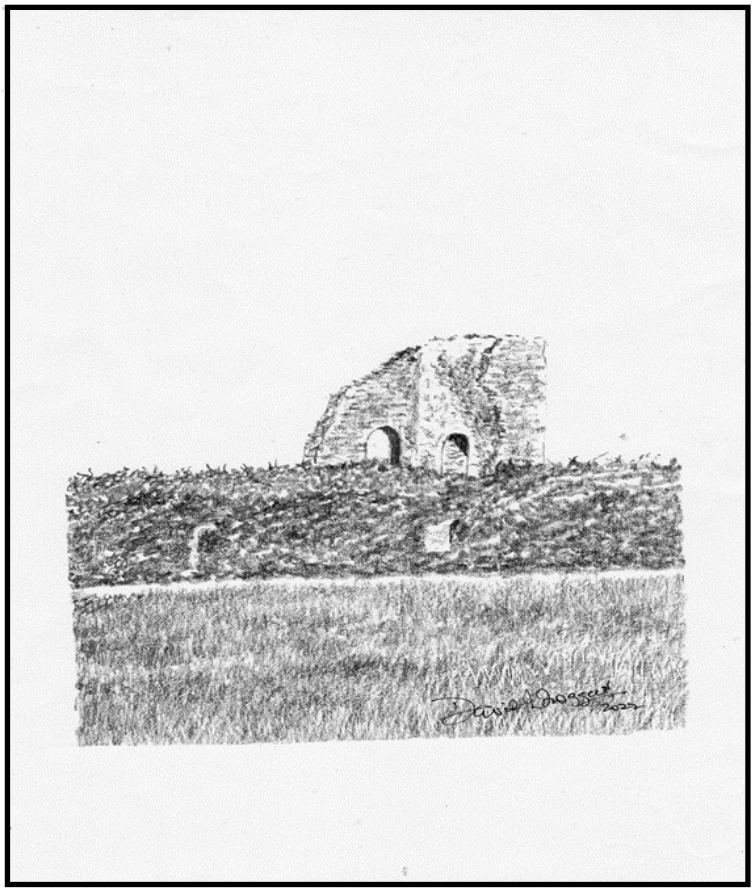
CARN BREA MINING SOCIETY

NEWSLETTER

December 2022 No 88



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Front cover drawing by David J Froggatt – Wheal Speedwell SW 558292 – 1819-54.
This small engine house remains amid dumps just off the A394, two and a half miles east of Marazion.

Chairman's Report
By Tony Brooks

Work at the mine has progressed steadily with 8-10 members on site every Thursday morning. We have had a full programme of talks along with two field visits which included our annual members' open morning at Condurrow.

Members' visit 24th September 2022

Three More Prints from my Collection by David Froggatt

Botallack Mine – A Royal Visit 1865

The visit of the Prince and Princess of Wales to Botallack Mine took place on the 24th July 1865. The Royal Couple, along with Mr John St.Aubyn and Lady Elizabeth St.Aubyn arrived there in a carriage and four around noon, followed by the Duke and Duchess of Sutherland, the Earl of Mount Edgcumbe, Lord Vivian the Lord Lieutenant of Cornwall, Lady Vivian, Lady De Grey and others of the party. They were received by Mr Stephen Harvey James the purser and other officers of the mine. All of the party, including the Princess attired themselves in white flannel to go down into the mine. The Princess and Lady Elizabeth St.Aubyn rode in a donkey chaise along the narrow pathway from the count house to the mouth of the mine, followed by the Prince of Wales and others walking behind. By the sides of the path and on the heights were hundreds of people and as the Royal Party passed, they were saluted by the Duke of Cornwall's Artillery Volunteers and the band playing the National Anthem.

Upon arrival at the shaft the Princess and Mr St.Aubyn took their place on the lower seat in a special car, with the Prince and a brakeman in the seat behind followed by others of the party. (Print 1) The car descended slowly down a steep inclined plane into the dark depths; the shaft being some 200 fathoms. The bottom of the mine continued horizontally about half a mile beneath the sea, being traversed on foot with the aid of candles.

After almost an hour, the Royal Party returned to the surface being greeted with the heartfelt cheering and the band playing 'God save the Queen' and 'God bless the Prince of Wales'! Having partaken of an excellent luncheon, the Prince of Wales (later Edward VII) proceeded to Land's End, accompanied by Mr John St.Aubyn.

Print 1

The print size nine and half inches by 7 inches was produced which also appeared on the front pages of the London Illustrated News on 5th August 1865.

A Royal Visit 1852

What is not so well known is a previous Royal visit to Botallack Mine which took place in the third week of August 1852, and this was by three sons of King Louis-Philippe of France. They were the Duc de Nemours (the 2nd son), the Prince de Joinville (3rd son) and the Duc d'Aumals (5th son), who also visited many other places of interest in the West Cornwall.

They were particularly struck with Botallack Mine where they were able to go underground to a depth of 150 fathoms below sea level. A report of their visit was contained in the Illustrated London News on August 28th 1852, which contained this engraving (Print 2) of the mine.

Print 2 1852

So interested were they that they remained below for between four and five hours. The Prince de Joinville was particularly keen to be acquainted with the whole process of working, and, having a miner's hat on, as also had the rest of the party, he made use of the tools and dug some copper ore which he later carried to the surface. At the 130 fathom level the party were conveyed by a railway to a part of the mine that extended more than half a mile under the sea. Having fully satisfied their curiosity at a depth where very few but miners have the courage to go, they proceeded to ascend the perpendicular ladders, wet, dirty and slippery to the surface, a task most difficult and very fatiguing. (*as recorded later in this newsletter, I worked briefly at Geevor and, on a few occasions, I climbed the 700 feet up Victory Shaft from 7 Level to surface. It was hard work and I was then a fit teenager – ed).* This was accomplished successfully by the Royal party who arrived safely at surface presenting an appearance truly ludicrous, from being covered in red mud.

Ablutions in hot tubs, filled with warm water soon restored the gentlemen to their former appearance. The prince later invited the purser, Mr James, to dine with him and his friends the next day in Penzance

The engraving, Print 2, is of historical interest, whilst it shows the 1835 pumping engine house, bottom left, the Boscawen Shaft whim house is absent, as that was not built until 1862, 10 years after this visit. However, it does show the 1841 winding engine house on top of the cliff of which little remains except a truncated chimney and foundations

Botallack 1875

Print 3

This last one shows, in considerable detail, the mine at what was probably the limit of surface development.

Editor's note – I have in my possession the painting below which I guess must date from about 1879. What is interesting is that the prints 2 & 3 and this painting are remarkably similar. So, the artists painted fairly accurately what they saw not using much 'poetic licence'.

