



September 2023

The Great Orme Exploration Society

Early Exploration on the Great Orme

1967-72

Original Notes + Transcripts

From the Diaries of

Peter Appleton



www.goes.org.uk

FORWARD

Dear Readers,

Peter Appleton's contemporary accounts of Great Orme mine exploration in the late 60's and early 70's were published in February 2023. This document provides a transcript of his diary entries for those who found the handwriting difficult and would like to read the contents more easily. A big thank you to Keith Morris for the initial idea and his work on typing up the text.

In this publication, Peter's handwritten accounts have been included, mirrored page for page to provide quick reference to the original if so desired, as these have been reduced in size it is best done with a zoom feature. To save space and also to avoid having to second guess the original layout paragraphing has largely been ignored.

Diagrams have been kept much the same with only minimal additions to clarify occasional notation.

A summary of his explorations is provided by Peter. However, in order to facilitate easy reference, a contents page has been drawn up based on the page numbers within this document, of each outing, together with a simple outline of what took place. These are based my own interpretation of the written account, which was greatly aided by Peter's excellent hand drawn plans and cross-sections.

Sometimes, original page numbers are referred to in the text, in which case the new page number within this document has been added alongside.

In both Peter's text and diagrams, levels throughout Roman's and Treweek's were indicated as the approximate distance in feet from surface. For simplicity I have kept to this notation on my contents page. A few present day reference points may be useful.

65ft: Present day bottom of our Roman's entrance pitch.
110ft: Main Chamber level.
130ft: Wagongate level: connection with Treweek's Shaft.
220ft: Today's bottom of Treweek's: passages to Basecamp / chain ladder + dam
330ft: Bottom of Treweek's in the late 1960's

Regards

Dave Wrennall – GOES Chair + Journal Editor 2023

Cover photograph: Top of Roman Shaft 1969 L to R
Chris Williams, Peter Appleton and Graham (Len) Lyon.



All photographs by
Peter Appleton



Items found in the late 60's on partially cleared dumps next to Vivian's Shaft: a stone ore crushing quern and the bottom section of a pump barrel.

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1968

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Oddments near Basecamp. Released dam water. Partially broke through capping of Treweek's.

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↓ 40' winze S of plank = loop to 130'. On 130' more to N, then passage S to Clogs.

p31 **Roman's**: Scaling poles. ↑ Clog passage raise to S of Main Chamber. ↓ 30' (about 40') winze S of plank, it was blocked, chain ladder remains.

Penmorfa Adit: Digging blockage.

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Early Exploration of the Great Orme

Original Notes written by Peter Appleton

EXPLORATIONS AT LLANDUDNO 1967-68; A SUMMARY.

1967.

23rd April. Examination of sea caves and adits on N.E. shore of Great Orme. Two covered shafts noted on top of Orme. PA, HELEN.

22nd May. Examination of workings in cliffs on N.E. shore. The exploration an adit working above the town. Old dumps noted above Gogarth. Hole explored near Gogarth tollgate. AHH, PA.

21st August. Llandudno Reference Library visited, information on mines scanty, but existence of a deep adit on the West Shore indicated. Workings high above Gogarth found to be inaccessible. Deep Adit located but blocked after 60 yards. AHH, PA.

8th September. Discovery of cairn and slab covered shaft on Bryniau Poethion. Exploration of trial levels above Gogarth. PA.

10th September. Descent of shaft found on Bryniau Poethion, and partial exploration of workings therefrom. Clay pipe found. ROMAN, PA, HELEN.

13th September. Further exploration of workings from shaft, discovery of a "Hammer stone" and another clay pipe. Shaft bottomed at 100', larger cavern type workings entered, 20' winze descended and further winze found. LEN, PA.

8th October. Continued exploration of workings. Tunnel followed to deep shaft, descending approx. 200', and ascending to surface. Quantity of tools etc. found; hammers, drills, scraper, pricker, powder horns, straw fuses and lead container, clay pipe, hammer stone, lantern, bottles, wooden buckets, etc.. TREWEAKS, AHH, HAROLD, HELEN, PA.

29th October. Safer route to the further workings found through level at 65' in shaft, avoiding dangerous lower part of shaft. Deep underground shaft explored, level at 40' leading to a rise, levels at 90' leading to extensive workings. Several winzes and rises found, one rise via chain ladder to a reservoir. Four hammer stones found, also felt hat, matches, tenon saw, bamboo container, etc.. ALAN, HAROLD, J.G., PA.

1968.

3rd March. Three other open but shallow shafts noted at surface. Nil prospects of entering workings therefrom. AHH, PA.

10th March. Deep shaft encountered underground located at surface, top very dangerous. Same shaft bottomed underground, but blocked. Further exploration of workings at 90' therein. Reservoir drained, alarmingly fast. AHH, H.M., ?, PA.

16th June. The removal of the top of Bryniau Poethion deep shaft noted. More workings found in higher reaches of the Mine. 30' rise found, also collapsed ladder shaft. Pair of clogs, lenticular shaped bottle, fragments of Welsh newspaper, another powder horn, etc found. AHH, PA.

23rd June. Thirty foot rise scaled, aided by steel scaffold poles. 40' winze descended. AHH, GHL, PA.

20th October. Noted damage to top of 100' shaft. Started dig in Deep Adit, good progress made in adverse conditions. AHH, PA, HELEN.

27th October. Dug through remainder of blockage in Deep Adit. Tunnel followed about half mile to cavernous workings. Tunnel here forked, both branches being followed to their terminations. Two run in shafts located, also flooded winzes and an upward ladderway. Water waist deep in places. AHH, GHL, PA, HELEN.

The above work was carried out by;

P. Appleton, A. Hawkins, and G. Lyon, all of the Shropshire Mining Club, assisted by H. Morris, and by Miss. H. Peters.

Llandudno Explorations 1969/72 etc.**Shropshire Mining Club.****1969**

5th January. Alan Hawkins. Graham (Len) Lyon, Peter Appleton. Descended shaft on Bryniau Poethion (Roman ?) – photographs and recovered relics. Met John Reay and David Jenkins.

12th Jan. AH, GL, PA, Chris Williams, Dave Jenkins, Geoff ? – Penmorfa Adit exploration.

16th February. AH, PA – surface investigation. DJ, CW, John Reay, + 1 – down Bryniau P. Shaft.

30th March. AH, GL, CW, PA, John Reay. – Treweek's Shaft; explored past drained dam (termination inconclusive !) + lower workings with hammer-stones etc.

12th October. AH, CW, PA – Survey of Penmorfa Adit.

2nd November. AH, CW, PA, Richard and Liz Calder – BP shaft upper south workings – ceramic drainage pipes exposed in roof of far south stope - Llandudno Council informed of likely subsidence.

9th Nov. AH, CW, PA, DJ. Bryniau Poethion (Roman) shaft + surface surveying.

21st December. AH, CW, PA. Penmorfa; Stopes above the left-hand tunnel branch climbed with difficulty – greater problems on descent !

1970

11th January. AH, PA – Penmorfa; stopes climbed to + 200ft by 'safer' route.

18th Jan. CW, PA – Penmorfa stopes.

1971

21st February. AH, GL, CW, PA, Terry Davies ('Blogg'), Ian Webb – Penmorfa; highest stope 'adventure' with scaling gear. The rise limiting previous progress was climbed, but debris falls limited progress. More success achieved at a lower level following AH 'acrobatics'.

5th September. PA - Surface walk; Bryniau Poethion revealed that both Treweek's and 'Roman' shafts have been capped with steel joists with a removable central panel to permit access.

1972

25th June. PA, CW, Dave Jenkins, Mel Davies – Penmorfa largest stopes tour.

20th August. PA, CW – Met Ivor Wyn Jones and Mr Morris, the Llandudno Borough Surveyor, re the possible opening of the Ty Gwyn Mine adit near the Pier entrance – no result for our group ! + explored a short adit some 300yds SE of the Lighthouse – trial with no real interest.

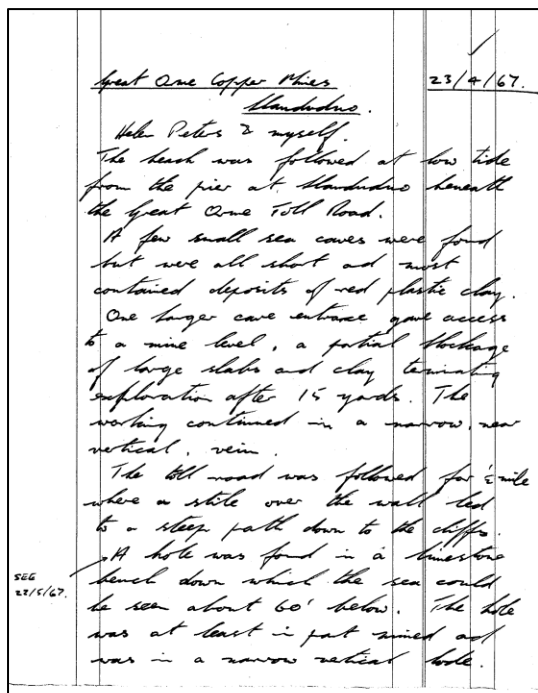
North Wales Caving Club.**1983**

NWCC Penmorfa 'tourist' trip. PA, Tony King, Phil Hunter, Rod Goslin, Andrew Loxham, Kevin? Phil?

Great Orme Copper Mines, Llandudno

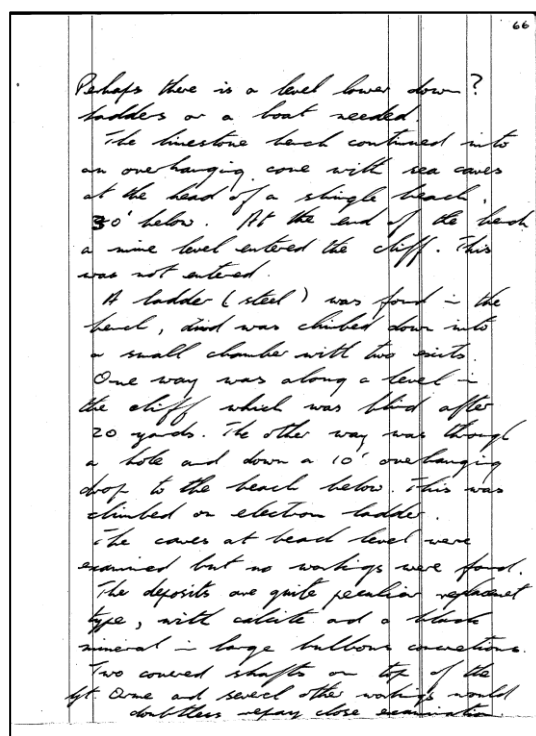
23/4/67

Helen Peters & myself



The beach was followed at low tide from the pier at Llandudno beneath the Great Orme Toll Road. A few small sea caves were found but all were short and most contained deposits of red plastic clay. One larger cave entrance gave access to a mine level, a partial blockage of large slabs and clay terminating exploration after 15 yards. The working continued in a narrow, near vertical, vein. The toll road was followed for half a mile where a stile over the wall led to a steep path down to the cliffs. A hole was found in a limestone bench down which the sea could be seen about 60ft below. The hole (See 22/5/67 p.6) was at least in part mined and was in a narrow vertical lode.

