Ltd. The modified lay-out, after the success with the magnetic separator, but before the Elmore plant was added, is in a paper in Transactions of the IMM, vol XV, 1905-06, page 2.

Falmouth Consols.

The Elmore vacuum plant was installed at their dressing plant at Carnon Works (SW 781412), which are long since demolished and the site now almost completely covered by adisusedrubbish tip. Only two concrete pillars remain.

The works of Hydraulic Tin Ltd were opneed in 1951 and have always been further up the valley in Bissoe, on part of the former Tin Smelting & Arsenic Works (SW 773415).

Tywarnhaile

An Elmore oil process plant was installed in 1902, the first in England and second to Glasdir. This is reported in the booklet of the London & West Country Chamber of Mines, 1902, page 138, which also stated in the 1904 report, page 97, that this operation was closed in 1904 as the Elmore oil process was not commercially successful. It seems that the plant was then removed. There was also a report in the "Cornish Post" of 30.10.02.

Can any reader give me details of the engine & generator at SW 702472?

The generators for the un-watering of Taylor's Shaft in 1906 were in the large building which still stands by the road and is still used by the Royal School of Mines (SW 698473).

The un-watering operation is recorded in the Transactions of the IMM, vol XVI, 1906-07, page 213. This paper gives minute details of the plant and the whole operation - with one exception.

Can any reader inform me of the makers of the large electric capstan and the small winch - the plinths can still be seen - and whether these were driven by one motor, or two separate motors?

The file in the Register of Dissolved Companies (Public Record Office, Kew) shows that the shareholders in the Tywarnhaile Mining Co Ltd included Consolidated Goldfields Ltd - perhaps their first adventure in Cornwall - and Mr A. S. Elmore, but no local subscribers.

Mr Elmore evidently had some influence, as a new Elmore vacuum plant was installed in 1906. The "Royal Cornwall Gazette" of 14. 2. 07., page 4, reports that this plant was working satisfactorily. This second operation was stopped in 1908 and all the plant & machinery, less perhaps the Elmore plant, was sold to St Ives Consolidated Mines Ltd.

From Mr. Justin Brooke:

Mr Cullimore is to be congratulated on his article on the Early History of Flotation, and in order to give his researches a more permanent value, would it be possible to give a list of references. I am particularly interested in ascertaining the exact date of the start of operations at Falmouth Consolidated and the fate of the Elmore plant which, although recommended at the outset by the company's consulting engineer, was not included in the list of items put up for sale when the company went into liquidation. The company suffered incredibly bad management; and was always short of money.

Many members have requested a list of names and addresses of officers of the society. These are as follows:-

President	J. Hodge,	Trennack House, Penzance
Chairman	R. J. Law,	Science Museum, South Kensington.
Hon. Secretary	To be appointed in the near future.	
Hon. Treasurer	M. Trinnick,	Garden Cottage, Lanhydrock, Bodmin
Hon. Membership Sec.	R. Thomas,	28, Cadogan Road, Camborne
Hon. Editor	J. Stengelhofen,	Perran House, Grampound, Truro
Meeting Secretary	D. Ingham,	25, Barrnipper Road, Camborne
Newsletter Editor	C. H. Yelland,	Treerife, 45, Chough Cres., St. Austell
Publications Secretary	Mrs L. Stengelhofen, Trevenson House, Pool, Redruth	

MEMBERS QUERIES

From Mr. E. W. A. Edmonds, Tarrandean Lane, Perranwell Station, Truro:

May I take this opportunity to ask readers for the loan of Sales Catalogues covering the disposal of Plant & Machinery in Cornish mines, clay pits, etc.

Particularly wanted are two - Mitchell & Sons in 1920 for the Duchy of Cornwall Mines; Kit Hill, Hingston Downs & Clitters, and that of George Cohen & Sons in 1931 for the mines of the Anglo Oriental & General Investment Trust; Polhigey, Parc-an-Chy, Poldice and Wheal Vlow.