A Student at Geevor Reminiscences of 1961(Part 1)

By Derek Stonley

When I told my parents that I was to start a job working in a tin mine in Cornwall, they thought I had taken leave of my senses. Living close to the Sussex coast (I had gone to High School in nearby Worthing) none of us had the remotest concept of what a mine was like, other than it was very dangerous and where rough and blackened workers hewed coal and lived in rough and blackened towns "up North." Apart from the London Underground, my only experience of the sub-surface had been a visit, when small, to Gough's Caves at Cheddar. I had written a letter addressed to "The Mine Manager, Geevor Tin Mine, near St Just, Cornwall", in which I explained that I had the good fortune of having been awarded a State Scholarship, which paid all university fees plus a generous living allowance (Oh Happy Days!), and had a firm offer of a place at Cambridge to study for a degree in Natural Sciences, majoring in geology. This would begin at the start of Michaelmas Term in October 1961, and I had at least six clear months of what later became the "gap year", the hiatus between completion of GCE "A" levels (and in my case "S" levels too), and what is now "Freshers' Week" at university. By return I had a letter offering me a job as an underground labourer, on a five and a half-day week of forty-five hours for a wage of a little under £9 a week. I would be accommodated at Boswedden House in St Just, then the Geevor mine hostel (Figure 1), which charged £4 a week for bed and full board. I was soon on my way.

At that time. to reach St Just from Worthing entailed catching the once-a-day "express" steam train from Brighton to Plymouth, pulled by an impressive Merchant Navy Class locomotive along the old Southern Railway network.

Fig 1 – Boswedden House

At Plymouth I had to change trains to a prosaic diesel-hauled all station stops affair to Penzance. I had with me a suitcase and my bicycle, this latter being left locked at Penzance station while I caught the last bus to St Just, asking of the conductor on the way the whereabouts of Boswedden House.

It had been arranged by phone that I would arrive on a Friday evening, and it was well after dark as I began the long walk from St Just down the road towards Cape Cornwall. On my arrival I met the couple in charge of the mine hostel, Polish Nicky Burzynski, who also had a job on surface at the mine, and his English wife Pam. Pam provided me with a generous plate of bacon, eggs and chips, for I had not eaten since leaving Worthing that morning, and I found that she originally hailed from Brighton. I soon felt myself completely at home.

Apart from Pam and her two small children, Lucien and Linda, I was the only English person in the building, the other occupants being two more Poles, a Russian and an Italian, who all worked underground. I was to share a room with Jon Brajza, one of the Poles. These guys would have been in their forties, and in all probability had experienced appalling privations during World War 2. Nicky had been imprisoned in Buchenwald, with the tattooed number on his arm as a legacy of that time, but he had managed to escape. Jon briefly mentioned that he came from a wealthy family, whose possessions were expropriated by the

invading Germans, but nobody wanted to talk about how they came to England. At this further remove of time, there is rich social history to be unearthed. On the Saturday I retrieved my bike from Penzance and was requested on the Sunday to see the Mine Manager, Mr. Batchelor, at his home in Pendeen. We had a short conversation, mostly about his former time in South Africa, and I presume he was satisfied that I was fit and would be suitable for work underground.

Monday morning at 7am I was taken in hand by a shift boss at the mine, kitted out with boots, overalls and a hard hat, and assigned a locker in the "dry" where miners washed and changed clothes at the end of their shift. I was also given an empty tin with a lid, and a carbide lamp. I filled the tin with calcium carbide powder from a great open drum in the covered way from the "dry" to the mine shaft, being told that the workings of the lamp would be explained to me once I was underground. The shift boss presented me to an irascible old timberman as his new assistant. This fellow loudly proclaimed that he didn't want to be lumbered by no bloody student, but down the shaft we went, getting out at the shaft station on level 13. Geevor did not measure the depths of their workings in the old-fashioned fathoms so widely used elsewhere in Cornwall, but simply in feet, the working levels being spaced every hundred feet apart. When I was at Geevor, the deepest working level was 15. Access to the system was by the vertical Victory Shaft (Figure 2), so named after victory in World War 1, and begun in 1919.

Sinking then went on slowly due to the turbulent financial situation in the 1920s and 1930s, and it was not until 1944 that level 15, at 1,500feet depth, was reached.

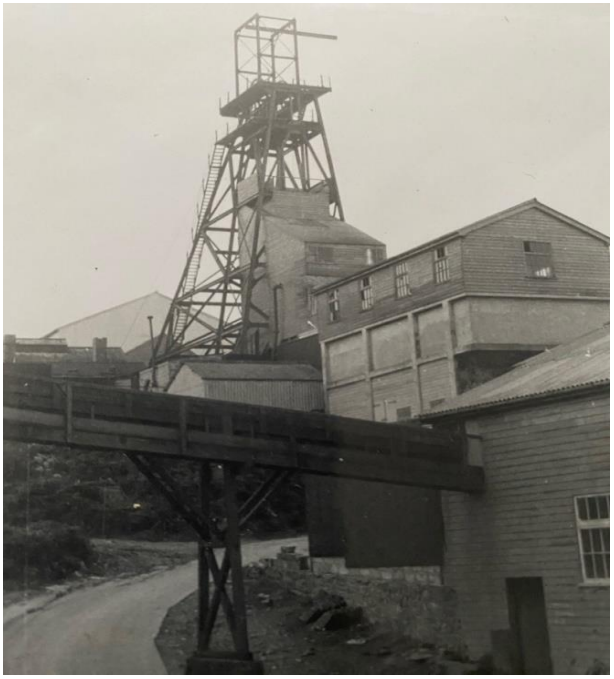


Fig 2 – Victory Shaft

Back at the level 13 shaft station, a wide space lit by electricity, the mood of my new boss was not improved by my having to ask how the carbide lamp worked. I was shown how to unscrew the base and charge it with carbide powder from my tin, screw it back tight and then fill a small reservoir, forming the upper half of the lamp, with water. A lever atop the reservoir controlled the flow of water down into the carbide (Figure 3), which immediately reacted to give off inflammable acetylene gas.

Fig 3 – water control

Fig 4 – the lamp

The gas escaped through a small valve placed centrally in a reflector attached to the water tank and was ignited by a sort of flint and wheel system similar to that used in the cigarette lighters of the day (Figure 4). A long bright naked flame gave your illumination, but it took a while to operate the lamp hooked into my

hard hat to control the brightness without burning your hand on the flame.

With my lighting under control, I followed my boss into the dark windings of level 13, an eighteen-inch gauge railway track under our feet and a narrow drainage channel for water at one side. Above us ran a line of metal pipes for water and for compressed air, the air for the rock drills, and the water to suppress the potentially deadly silica dust the drills produced as they penetrated the hard granite. There were various branches off the level we were following, and at intervals there were wooden structures I was told were "box holes", rough timbering with boards that held back ore broken from voids above, the "stopes". At one point we had to squeeze against the sidewall to allow a battery-powered loco, pulling some half dozen wagons, the trammers on their way back to the shaft with a load of ore for hoisting to the surface. As we walked on, I became aware of an intermittent, low-frequency drumming sound, which as we approached increased in volume to an astonishing degree. In my previous life in the upper world, the loudest man-made noise I knew was the sound of what were called pneumatic drills, used in road works. Now we came to the rock face, where the noise from a not dissimilar rock drill, two men operating in a confined space perhaps eight feet high and six feet wide, was unimaginably loud. I tried a test yell, but could not even hear my own voice. Nobody wore ear protectors. The drillers stopped for a while to exchange some words with my boss, giving me a first chance to see the mineral vein or lode, a streak of quartz and blackish-green material, some eighteen inches wide and cutting at about ten degrees from the vertical across the gleaming white granite of the face. There were small cavities in the vein, lined with quartz crystals, and I knew that these veins, though often narrow, could extend for miles, upwards here at Geevor to the surface and down for an as yet unknown depth. Above the box holes we had passed, the vein had been followed and partly removed, possibly all the way up to level 12 or higher, men working in narrow "stopes" like this all over the mine.