Perhaps there is a level lower down? Ladders or a boat needed. The limestone bench continued into an overhanging cove with sea caves at the head of a shingle beach, 30ft below. At the end of the bench a mine level entered the cliff. This was not entered. A ladder (steel) was found in the bench, and was climbed down into a small chamber with two exits. One way was along a level in the cliff which was blind after 20 yards. The other way was through a hole and down a 10ft overhanging drop to the beach below. This was climbed on electron ladder. The caves at beach level were examined but no workings were found. The deposits are quite peculiar replacement type, with calcite and a black mineral in large bulbous concretions. Two covered shafts on top of the Gt Orme and several other workings would doubtless repay close examination.



Pennant, Llandudno & Aberllyn Mines

22/5/67

Alan Hawkins & self

Pennant, Llandudno & Aberllyn Mines. 22/5/67.
Alan Hawkins & self.
 First a visit was made to the old Pennant Mine, 3 mls. E of St. Asaph. Workings extend for about 1/2 mile between Pennant View on the A55, and Bryngwyn Mawr farm. Two shafts were found. One to the S.E. being an engine shaft, partly run in, with much rubbish, and an ivy covered engine house. About 200 yds N.W. was a second shaft in a similar condition to the first, but with a peculiar pump rod arrangement. Neither shaft was descended. A level was found about 100 yds S.E. of the road, below the site of the old mill. This level is apparently used for water supply, and because of this and the deep water, it was not entered. A short trial level was found nearer the road.

First a visit was made to the old Pennant Mine, 3 miles E of St Asaph. Workings extend for about half a mile between Pennant View on the A55, and Bryngwyn Mawr farm. Two shafts were found. One to the SE being an engine shaft, partly run in, with much rubbish, and an ivy covered engine house. About 200 yards NW was a second shaft in a similar condition to the first, but with a peculiar pump rod arrangement. Neither shaft was descended. A level was found about 100yds SE of the road, below the site of the old mill. This level is apparently used for water supply, and because of this and the deep water, it was not entered. A short trial level was found nearer the road.

The main mineral content of the dumps was found to be barytes and galena. Continued to the Great Orme, Llandudno, where the hole in the cliffs, found on 23/4/67, at NGR. 23/778 839 was rigged with 60ft of ladder. After 20ft climbing down a narrow chimney the pitch opened out into a free climb under a cliff overhang, above the sea. A landing was made 60ft down on a slippery sea washed slab of limestone; the entrance to a narrow sea cave, which when explored was found to be too tight after 40ft. Quite an exposed climb over the sea, well worth the effort. The levels seen on the trip of 23/4/67, nearby, were re-examined; the one higher up the cliff requiring a traverse was found to contain a canoe complete with paddles, although there was a hole in the bottom. Levels were both trials.

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The workings on top of the Orme were re-visited but nothing open was found. It was thought that the main adit of the mine would emerge above the town on the S.E. side of the Orme, but after extensive searching no sign of it could be found. A small working at 23/773824 was explored, being a series of tunnels and chambers in a bedding type of deposit. Total length about 200'. The entrance is in a semi collapsed adit mouth overlooking the town. 50 yds up the hillside was another shaft type entrance, now collapsed. A couple of dumps were seen high up on the Gogarth side, but were not examined. Signs of workings at NGR 23/770826 were examined but nothing open was found, and it would appear that the workings were fairly superficial.

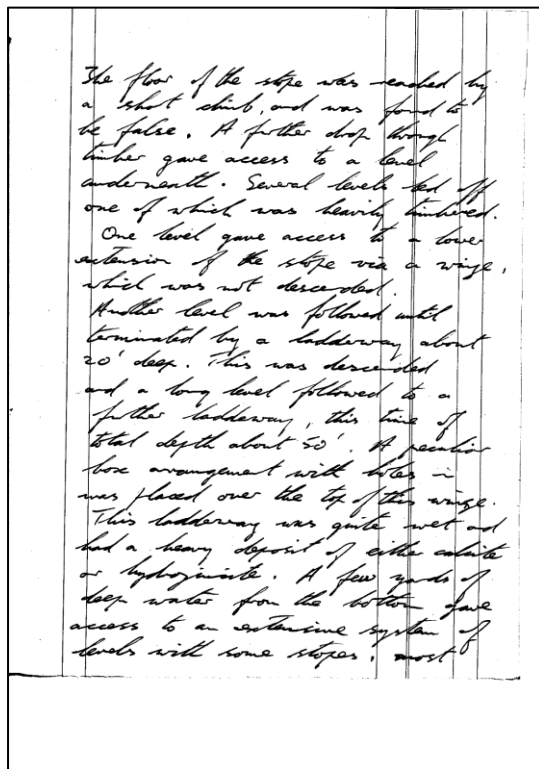
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A dry bedding cave was seen at NGR. 23/772 824, about 30ft in length, no prospects. An old stope 100 yds NW of the old toll gate on the Gogarth side was descended. It was about 30ft in depth, ran parallel to the road for 40ft and headed about 30 deg NE. No prospects, & now used as a dump for garden refuse.

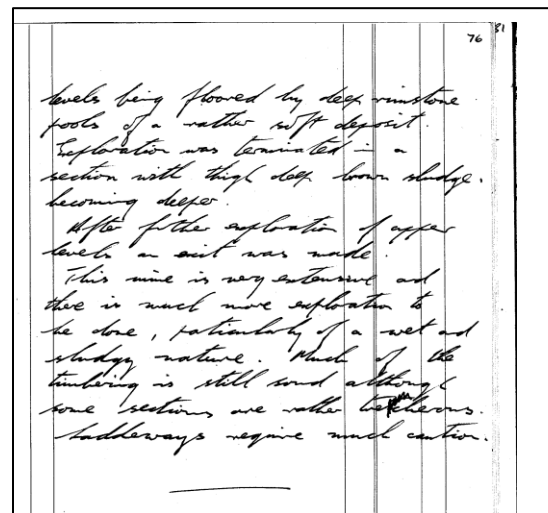
The party left Llandudno for the Aberllyn Mine near Bettws-y-Coed, not having found the main adit of Llandudno Mine. The Aberllyn Mine lies 1ml N of Bettws-y-Coed, extending from the B5106 up to Llyn y Parc. Several adits open into the sides of a steep ravine. One of the upper levels was explored soon entering a very large stope, known as the Cathedral Stope, the walls of which were covered with a white deposit of hydrozincite.

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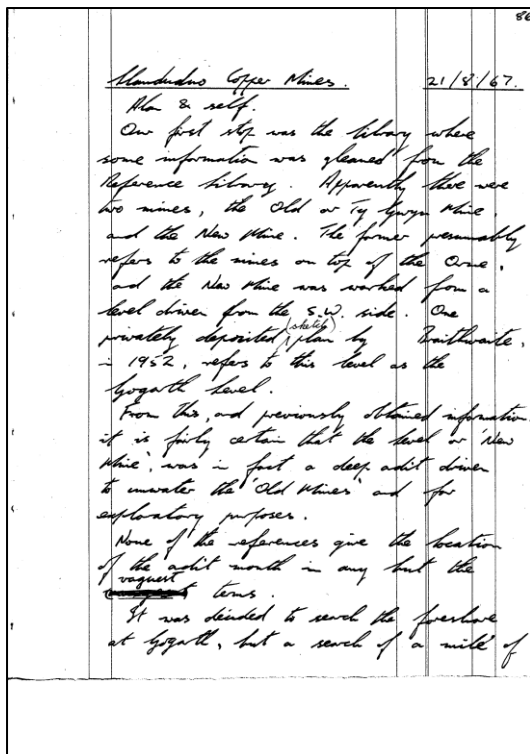
The floor of the stope was reached by a short climb, and was found to be false. A further drop through timber gave access to a level underneath. Several levels led off, one of which was heavily timbered. One level gave access to a lower extension of the stope via a winze, which was not descended. Another level was followed until terminated by a ladderway about 20ft deep. This was descended and a long level followed to a further ladderway, this time of total depth about 50ft. A peculiar box arrangement with holes in was placed over the top of this winze. This ladderway was quite wet and had a heavy deposit of either calcite or hydrozincite. A few yards of deep water from the bottom gave access to an extensive system of levels with some stopes, most...

levels being floored by deep rimstone pools of a rather soft deposit. Exploration was terminated in a section with thigh deep brown sludge, becoming deeper. After further exploration of upper levels an exit was made. This mine is very extensive and there is much more exploration to be done, particularly of a wet and sludgy nature. Much of the timbering is still sound although some sections are rather treacherous. Ladderways require much caution.



Llandudno Copper Mines21/8/67

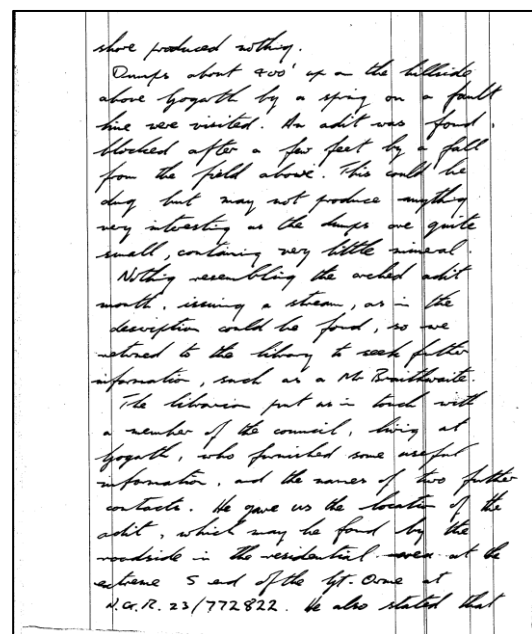
Alan & self



Our first stop was the library where some information was gleaned from the Reference Library. Apparently there were two mines, the Old or Ty Gwyn Mine and the New Mine. The former presumably refers to the mines on top of the Orme, and the New Mine was worked from a level driven from the SW side. One privately deposited sketch plan by Braithwaite, in 1952, refers to the level as the Gogarth Level. From this, and previously obtained information, it is fairly certain that the level or 'New Mine', was in fact a deep adit driven to unwater the 'Old Mines' and for exploratory purposes. None of the references give the location of the adit mouth in any but the vaguest terms. It was decided to search the foreshore at Gogarth, but a search of a mile of...