Then the drilling resumed, and we walked some distance back down the level to where there was a gap in the roof, or hanging, a partially-constructed box hole below it, and a small flat-bed wagon up-ended against the sidewall. This was a "dandy", which I had to take back to the shaft, where by now a load of timber would have been delivered from surface for me to load and return with so our work could begin. For a moment I was about to expostulate that I didn't know the way, either there or back again, but quickly realized that all I had to do was push my dandy down the rails and follow the water drainage to the shaft station. Here indeed were the trammers, their wagons already emptied into what was called a "grizzley", a grid of heavy iron girders laid cross-ways over a dark hole, perhaps a gap of a foot square between the girders. Ore tipped into the grizzley mostly passed through into a loading pocket below, from where it could be transferred to skips for hoisting to the surface. The trammers called cheerily that "I had made it, then!", and set off again back up the level; the penny dropped that I was undergoing some sort of test.

I found that I was not alone in the shaft station, but that there was a "grizzley man", a burly, fierce-looking chap whose task was to see that all the ore tipped from the wagons passed through the grid, while oversize rocks, too big for safe hoisting up the shaft, had to be broken with a hefty sledge hammer. This morning he seemed to be having an easy time of it, and after only a few minutes of immense but well-aimed blows, the oversize was reduced and his grizzley was clear. He kindly offered to help load the dandy, asking me as we did so what I thought of my new boss, to which I replied very diplomatically, as for all I knew, they might be related. I was told that the timberman's bark was worse than his bite, but reflecting that I wanted neither to be bitten or barked at, again I held my tongue. To his question about how I felt about working underground, I told him

honestly that I was quite relaxed about it, and that being a new chum there was a lot to learn. He responded with a story that the previous year he had witnessed the literal breakdown of a young mining student, when, on his first descent underground, had discovered at the shaft station that he suffered from acute claustrophobia. The poor lad, in considerable distress, had to be taken back up to the surface, his potential career as an underground mining engineer at an abrupt end.

The dandy having been loaded, I began the heavy push back up slope to our working space. There was helpful parting advice from the grizzley man that when I reached a certain branch-off, I should switch the points on the track to get the dandy up it a short way, and then re-set the points to allow the trammers to come down unimpeded. I had not thought about that! After only a few minutes had elapsed, the trammers passed by with more cheery words. Back at the box hole, my load delivered, it was observed with grudging approval that I hadn't wasted any time. Neither had my boss, who had set up a short ladder to access the top of the box hole and cleared the area ready for us to begin work in earnest, my skills being limited to fetching, holding or carrying. I almost felt like barking. By about 2.15pm, our new box hole completed, we made our way back to the shaft station, joining others all heading the same way. Across the working areas, drillers detonated the explosives to break their next round of ore, leaving quickly before the blast to avoid the dangerous fumes which would be dispersed by compressed air from the pipes. Man hauling had already begun, and as I stood in the cage with my boss, a man of few words, he said "You'll get used to it, lad." There was this wonderful moment when the first daylight appeared on the sides of the shaft. Then we were out in the sunshine and along our way to the dry to clean up and head home. I had survived my first day underground at Geevor, and next day I was told I was to be assigned as helper to one of the machine miners.

(To be continued)

A Student at Geevor – 1962

By Tony Brooks

It is an amazing coincidence that I also briefly worked at Geevor some 12 months after Derek Stonley, so perhaps it is appropriate to compare my experience with his.

At the end of August 1962, I went down to Cornwall to work for a month at the Geevor Tin Mine prior to entering the Camborne School of Mines (CSM). This had been organised for several of us through CSM. Whether Geevor was short of labour or were doing us a favour I know not.

At that time, I had not received my 'A' Level results. Ideally I needed two 'A' Level passes, grades not important, both to get into CSM and to qualify for a Surrey Major grant that would pay the full fees and subsistence based on parental income. Failure would have meant taking an entrance exam, which probably was not too difficult and, more importantly, no grant, which could have presented a problem. Fortunately, I passed - just.

I caught the Saturday night train down from Paddington. I arrived at Penzance station on the Sunday morning and the instructions were – *Take the bus to St Just, ask in the square and they will direct you to Boswedden House*. Whoever wrote that instruction clearly had not tried to get a bus to St Just on a Sunday morning! Anyway, eventually I got to St. Just. The square was deserted – either the locals were in chapel (possible) or were sleeping off the excesses of the night before (more likely). Eventually I found someone and was directed down a footpath towards Cape Cornwall. It was a long walk in the sun carrying my suitcase, duffle coat and probably wearing a jacket.

I was told to report to Nicci, who turned out to be Nicholas a Pole – consulting his list, he said '*You are in the smaller tent' 'The smaller tent?' 'Yes, the smaller tent – if you go out of the side door you will find it'*. Sure enough outside on the lawn were two marquee type tents – the smaller one contained three beds.

Bosswedden house (2011). The bay window was our 'living room', the tents were at the back to the right.

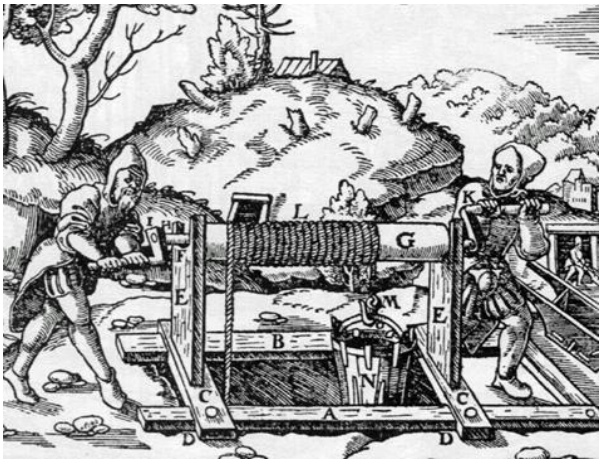
As it later turned out there were about twelve of us working at the mine. We were mainly housed in these tents (three in one tent and seven in the other) and the rest in the house.

One student, Gwyn Griffiths, who, despite his name, came from Lowestoft, had a nice new shiny 250 cc C15 BSA motorbike. We were tent mates and he was kind enough to give me a lift to the mine each day. There was no transport laid on - getting to the mine was your problem. Gwyn was always last out of bed so going to work was a rush. I can clearly remember hanging onto the back of his motor bike in the early morning as we hammered along the coast road from St Just, past Botallack, through Carnyorth and Trewellard to the mine. As you turn left down to the mine the headframe seems to climb up out of the sea. It is something that always stirs me whenever I go to Geevor.

We had to supply our own underground clothing, boots and hard hat, which I had anyway as I had done some mine exploring and potholing whilst at school. Carbide lamps had by then been replaced by electric cap lamps.

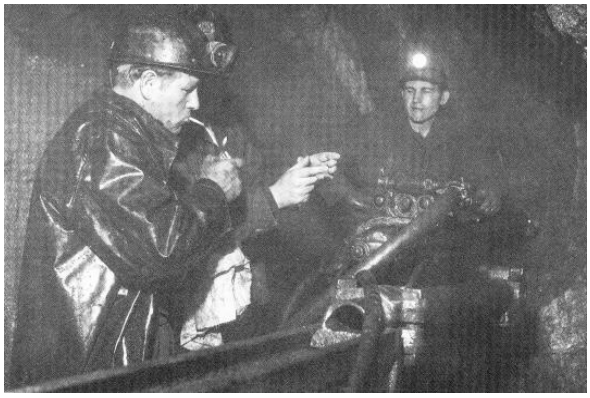
Victory Shaft, Geevor 1962

My first job was on 9 Level (about 900 feet from surface) lashing a winze (like a small shaft being sunk downwards towards the next level 100 feet below). The plan was that we students cleaned the broken rock from the previous day's blast and then two miners would come in and drill and blast. When we started it was about eight feet down. We were given a shovel, a metal domestic type bucket and a length of rope. It was hard work, there was no platform, and the bucket had to be lifted at arm's length to prevent it catching on the side wall and tipping the contents (rock and sometimes water) back onto the shovel man below. We complained. '*Never mind lads, the timber crew will put in a platform and a winch on Sunday*.' Come Monday, yes there was a winch – a hand windlass as you would see on a well - like something out of Agricola.



After Agricola 1556

Still, it worked and the drillers blasted that afternoon. Next day there was no platform and no windlass. The whole lot was in pieces down the winze half-buried in the blasted rock! Fairly close to where we were working they were driving one of the first connections from Geevor towards the Levant mine where they were attempting, initially unsuccessfully in 1962, to seal the breach into the sea. They had a basic rail mounted drill rig which I went to see operating.



Geevor drill rig

My prowess with a shovel must have reached the higher echelons of management for shortly afterwards I was sent up to 7 Level to work with a timber crew. They were putting in chute boxes and further along the haulage were piles of rock left by the miners when they had blasted the box-holes and I was left to shovel what seemed like endless piles of broken rock down holes to the level below. Being on 7 Level presented a problem. Gwyn, who was a fairly useful miner, was working on the grizzley on 15 Level. The way it worked was that in the morning, when we went underground, the first crews went to 15 and then the later crews to the levels working up to 7 Level where I worked - this meant that I went down last. In the afternoon, probably for ventilation reasons, men working on 15 Level came up first and those on 7 Level came up last. Now quite naturally Gwyn did not want to have a long wait for me. The team that I was with did not overwork themselves and were back at the shaft well before the time of their cage. So I and Roger Taylor, a Royal School of Mines student, used to climb the 700 feet to surface timing our arrival to coincide with the first cage from 15 Level. Problem solved - though quite illegal!

The Porthledden Hotel was just down the road from Boswedden House, and. after dinner, we used to collect there until closing time. Right down on the neck of the Cape Cornwall was a cafe - now a private house on the right-hand side opposite the car park. When the hotel shut the bar, we used to drift down to the cafe. It was run by a strange single man, possibly an artist.

At Geevor I worked for the princely sum of £9 15s per week. Our accommodation was £5.00 per week full board, which was a bit expensive for what we got, however with beer at 2/6 (12.5p) a pint we could survive

Some Underground Explorations by Trish Browning

Part 1 Whilst most people see the remains of our mining past on the surface, there ae interesting remains below ground. Here are some of our exploits from several years ago

Bedford United

The mine is situated on the eastern side of the Tamar N.E. of Gunnislake Bridge. Starting in the 1840s up until about 1928. It was a copper producer in the 19th century and was tried more than once in the 20th century for tin and tungsten.

The entrance was gated whereupon we descended a short drop into a level, through stopes, a climb down a sloping pitch to a short crawl which led to Engine Shaft. This shaft was very impressive with the skip road timbers in situ and a huge eyebolt with a chain wrapped around it. There was also a wooden cistern for discharging water from the rising main.

Rising main, water cistern and part of the skip Road on the right. Photo D.Warne

On the level by the shaft were eight, nine foot long and seven inches diameter, rising main pipes lying on the ground.

Rising main pipes. Photo D Warne

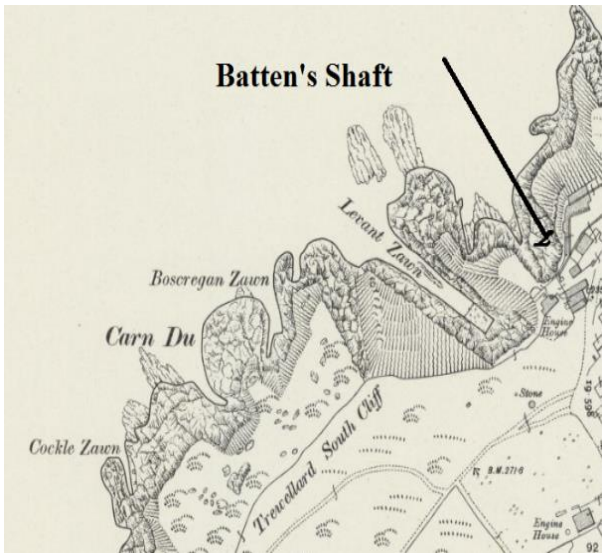
We had been told that there was a level further up the shaft which was inaccessible, so Hugh and I took the hint and decided to climb up the shaft. Hugh was using a telescopic earth pole with a stout wire hook on the top. With this he looped a weighted length of cord over a suitable timber above. The cord was hooked down and used to pull up and choke a short length of rope around the timber. By doing this he was able to prussic up the rope (using an ascender), secure himself to the timbers and then repeat the operation.

Looking up Engine Shaft showing the timber Road that we climbed. Photo D. Warne

After climbing over eight skip guide supports, he was able to get under the ninth at the next level. Here there was an accumulation of fallen timbers and rocks which had come down from above. By now Hugh was about 60 feet above me, as I was keeping out of the way in the level. Hugh shouted down that a timber had fallen down the shaft. I shouted up that nothing had come past me. As it was now safe for me to ascend the rope, I attached my jumars and swung out into the shaft. However, the movement of the rope must have nudged the rubbish up above and hundredweights of loose material, including old ladders, fell down the shaft. Luckily there was still some slack in the rope and I just managed to claw my way back into the level. The avalanche lasted several seconds. A pointed plank about 8 feet long narrowly missed me but went through the rope. Apart from a small bruise on one arm and a slight scratch on my nose, I suffered no real injury. Following the avalanche there was an awful silence. Hugh thought that I had been killed and I thought that he had come down with the rubble. We eventually made contact. My legs were shaking and so were Hugh's. He descended having checked the rope in case it had been damaged and we made a hurried exit saying that we would not be going underground again. However, not long after we did!