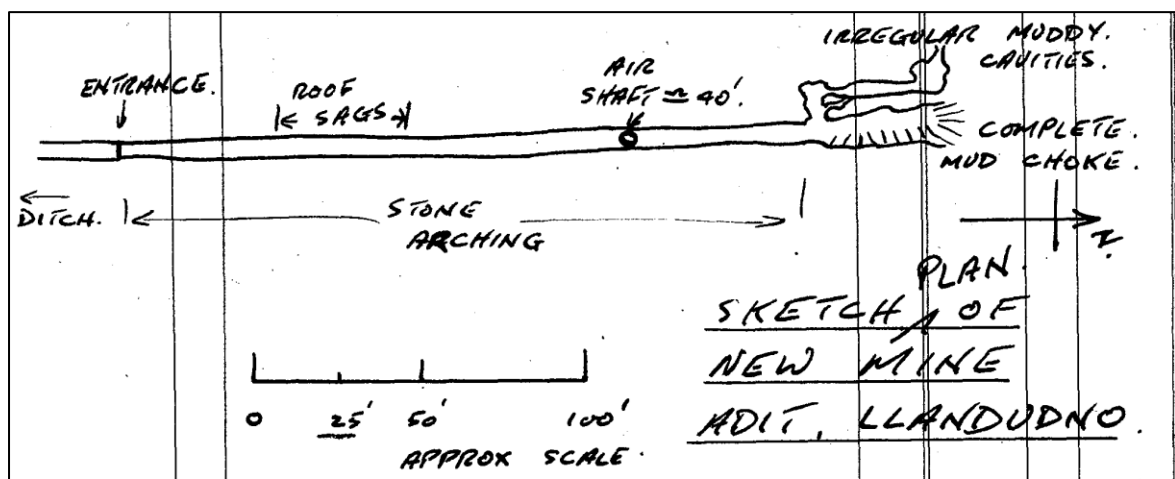
shore produced nothing.

Dumps about 400ft up on the hillside above Gogarth by a spring on a fault line were visited. An adit was found, blocked after a few feet by a fall from the field above. This could be dug but may not produce anything very interesting as the dumps are quite small, containing very little mineral. Nothing resembling the arched adit mouth, issuing a stream, as in the description could be found, so we returned to the library to seek further information, such as a Mr Braithwaite. The librarian put us in touch with a member of the council, living at Gogarth, who furnished some useful information, and the names of two further contacts. He gave us the location of the adit, which may be found by the roadside in the residential area at the extreme S end of the Gt Orme at NGR 23/772 822. He also stated that...



the ore was trammed out onto the foreshore, where it was dressed on the west side of the present day paddling pool, which is fed by water from the adit. It was taken there by boat for smelting. The adit was easily found at the head of a walled ditch, adjacent to a 'cul de sac' and garden. The adit had water about 2½' deep and was driven about 6' high with a railway track still intact. It went straight, about due N. In one section a prominent sag was noticed in the arching. There...

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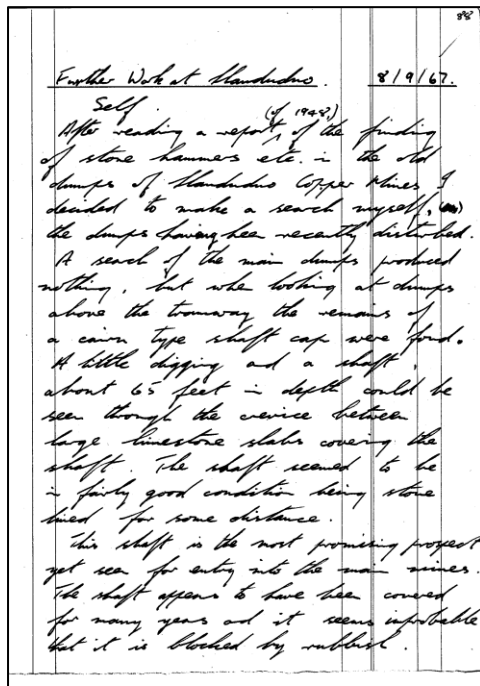


was an air shaft after about 50yds, which was very narrow and in excellent condition. It was covered at the top, about 40ft up. A few yards further and the walling ended in an irregular cavity with masses of glutinous black mud which had caused a total blockage of the tunnel a little further on. A crawl up to the L brought one into little irregular cavities with much mud. This mud appears to have arisen due to the decomposition of a shale bed or clay filled cavity. Returned to surface, where meeting a passer-by, he informed us that as a boy he had wandered along this adit and had climbed out on top of the Orme via a laddered shaft. He also informed us of further workings on the W side. A search for one of these at Gogarth produced nothing. It is proposed to dig in the blockage in the near future.

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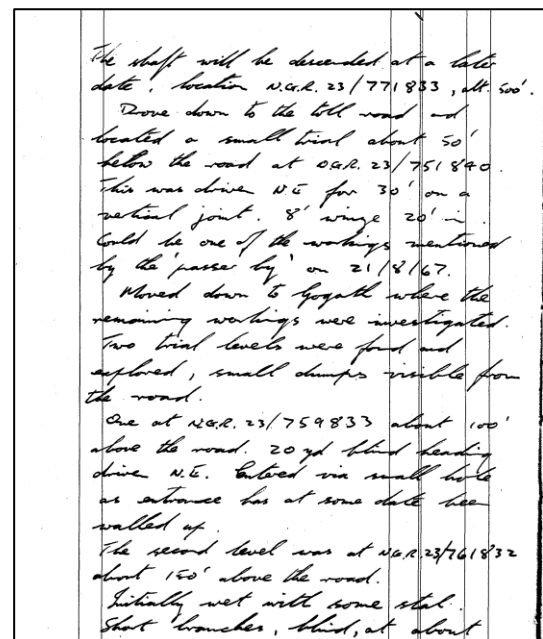
Further Work at Llandudno8/9/67

Self

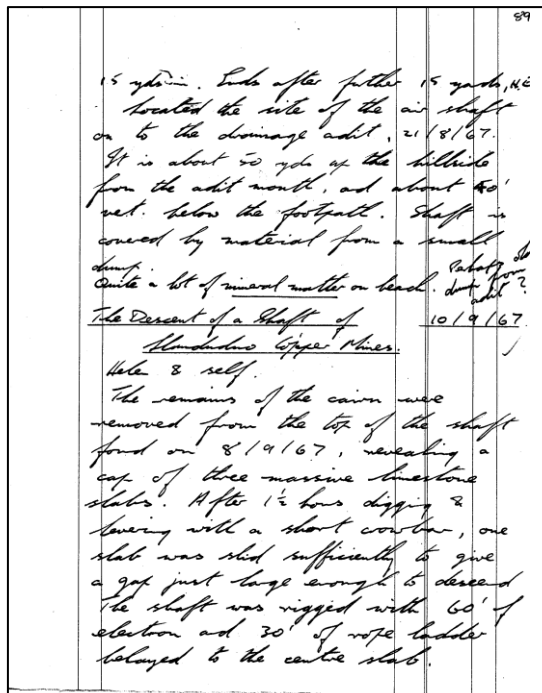


After reading a report (of 1948) of the finding of stone hammers etc. in the old dumps of Llandudno Copper Mines I decided to make a search myself, the dumps having been recently disturbed. A search of the main dumps produced nothing, but when looking at dumps above the tramway the remains of a cairn type shaft cap were found. A little digging and a shaft, about 65ft in depth could be seen through the crevice between large limestone slabs covering the shaft. The shaft seemed to be in fairly good condition being stone lined for some distance. This shaft is the most promising prospect yet seen for entry into the main mines. The shaft appears to have been covered for many years and it seems improbable that it is blocked by rubbish.

The shaft will be descended at a later date, location NGR 23/771 833, alt. 500ft. Drove down to the toll road and located a small trial about 50ft below the road at NGR 23/751 840. This was driven NE for 30ft on a vertical joint. 8ft winze 20ft in. Could be one of the workings mentioned by the 'passer-by' on 21/8/67. Moved down to Gogarth where the remaining workings were investigated. Two trial levels were found and explored, small dumps visible from the road. One at NGR 23/759 833 about 100ft above the road. 20yd blind heading driven NE. Entered via small hole as entrance has at some date been walled up. The second level was at NGR 23/761 832 about 150ft above the road. Initially wet with some stalagmite, short branches, blind, at about...



15yds in. Ends after further 15 yards, NE. Located the site of the air shaft on to the drainage adit, 21/8/67. It is about 50yds up the hillside from the adit mouth, and about 40ft vertical below the footpath. Shaft is covered by material from a small dump. Quite a lot of mineral matter on beach. Perhaps old dump from adit?