Levant/Geevor

With the imminent closure of Geevor in 1991, four of us decided to go underground into the Levant section before the workings became flooded. Our way in was via Batten's Shaft which lay about 150 feet above sea level, almost directly below the Levant engine house.

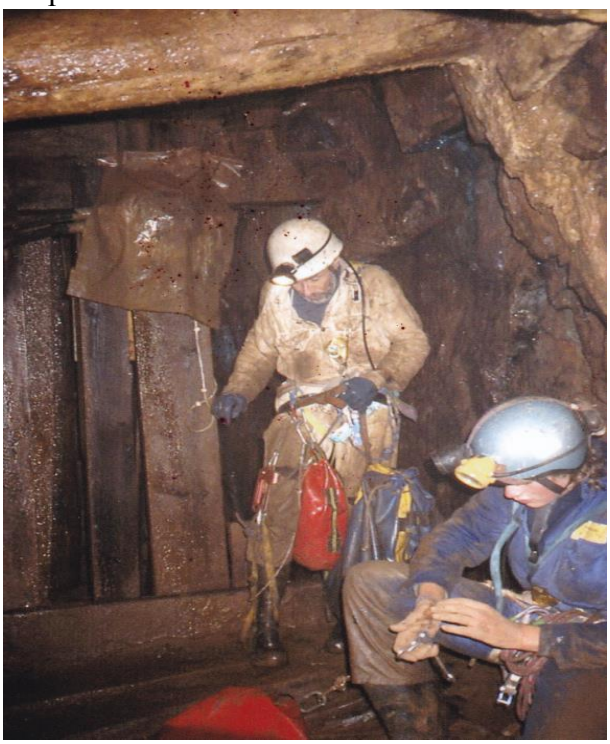


Location of Batten's Shaft

The entrance pitch began vertical but soon underlied south. This change of angle and the awkward squeeze under the protective surface timbers resulted in the use of 2 re-belays.

Batten's Shaft

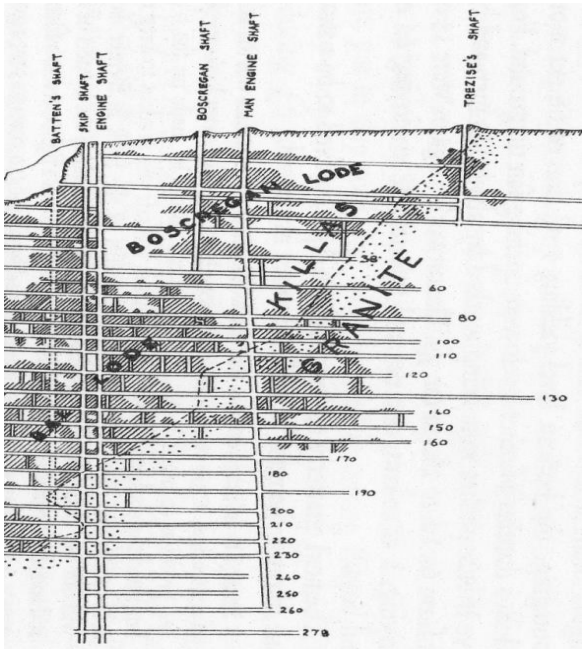
We put a 300 foot rope down the shaft. At the bottom a low crawl led into a series of short awkward descents through narrow stopes in to a modern drive about 8 ft. square that led to Skip Shaft. This was Levant's main shaft used for hauling eventually from 278 fathoms below deep adit.



60 fm level – about to descend

The ladders in Skip Shaft did not look safe to use so we tied a 300-ft rope to the shaft timbers. Hugh descended and entered the 100 fathom level but did not fully explore it. Re-entering the shaft, he continued to the end of the rope (with a security knot tied on to the end). Without finding any more levels, we made our way out, surfacing at about 7 p.m.

Following on from this trip, about 2 weeks later, four of us, Ali Neill, Hugh Browning, Aidy and I, drove to the site again with more rope and lots of water to drink. We all descended to the 100 fm level. Ali, Aidy and I had colds and were not feeling 100 percent. The heat and humidity were making us feel lethargic which did not help. Ali and Aidy started on out. Whilst they were ascending, I waited in the 100 fm level as Hugh continued to the 130 fm level. To the east, the level was blocked close to the shaft. To the west, the level carried a noticeable current of air towards Skip Shaft. There were rails and air pipes in the level and the floor was timbered over a deep gunnis.



Area around Ship Shaft

Returning to Skip Shaft, Hugh re-belayed the rope and descended to the end of the rope which was dangling in mid-air. Without more rope we could not descend any further, so there was no option but to make our way out. Whilst waiting for Hugh in one of the levels above I heard a piece of timber fall and shouted down to Hugh who was now on the rope. He managed to pull himself into a corner of the shaft out of the way. However the timber did not reach him and hung up on one of the timbers. We had to climb individually as climbing together would have been too risky in the shaft. Every so often we had to pull up the ropes and stuff them into kitbags dangling them onto our harnesses as we ascended. Eventually we surfaced at 8 pm. What a trip!!

(To be continued)

Welcome to New Members

Mr T Hall, Bodmin

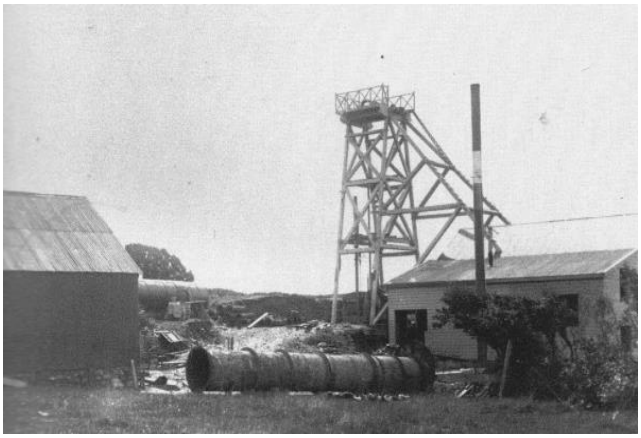
Mr R D Smith, Chacewater

Mr C Beresford, Porthtowan

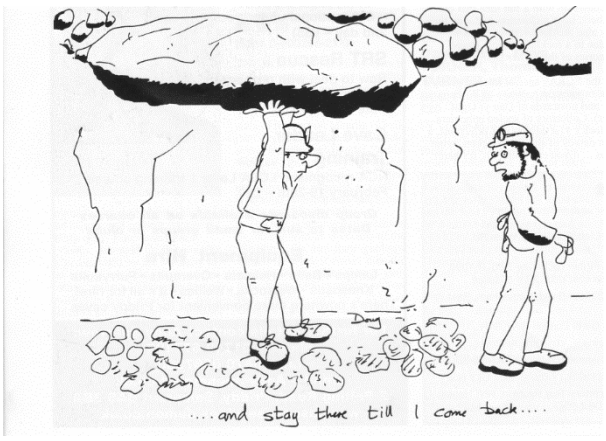
Mr A Partridge, Dorset

Mr W A Trevena, Redruth

Where was this?



Answers to your Editor, please.



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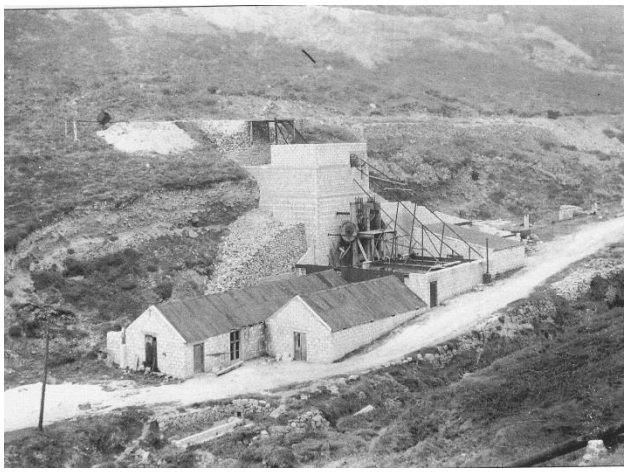

Answer – Wheal Bellan 1945

This little mine lies at the seaward end of the steep sided Cot Valley SW of St Just.
Today there is little to see except some concrete ruins.

According to J H Collins it was worked extensively by the "old men" on the outcrops. Later worked in conjunction with Wheal Venton, Wheal Widden, Wheal Dower, Little Wheal Dower, Wheal Buck, Wheal Owl, Little Wheal Owl and others as St Just United.

Plate 1 - Wheal Bellan mill site 2022

The mineral statistics, under the heading of St Just United says – 1899-1902 *St Just United Bellan part* and then 1903-09 *St Just United Consols.* Production fluctuating from a peak of 15 tons in 1903, 8 tons 1904-7 before climbing to almost 17 tons in 1909. Numbers underground were usually less than 10 with perhaps 8 on surface. We know that this was Bellan as the Mining Journal reported the Bellan production of tin for 1908 and this is the same as given under St Just United Consols. Throughout this period the manager was J Chenhalls.

Bellan appears as an individual mine in 1910 when the mine owner is recorded as the Bellan Tin Syndicate - the labour figures indicate that something major was happening.

	U/g	Surface	Total
1911	10	15	25
1912	12	26	38
1913	24	25	49

I suspect that up to about 1910 the ore from the mine was treated in a waterwheel stamp in the valley and that the mine was modernized when the Bellan Syndicate took over. To support this theory Joseph in his article *Tin dressing sites in the Western Cot Valley*[1], with regard to the Bosorne Bottoms (stamps) in 1902 he says: *The works at that time was owned by a man called James Chenalls* (note spelling change – ed), *who appears to have had some connection with at least part of the old St Just United Mine workings. Chenalls also had a connection with the early history of Wheal Bellan.* I think that a new mill was built on the present site further down the valley and other improvements made which are reflected in this plan of 1916. This could account for the large number of men employed on surface 1912-13. In April 1914 some 100 men worked here under Captain N. Nichols, when the equipment included six Frue vanners and two buddles. The 1918 List of Mines shows 16 men underground and 9 on surface.

[1] Trevithick Society Journal 2003 p60

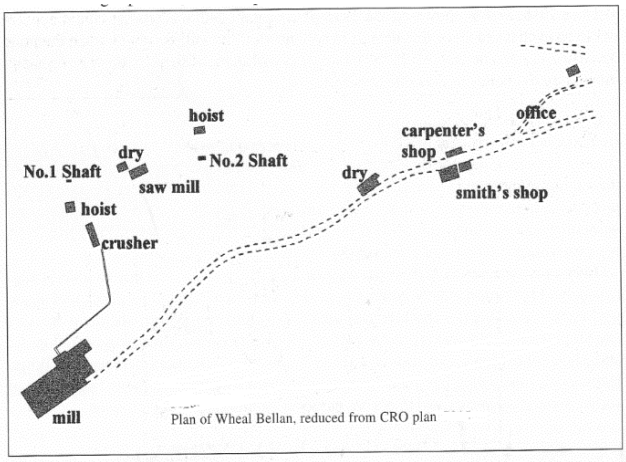

Fig 1 - Wheal Bellan surface plan 1916.

The mine closed in 1919 and, in August 1919, there was an advert for tenders for all of the plant and machinery. Later in November 1919, everything left over was sold at auction. It appears that only a suction gas producer plant, a 120 hp gas engine along with a dynamo (250v x 18 amp) and 3 electric motors (18hp, 7hp and 5hp) had been sold by tender. The main items listed in the auction included 10 head Californian stamps, 6 Frue vanners, a Wilfley table, 2 barrel pulverisers, 4 round frames, 2 jaw crushers, a 2-stage air compressor, two timber headframes, a 27-ft Lancashire boiler, a loco type boiler and two buildings constructed of timber and corrugated iron. No mention was made of hoists, pumping equipment or the mill building. There is no record as to where this

equipment went to – 1919 was hardly the time to sell mining machinery.

The mine was re-opened early in WWII under the general direction of F F Oats. Oats was an interesting character and his obituary reads - *1901-03 agent for Basset Mines. 1909-14 occupied with mining interests in Cornwall. RA during WW1. Director of Basset Mines, Bissoe Tin Works and Levant Mine. In 1920 he took over the management of Levant until it closed in 1930. Then abroad. Returned to Cornwall in 1939 and converted his home, Porthledden, at Cape Cornwall into a hotel which he ran until 1948. During WW11 he was in charge of a tin mine at St Just which had been reopened by the Government.* I presume that this was Bellan**.**

Dines records that Top Adit, which is close to the building on the road marked 'dry, was opened up along with No.1 and No.2 shafts and he makes the comment that production was small.

Bellan is typical of many small 20th century mines where we have photographs, field evidence, often in the form of concrete foundations, but very little recorded history. So the challenge is to see what we deduce from these photographs and the remaining field evidence.

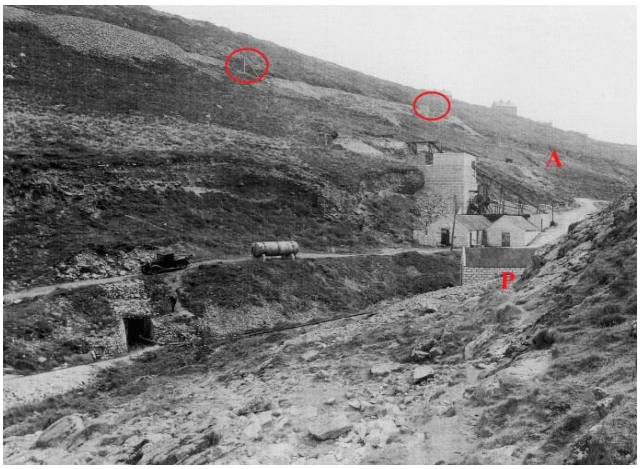

Plate 2 - Looking up the valley August 1945 (BGS)

On the left is the drainage or Bottom Adit which has been used to tram out waste. There is no connection to the mill. An airline runs down the bottom of the valley and into this adit. The air receiver up on the road is connected via a smaller pipe to the main airline. This brings us to the building on the right, labelled P. Field evidence indicates that this contained a Pelton wheel that was fed from a leat on the south side of the valley. Some of the feed pipe supports still survive. Question – what did this Pelton wheel power? It could be either to generate electricity or to power an air compressor.