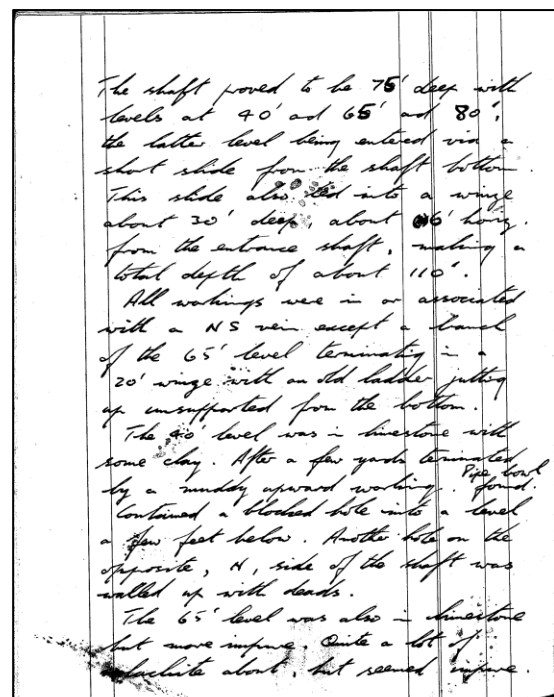


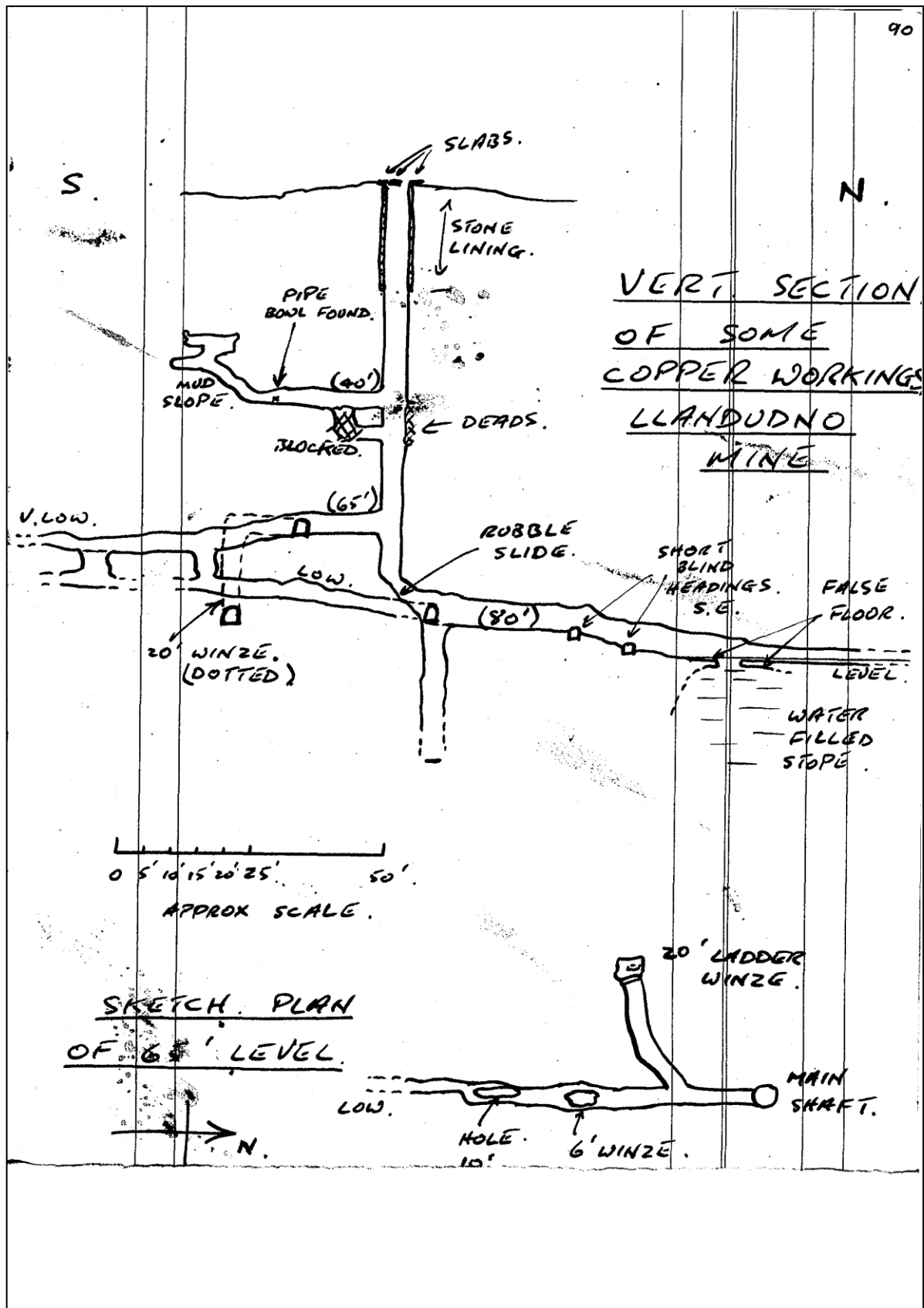
The Descent of a Shaft of Llandudno Copper Mines 10/9/67

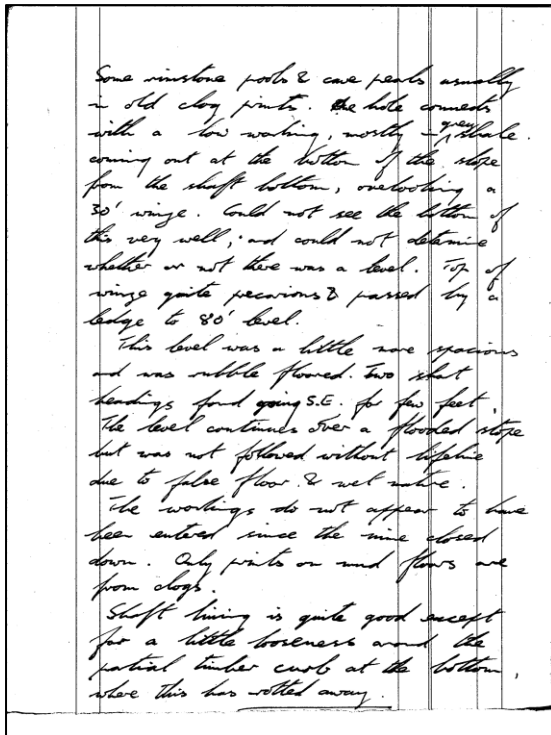
Helen & self

The remains of the cairn were removed from the top of the shaft found on 8/9/67, revealing a cap of three massive limestone slabs. After 1½ hours digging & levering with a short crowbar, one slab was slid sufficiently to give a gap just large enough to descend. The shaft was rigged with 60ft of electron and 30ft of rope ladder belayed to the centre slab.

The shaft proved to be 75ft deep with levels at 40ft and 65ft and 80ft, the latter level being entered via a short slide from the shaft bottom. This slide also led into a winze about 30ft deep, about 6ft long from the entrance shaft, making a total depth of about 110ft. All workings were in or associated with a N-S vein except a branch of the 65ft level terminating in a 20ft winze with an old ladder jutting up unsupported from the bottom. The 40ft level was in limestone with some clay. After a few yards terminated by a muddy upward working. Pipe bowl found. Contained a blocked hole into a level a few feet below. Another hole on the opposite, N side of the shaft was walled up with deads. The 65ft level was also in limestone but more impure. Quite a lot of malachite about, but seemed impure.







Some rimstone pools & cave pearls usually in old clog prints. The hole connects with a low working, mostly in grey shale, coming out at the bottom of the slope from the shaft bottom, overlooking a 30ft winze. Could not see the bottom of this very well, and could not determine whether or not there was a level. Top of winze quite precarious & passed by a ledge to 80ft level. This level was a little more spacious and was rubble floored. Two short headings found going SE for few feet. The level continues over a flooded stope but was not followed without lifeline due to false floor & wet nature. The workings do not appear to have been entered since the mine closed down. Only

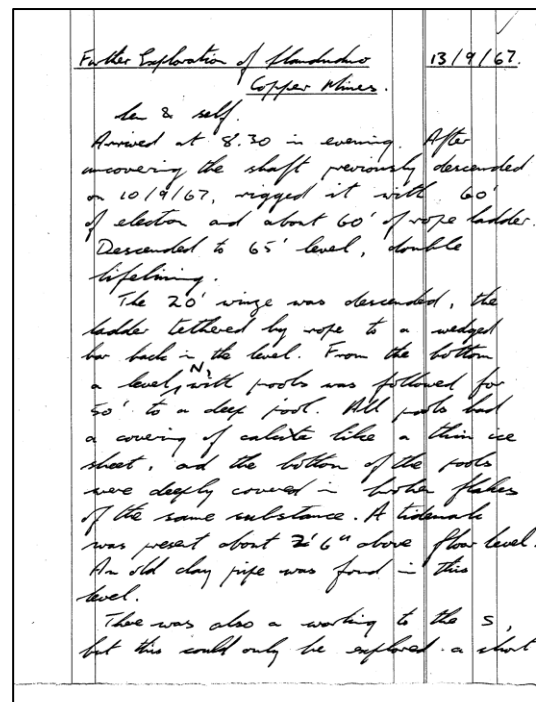
prints on mud floors are from clogs. Shaft lining is quite good except for a little looseness around the partial timber curb at the bottom, where this has rotted away.

Further Exploration of Llandudno Copper Mines

13/9/67

Len & self

Arrived at 8.30 in evening. After uncovering the shaft previously descended on 10/9/67, rigged it with 60ft of electron and about 60ft of rope ladder. Descended to 65ft level, double lifelining. The 20ft winze was descended, the ladder tethered by rope to a wedged bar back in the level. From the bottom a level N with pools was followed for 50ft to a deep pool. All pools had a covering of calcite like a thin ice sheet, and the bottom of the pools were deeply covered in broken flakes of the same substance. A tidemark was present about 2ft 6ins above floor level. An old clay pipe was found in this level. There was also a working to the S, but this could only be explored a short...



distance owing to a constriction caused by a couple of fallen slabs. Continued however through a chamber.

Returned to 65' level and the 80' level was gained via the shaft. The remaining 20' of shaft was descended, and a level found at the bottom at 100' depth.

This level goes W for a few yards, coming to a T junction, where the N passage contains deep water and appears to end after a few yards. The S passage soon opens up into intricate workings one passage coming to a 10' winze with a plank across and rotten ladder in place. The workings are much more spacious here, as they are also further S, passing through quite extensive and irregular stopes. A large greenstone, stone hammer was found in one of these. A further hole was found and it was decided to leave further exploration to a future date when more tackle and time are available.