The foundations of the Pelton wheel still survive. Plate 3, taken looking down the line of the feed pipe. This can be seen in the centre of the building with a bearing foundation on the left. There is a big space top right but no foundations. However, on Plate 3 there is no sign of an airline above this building. So, one might presume that it was a compressor house.

Plate 3 – Pelton wheel house - 2022

The ore appears to have been hoisted up No.2 shaft, the one on the right (Plate 1) to an intermediate level A, which had been driven from the hillside. I guess that the shaft was equipped with a simple single decked cage capable of holding one wagon. The wagon was then trammed out of this adit and along the contour to a point above the mill where it was tipped into the ore bin. On Plate 4 one wagon can be seen half way along the track and a second one has almost fallen over a waste tip at the end.

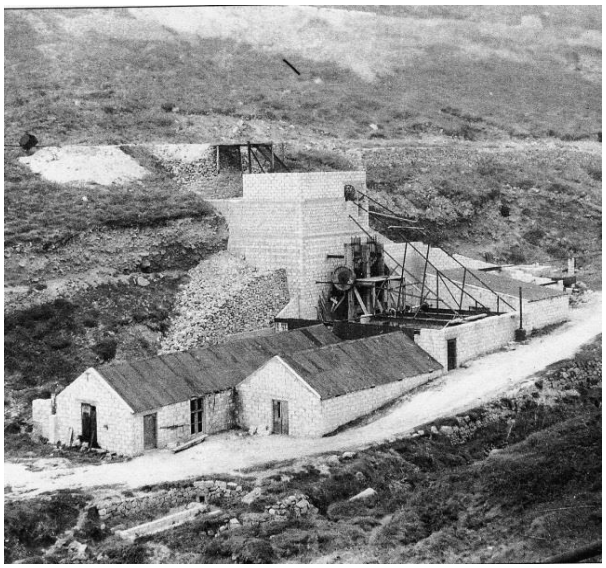

Plate 4 - The mill 1945

The site is obviously derelict as doors and windows have been damaged. The roofs on the two single storey buildings on the left look more than five years old. I think that these concrete block building date from about 1912. Wartime efforts quickly to produce tin are unlikely to have erected permanent structures.

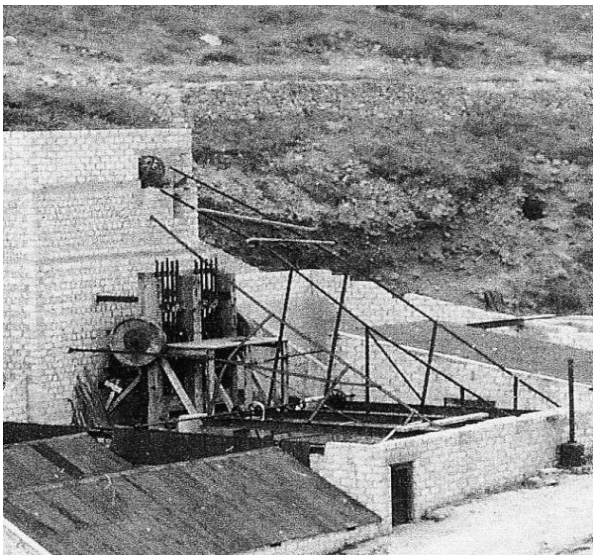

Plate 5 – Stamps and table section 1945

The roofless building in front of the stamps held two Holman tables, the foundations of which still survive. The tall structure at the back is the ore bin that was, I think, topped by a grizzley. Any oversize would have been broken up in a jaw crusher, the flywheel of which can be seen projecting out of the wall above the stamps. This top bit may well have been added in WWII. There appears to be a slot below this crusher which presumably was for the drive belt. The two sets 5-head of Californian stamps look distinctly elderly. In front of the stamps can be seen a horizontal line shaft with 3 pulleys. One for each of the two tables and the third probably was where the drive came up from near the floor. The pulley nearest the camera appears to have a belt on it. What is left of what I presume is the roof makes no sense at all. There is no sign of a flashing or beam holes – was it ever roofed?

The building on the right, with the sloping roof, housed the engine and/or electric motor that drove the line shafts that powered the stamps, the tables and dressing machinery further down the plant. A number of foundations still survive.

On the outside of the table section, up from the door, is an engine silencer and vertical exhaust. What did the engine do? Perhaps it was designed to run the crusher when the rest of the plant was not working?

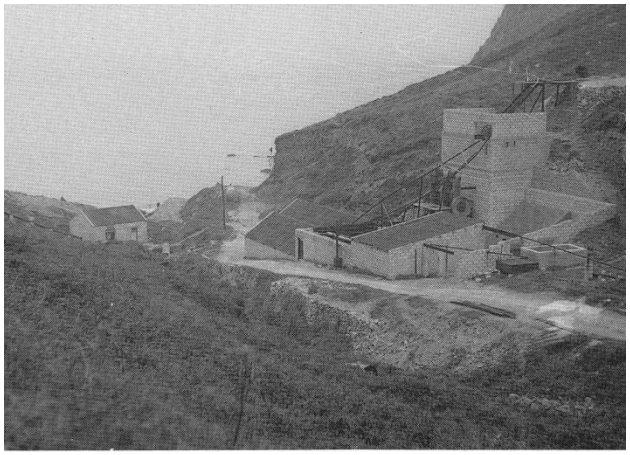

Plate 6- Looking down the valley 1945.

The mine probably stopped working around the end of 1944. Later, in1947, the mill was finally dismantled and its machinery shipped to Nenagh in Ireland

A further set of photographs were taken in 1961. It is not known when the buildings were demolished.

Plate 7 – 1961, engine house in foreground, Pelton house on the left.