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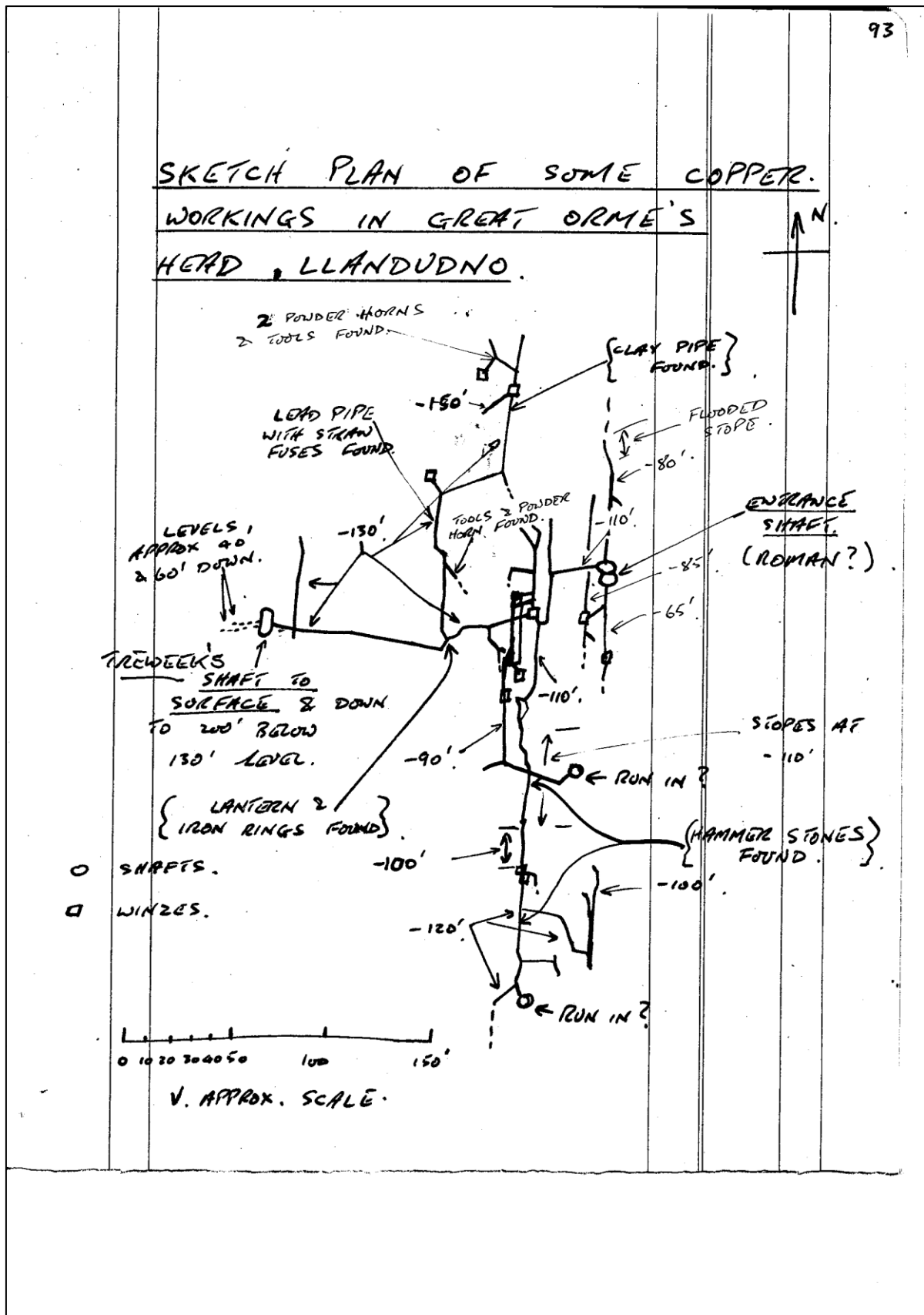
Llandudno Copper Mines

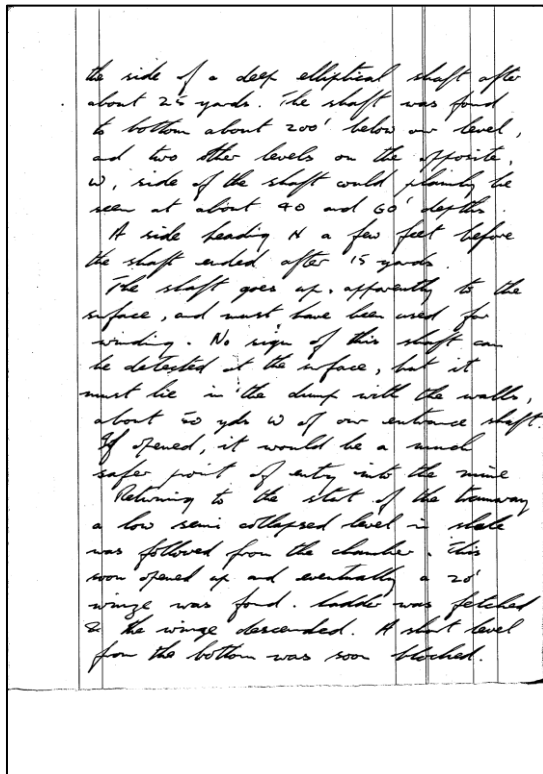
8/10/67

Alan, Harold, Helen & Self

The shaft descended on previous visits was uncovered and rigged, 105ft of ladder being needed. The whole party descended, via 65ft level, to the shaft bottom at 105ft. It was evident from the amount of broken up ladders about, (wooden with square section wrought iron rungs), that this shaft was last used as a ladderway. The level was followed from the shaft bottom to the 10ft winze, (with plank), encountered on the previous visit. This was laddered and descended into a low sloping tunnel cut in black shale. A side passage to the L was followed to a fork, but no further, looks rather mangled. The main passage continued down to a small chamber where a tramway was found with a gauge of about 2ft. This level, about 6ft high, broke into...

Llandudno Copper Mines 8.10.67.
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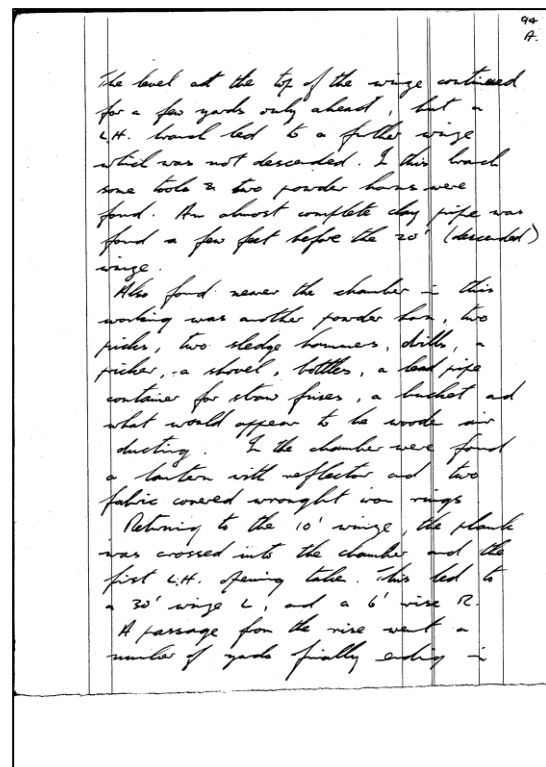




the side of a deep elliptical shaft after about 25 yards. The shaft was found to bottom about 200ft below our level, and two other levels on the opposite, W, side of the shaft could plainly be seen at about 40 and 60 depths. A side heading N a few feet before the shaft ended after 15 yards. The shaft goes up, apparently to the surface, and must have been used for winding. No sign of this shaft can be detected at the surface, but it must lie in the dump with the walls, about 50 yards W of our entrance shaft. If opened, it would be a much safer point of entry into the mine. Returning to the start of the tramway a low semi collapsed level in shale was followed from the chamber. This soon

opened up and eventually a 20ft winze was found. Ladder was fetched & the winze descended. A short level from the bottom was soon blocked.

The level at the top of the winze continued for a few yards only ahead, but a left hand branch led to a further winze which was not descended. In this branch some tools & two powder horns were found. An almost complete clay pipe was found a few feet before the 20ft (descended) winze. Also found nearer the chamber in this working was another powder horn, two picks, two sledge hammers, drills, a pricker, a shovel, bottles, a lead pipe container for straw fuses, a bucket and what would appear to be wooden air ducting. In the chamber were found a lantern with reflector and two fabric covered wrought iron rings. Returning to the 10ft winze, the plank was crossed into the chamber and the first left hand opening taken. This led to a 30ft winze left, and a 6ft winze right. A passage from the rise went a number of yards finally ending in...



94
3.
a blockage or 'run in'. A further winze was found, about 40' deep and pieces of stal found.
The second L.H. passage from the chamber was not followed far, it had small section. Other passages were blind.
A borehole in the roof of the chamber issued a fair flow of water, perhaps connecting with the flooded working above.
The large stopes found on the previous trip were re-entered, a 6' all wooden ladder leading to a continuation and a 20' pitch which was laddered & descended. The belay was altered after some large boulders were dislodged. In the level from this pitch a further, smaller hammer stone, also of greenstone, was found.
Two low rambling workings were followed and a third reminiscent of Llanymynech, was not followed far. Shotholes were absent in the latter and the working continued at a height of about 2' 6", many clog marks about

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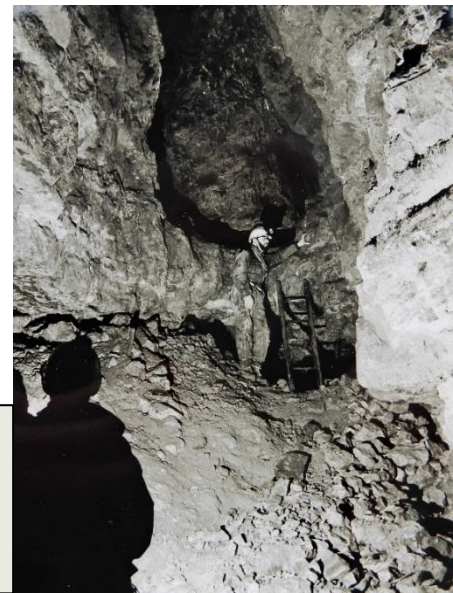
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Roman's
October
1967



Alan
Hawkins in
Roman's
October
1967

Llandudno Copper Mines29/10/67

The party consisted of Alan, Harold, 'J.G.' & Self.

The object of the trip was to find a way round the 'dog leg' of the entrance shaft and the exploration of the deep shaft found on the previous trip. The entrance shaft (Nº1) was rigged with 75ft of ladder and double lifeline, the party descending to the 65ft level.