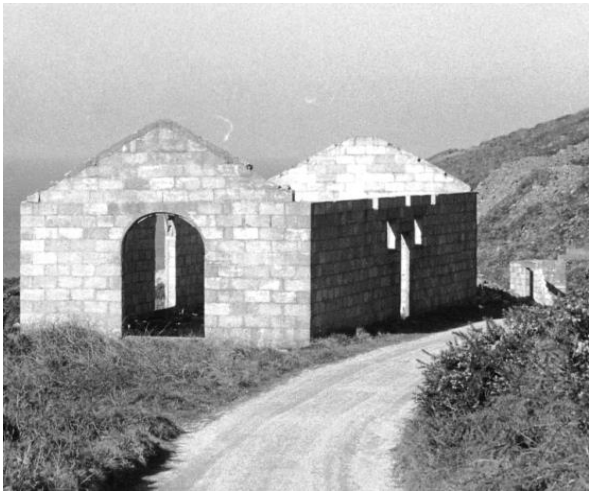

Plate 9 – Building part way up the valley.
Note the arched window similar to the one in the Pelton house**.**

Today, coming down the valley the foundations of the of the buildings shown on the 1916 plan still exist. Down at the mill the buildings have been demolished down to ground level, however the machinery bases in the power house and table section still survive. The ore bin and the stamps foundations have vanished and we are left with a rubbly slope. The tall retaining wall behind the power house survives. Most of the two single storey buildings have disappeared under the car park and only one convex buddle survives. The portal to Deep Adit was covered when the car park was extended. It is, or was, possible to access the portal from inside the mine where the rushing of the water in the stream outside can be heard.

If anyone can add to this, please let me know.

Tin Processing at Wheal Breage

CBMS Field Trip -27th August 2022

By Lawrence Holmes

The weather was fine and warm for the field trip to the home of member Steve Polglase at Great Work Hill, Ashton with 21 members attending. We were there for Steve to give us a demonstration of tin smelting.

The demo took place in the field next to Steve's workshop. Steve began his introduction by mentioning tin smelting at The Minions by Martin Eddy many years ago using a homemade pipe Bunsen burner furnace. Steve explained he had acquired a much more modern smelter which is a CM50 crucible furnace with a charge capacity of about 2kg. The charge comprised tin concentrate plus the addition of 14% of powdered anthracite.

Steve Polglase greeting our group

The apparatus consisted of a steel bowl smelter on swivel with boxed switchgear adjoining. The whole was powered by bottle gas and mains electric. Steve had a supply of tin concentrate (dark brown grains 70-90% tin) and anthracite as well. He then switched on the 'smelter' to warm up which would take about 30 minutes.

Steve then showed everyone his own private 'Polglase Processing Plant' (PPP). Although described as 'Heath Robinson', the plant was well designed and made in miniature. The crusher was a mini four-head California stamps, the ore being derived from a stockpile of high grade material Steve had obtained years ago from the nearby South Wheal Breage working. This ore is very weathered, with high clay and gossanous iron oxide content, similar to that at Hemerdon where Wolf Minerals had all sorts of mining and ore recovery problems.

The stamps (photo Peter Flanagan)

The small stamps were set in motion, ore fed in and a crushed ore slurry emerged. Steve then moved into the workshop where he had a miniature shaking table. Members were interested to see slurry fed in and the tin portion led off as concentrate. It was all very much like the real sized version at KEM. An added bonus was Steve showing members the art of vanning while the table shook away. At this stage Jill Polglase appeared with the makings for tea and coffee, water and lovely cakes. This she set up on a trailer adjoining. Appreciative eyes watched!

By now the 'smelter' had reached temperature and Steve fed in the tin concentrate and then added the anthracite, then another wait. Finally, Steve and Sid Geake swivelled the smelter bowl and poured out the molten tin 'slag' into a ladle.

The furnace

This was not quite 'white tin' but Steve was almost there. Then a mini disaster struck in that the gas supply failed and the smelter 'closed down'. Steve checked the gas supply and connections but the smelter stubbornly refused to keep firing.

Pouring into a ladle

However, resourceful as ever, Steve then connected a Bunsen burner to the gas supply and patiently held a ladle of white tin slag over the flame. His persistence was rewarded and ultimately, he was able to pour white tin into a small tin mould. At long last we had our own smelted white tin in a mould ! Well done, Steve.

Final tin ingot

At 4-30pm Lawrence Holmes brought the meeting to a close and thanked Steve for a superb afternoon. He mentioned Steve was a past Chairman of CBMS and had given the Society many talks and led numerous field trips. We thanked him for his tremendous efforts for the good of the CBMS. Lawrence also thanked Jill for the refreshments. Both Jill and Lawrence agreed that a drink and cake encouraged social togetherness which could only cement the friendships made within the Society.

A Day at the Mine, 11th August 2022

Rather than give you an update of the progress at Great Condurrow, this is a brief description of a typical day at the mine.

As Clive Addington, our skip loading expert, was to be away for the next three weeks, and as the underground bin was full, it was decided to have a hoisting day. I assisted Clive skip loading and some nine full skips (there is some argument as to the actual number) and 3 skips of large rocks were hoisted - a record. We generate quite a lot of rocks that are too big to go through the grizzley and thence into the bin below the haulage. These are removed from the mine by fitting a false floor in the skip such that the rocks can be put in by hand underground and then lifted out on surface.

Peter Jenkin and Peter Flanagan loaded three full wagons from the collapse - we can see real progress here. The mine was very dry that made both haulage clearing and skip loading a lot more pleasant than usual.

Jon Nurhonen had a look at our next big project - namely altering the main access ladderway from two long ladders to four short ones. The present ones, at approximately 30-ft, are too long and some of us need more than one rest when climbing to surface. This will involve putting in two intermediate platforms. The tentative plan is to start from the bottom, drill a set of pin holes just up the raise, put in a temporary platform and then repeat the exercise up the raise until the position of the

first new platform is reached whereupon the permanent the new ladder platform can be installed.

Later Jon came down and smashed up rocks that had been dumped by the shaft but were too big to hand load onto the skip.

The surface crew – Guy Travers, Geoff Purcell, Sid Geake and Steve Polglase hoisted and cleared away the waste rock. Steve extended the dump retaining wall - which looks great. They did well considering the amount of rock hoisted and the above average surface temperature. It was described, somewhat dramatically, as being searing heat.

Pauline Geake continued to manage our surface landscape.

Graham Sowell brought in two angle grinders that he had refurbished. These we had bought for almost nothing a couple of weeks previously. New lamps for old? He continued to work on painting the diesel compressor

Notes from the Editor

Tony Brooks

Notes for authors. Please supply the text as a Word document, ideally Times Roman point size 12. Please do not wrap the text around any images or put any borders around the images as it makes it difficult for us to unravel in order to fit our page layout. Just put them in the text approximately where you would like to see them.

Programme for 2023

Jan 17 - The Adventures & Misadventures of a Camborne Mining Family by Jean Charman

Feb 21 - to be confirmed – possibly economics

Mar 21 - Tregonning Hill & Clay by Steve Polglase, which will be followed with a field trip to the area on **Sat 25th May.** Meet at 1.00pm, Bal West Chapel car park. TR13 9TE.

Apr 18 - Annual General Meeting followed by TBA possibly films.

15 May - Downalong the Redruth & Chasewater Railway by Eric Rabjohns. This will be followed by a walkabout on **Sat 20th. Details** in March Newssheet.

20 June - Lydford & Stannary Law by Sumon Dell.

18 July - The Red River from source to mouth & prehistory until the present day with Professor H Paul Williams. It is hoped that members will be able to add to the Professor's knowledge with their reminiscences

If you have ideas for the future programme, please tell us!!

Your officers and committee wish you a