Llandudno Copper Mines 29.10.67
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 The object of the trip was to find a way round the 'dog leg' of the entrance shaft and the exploration of the deep shaft found on the previous trip.
 The entrance shaft was rigged with 75' of ladder and double lifeline, the party descending to the 65' level. Further exploration of this level via the '10' hole' gave access to workings which after a number of yards entered the stopes where the first hammer stones were found, thus giving, as hoped, an alternative way down to the dangerous lower section of the entrance shaft.
 The tackle was brought down and the 10' winze (with plank) was negotiated with little difficulty by rope, conserving ladder.
 The 200' shaft was reached and rigged with the remaining 150' of electron ladder belayed to a convenient iron ring, to which the lifeline pulley was also attached. An auxiliary belay was

Further exploration of this level via the '10ft hole' gave access to workings which after a number of yards entered the stopes where the first hammer stones were found, thus giving, as hoped, an alternative way down to the dangerous lower section of the entrance shaft. The tackle was brought down and the 10ft winze (with plank) was negotiated with little difficulty by rope, conserving ladder. The 200ft shaft (Nº2) was reached and rigged with the remaining 150ft of electron ladder belayed to a convenient iron ring, to which the lifeline pulley was also attached. An auxiliary belay was...

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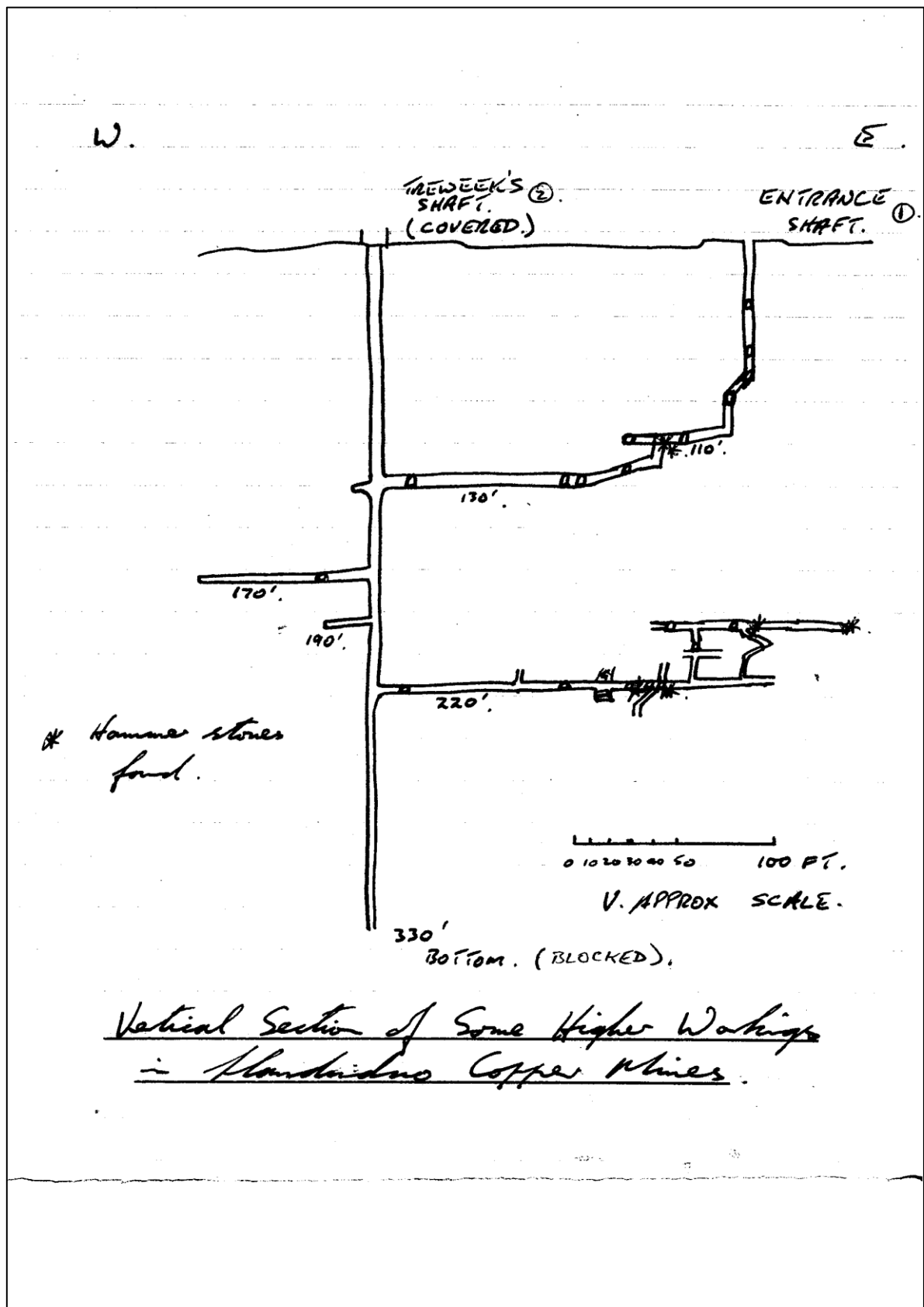
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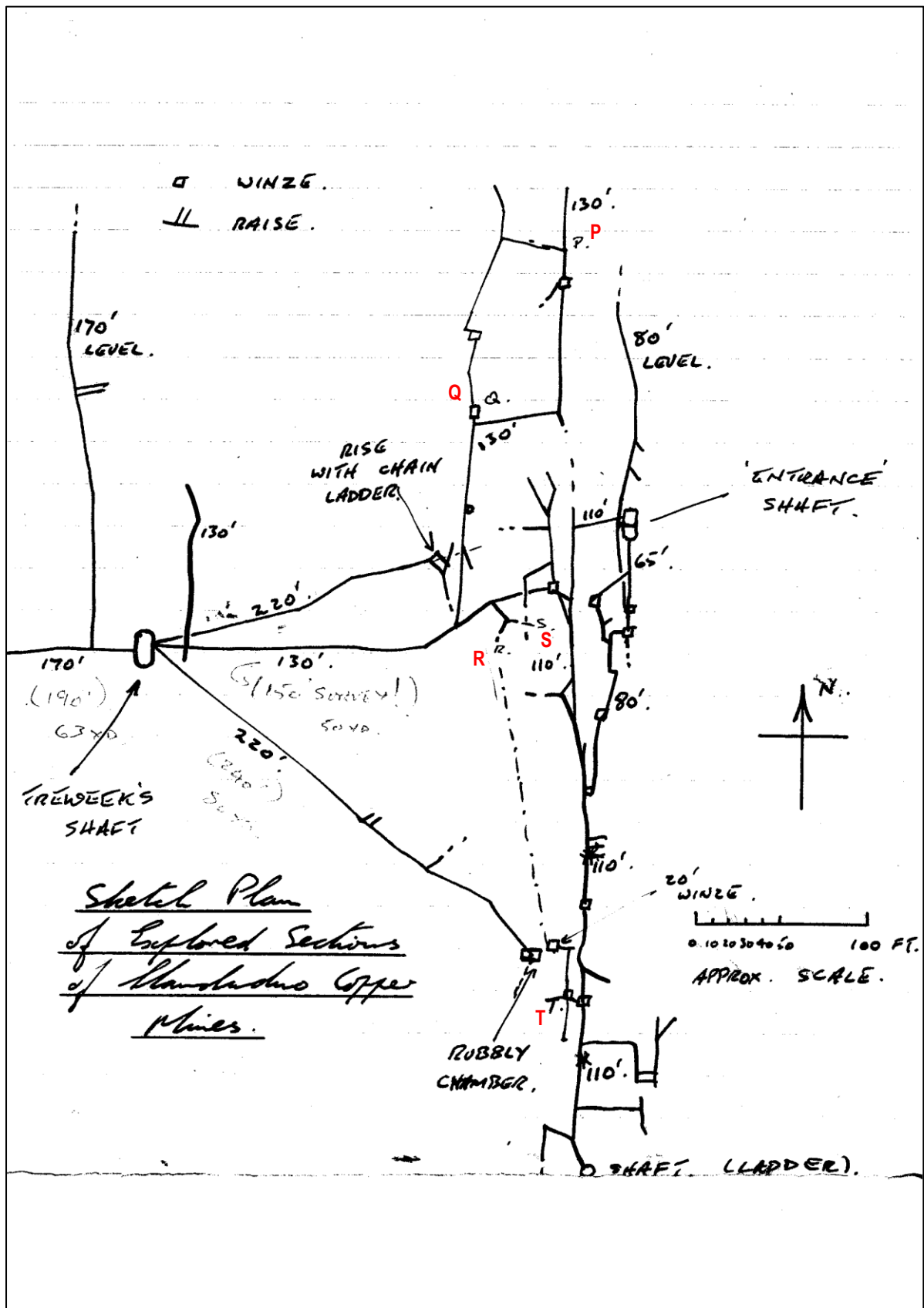
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13.
The whole party climbed down to the 220' level which was then explored. As previously stated two tunnels led off, one leading SE being first explored. After a number of yards this level was partially blocked by rubble which had fallen out of a rise, and was rather unstable. After some excavation the hole in the roof became blocked with jammed boulders and it was safe to crawl underneath to the open level beyond. A low branch on the L was passed and a little further on a very shattered chamber was entered. This had a doubtful sort of roof consisting largely of large boulders. On entering this chamber a draught could be felt moving outward towards the shaft. The floor of the chamber was a chaotic mess of timber and boulders with a large boulder perched crazily on the end of an iron pipe protruding out of the rubble. A stope underneath the floor was found to be blocked, but after a little excavation a level was entered on the far side of the chamber 10' below the point of access.

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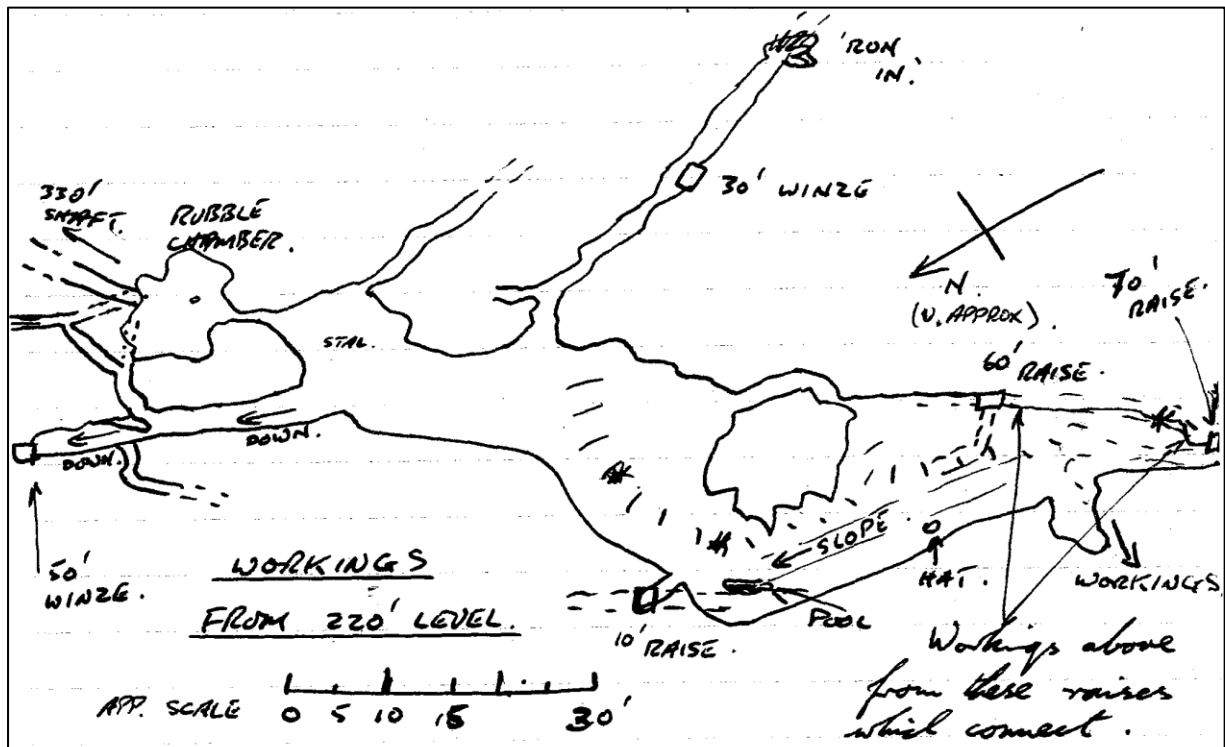
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This level opened out immediately into a fairly large irregular chamber, (See sketch p.23). The floor was liberally strewn with rubble among which were broken pieces of greenish stalagmite, and crystalline malachite. From the left side led two levels, one of which had a 30ft winze which was not descended. Immediately to the R in the chamber was a steeply sloping passage which soon forked, one branch leading to a constricted working opening out into a...

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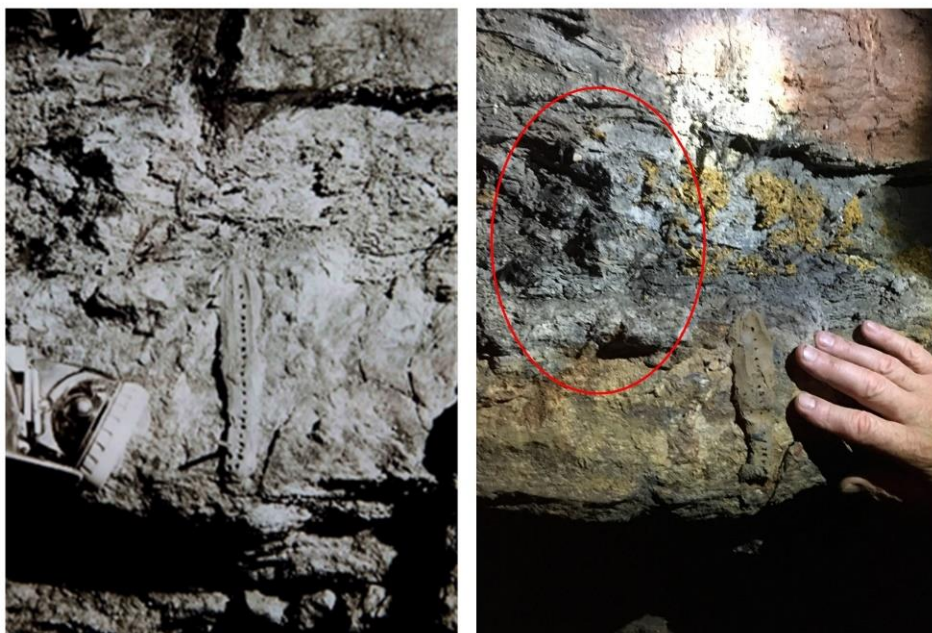
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Peter's 'fairly large irregular chamber' together with passages in the area

The chamber is now known as Basecamp



Peter's B+W photograph shows a shot counter, made of clay with a wooden marker, originally described as being found in Penmorfa. It was recently rediscovered in Romans, as seen by the wall features circled in red. Unfortunately it has deteriorated, probably due to being inadvertently brushed against. (Colour photo A Lewis).

wet but blind level, issuing a small stream from a blockage, through which the sound of water could be heard.

The other branch continued down through a rubble hole opening into a steeply sloping chamber with steps, all terminating in a loose winze about 50' in depth. A low side passage from this chamber was not explored.

Back to the larger chamber where the next passage on the R opened into a 10' raise, not climbed, but had a level above going in two directions.

From this point the chamber rose along a slope down which ran a small stream into a pool containing a large number of cave pearls. An old felt hat was found on this slope.

Two raises were explored one in the middle of the chamber issuing a stream, and the other a zig-zagging affair at the far end of the chamber. They both led up into a series of interconnecting workings extending approx 70' above the chamber. Some of the workings were rather hairy, the roof over some

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places consisting entirely of arched boulders, some of enormous size. A hammer stone was found here as part of a pack supporting a wall, and another was found lying on the floor of a level. What appeared to be a bamboo container was found in a level issuing a stream into the central raise and entered via a chain upon which is suspended a length of wooden ladder. Two dark green hammer stones, well used and each with flat faces, were found, one among loose deads, and the other built into a deads wall in the main chamber. None were taken out. The mode of occurrence of these stones suggests that they were of no use to the miners in the later phase of working the mines, and that they are in fact of ancient date, found by the miners in the older working, which they have obliterated. Further evidence of former working is given by the occurrence of broken stalagmite which must have formed in those older workings over the centuries, for no natural cavities have...

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yet been found in the workings to account for the stal.

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The party then made its way slowly to the surface. On the way the 170' level in the 330' shaft was entered & explored. It soon branched the LH soon terminating. The RH was followed for about 200ft when a state of almost complete blockage was reached. A raise was passed which was narrow, partly timbered and curved

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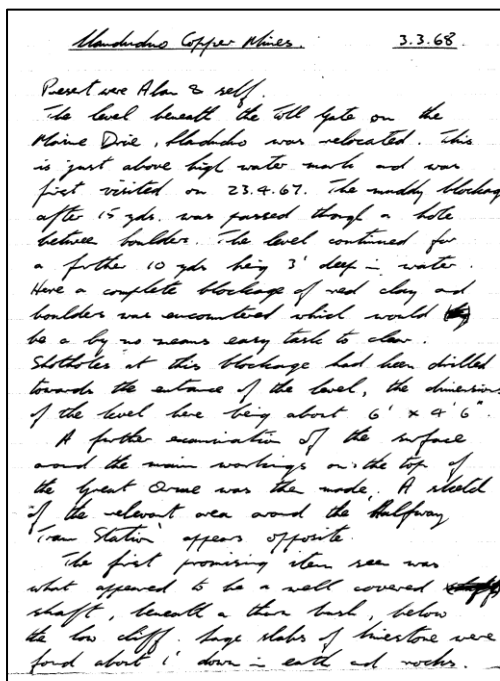
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out of sight after 30ft. The party returned to surface and were soon joined by a local man who mentioned several other holes nearby and the presence of a walled up adit opposite the main door of the Grand Hotel Llandudno. This was investigated later and what appeared to be an old entrance could be made out as a section of a massive wall of limestone blocks. There was a slight water seepage. The wall did not yield to vigorous blows of a piton hammer!! From the evidence of the hammer stones and stalagmite, it is pretty certain that the ancients, be they Roman, pre-Roman or later, did work the mines at least to a depth of 230ft below surface, at which depth two stones were found. It would seem likely that they followed the veins down from the valley sides approx 70ft lower down than the shafts we descended.

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Llandudno Copper Mines3.3.68

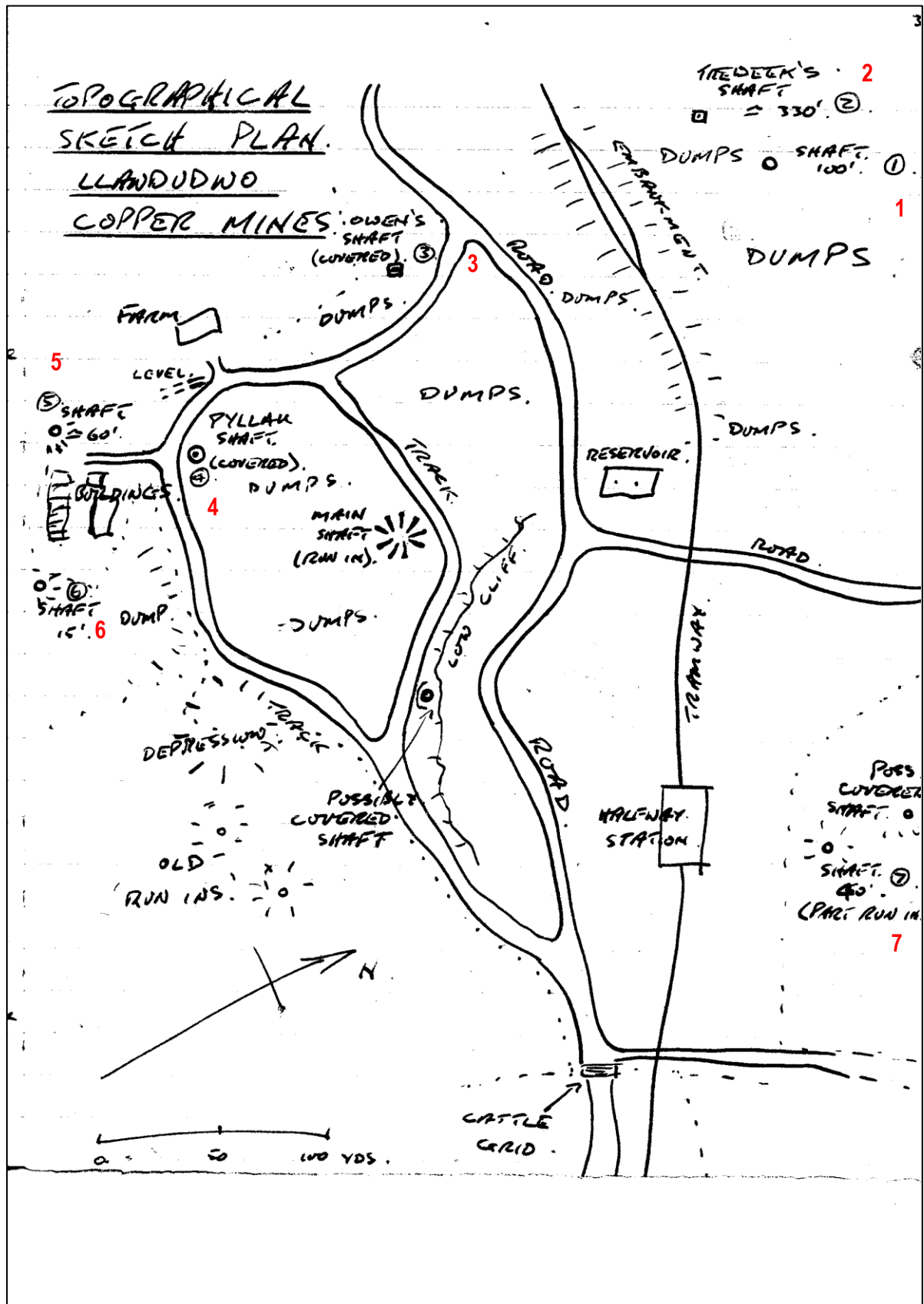
Present were Alan and self.

The level beneath the Toll Gate on the Marine Drive, Llandudno was relocated. This is just above high water mark and was first visited on 23/4/67. The muddy blockage after 15yds was passed through a hole between boulders. The level continued for a further 10yds being 3ft deep in water. Here a complete blockage of red clay and boulders was encountered which would be a by no means easy task to clear. Shotholes at this blockage had been drilled towards the entrance of the level, the dimensions of the level here

being about 6ft x 4ft 6ins. A further examination of the surface around the main workings on the top of the Great Orme was then made. A sketch of the relevant area round the Halfway Tram Station appears opposite. (p.27) The first promising item seen was what appeared to be a well covered shaft, beneath a thorn bush, below the low cliff. Large slabs of limestone were found about 1ft down in earth and rocks.

This 'dig' is in an alcove in the cliff, partially walled around. The dump near old buildings opposite may yield a shaft after some digging. On the hillside above this an open 15ft shaft (N°6) was found, partially covered by a cairn. 50 yards away behind some farm outbuildings another open shaft, (N°5) surrounded by a thick thorn bush was found. This is about 60ft in depth. The farmer was met, and he told us of a level behind one of his sheds but this was not examined. He stated that a hole had recently appeared in the field behind the tram station. This was found as being a 40ft shaft (N°7) in very dangerous condition, the lining having fallen away, leaving unsupported sides of earth and boulders. There could possibly be another shaft, covered over, under the nearby dump. We now have located seven more or less clear shafts in this vicinity, three of which are covered over, with the possibility of finding one or two more by digging.

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Llandudno Copper Mines. 10.3.68.

Alan & myself met Harold and ? at Llandudno.

The entrance pitch (Marked N°1 on p.31) was rigged and descended by Alan and myself only. About 350' of ladder and 700' of rope was laboriously taken through the workings to the 200' pitch - shaft N°2 (Diagram p.31).

This shaft was rigged from the 130' level with 240' of ladder and 500' of rope for double lifeline. Ladder & lifeline pulley belayed to iron ring in wall, with two additional belay points.

A rather damp descent was made to the shaft bottom at about 200', which was found to be blocked. The shaft begins to open out here, in a rubbly slope leading into a pool, with water reaching the roof. No prospects. Climbed back up to 220' level, (Diagram p.12 p.20). From this level the 30' winze and the 10' raise, (Diagram p.15 p.23), were explored. The winze went into a small blocked stope, while the level over the winze...

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terminated in a run in after a few yards. Some workings from the 10ft raise, climbed by back & foot, seemed quite old, but were all choked after short distances. Much broken stalagmite fragments found here. Some difficulty was experienced climbing down the winze which is in fact 15ft high. A piton, wire belay and nylon sling had to be left behind as a result. The other branch of the 220ft level was followed, and the two 10ft raises climbed to the tunnel containing the 3ft deep dammed pool (p.18 p.25). It was decided to drain the pool, and a small hole was made at the

base of the dam. It was intended that the pool would be slowly drained, to permit exploration of the tunnel at a later date. A return was made to the shaft and Alan climbed up to the 130ft level. Tackle was then hoisted up, but became jammed in the ladder. Meanwhile I could hear a steadily increasing rumble from the direction of the dam behind me and it would appear that the water flow through the dam had increased alarmingly. The rope was freed eventually for the...

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lifeline and I ascended frantically. The ladder was hoisted rapidly to the 130' level, and a few seconds later water could be heard gushing into the shaft from the 220' level taking a number of rocks with it.

A slow return was made to the entrance pitch with all the tackle. A shout by Harold through the N°2 shaft indicated he had broke through the cap, also explaining the trickling of stones down the shaft noticed previously.

The surface was reached after the surface party had hauled all the gear out, the underground party being in a rather sorry condition.

The cap of shaft N°2, 330' deep, was found to be in a most dangerous condition being about a foot of rocks & debris supported on very rotten timbers. Harold noted that shaft N°5, was an old depository for unwanted farm animals, level nearby was blocked up. He had no success in digging the possible shaft beneath low cliff (p.30 p.26) but reckoned there to possibly be a shaft above the tramway, behind the reservoir.

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Llandudno Copper Mines

16.6.68

Alan and self

It was immediately observed that the cap and lining of the 330ft shaft, N°2, had disappeared, a fence now surrounding an ugly hole in the hillside. The shaft did not appear to have been appreciably filled up. The entrance shaft, N°1, was rigged and descended with the intention of exploring the remainder of the upper workings. The northern end of the 80ft level was followed over the flooded stope where the level had a short branch to the left. The main level continued for a number of yards when the level sloped downwards, water reaching the roof. Much cave ice was seen here. The SW passage from 'plank' chamber was followed and the 1st winze, about 40ft descended. This led into a short crawl leading after a few feet into the chamber at the end of the railway to the 330ft shaft at the 130ft level, the operation thus being rather a waste...

Llandudno Copper Mines.

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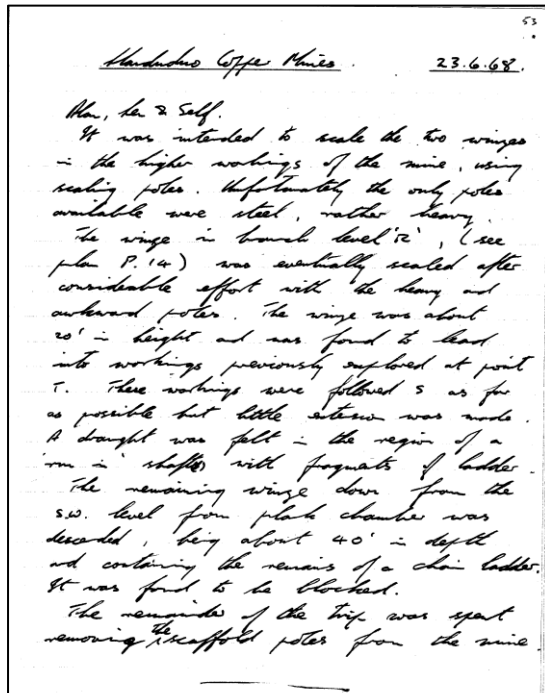
of time.
 The northern part of the 130' level was
 visited the level at P, (see page 10)
 being found to connect via a 10' drop, with
 the bottom of the rubble winze at Q.
 A narrow passage was followed S
 from below the 10' pit to under the plank.
 The passage forked, branch S narrowing
 down in shaley workings with some timber.
 Branch R followed a irregular southerly
 course coming after a number of yards to
 an 8' wide rise of about 20' in height
 with an old timber staging at the top. It
 was impossible to climb. The level
 continued and soon split up into a
 number of irregular workings in one of
 which an old bottle was found. The
 bottle was lenticular shape having a
 sharply rounded bottom.
 Some pieces of newspaper, mostly finely
 printed Welsh were found, also various
 other items.
 In one working to the S a pair of
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either to an end or were blocked. Quite a strong outward draught was present however. The most likely prospect seems to be the rise which may connect with another shaft or lead into a main level. Scaling poles would be necessary. An exit was then made to the surface where we were soon greeted by a Mr Ivor Wyn Jones of the Daily Post. He brought us a record of an interview with an old miner of Llandudno which proved to be very interesting, if somewhat confused. He told us also of the Ty Gwyn mine which was worked from shafts and levels overlooking the town at the east shore. He was most interested in our progress as he was busy compiling a history of Llandudno, and requested information from us of the mines, which we consented to give.

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Llandudno Copper Mines23/6/68

Alan, Len & Self

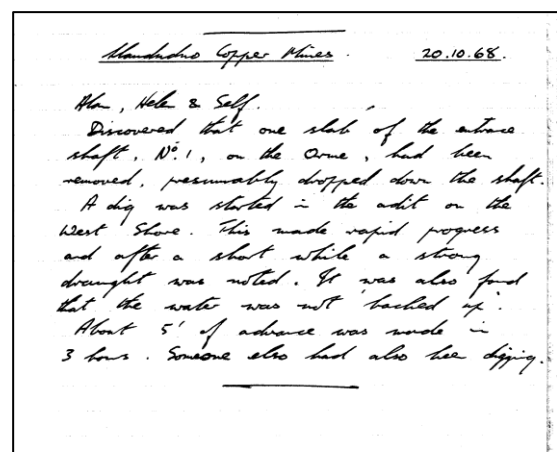
It was intended to scale the two winzes in the higher workings of the mine, using scaling poles. Unfortunately the only poles available were steel, rather heavy. The winze in branch level **R** (see plan p.14 [p.21](#)) was eventually scaled after considerable effort with the heavy and awkward poles. The winze was about 20ft in height and was found to lead into workings previously explored at point **T**. These workings were followed **S** as far as possible but little extension was made. A draught was felt in

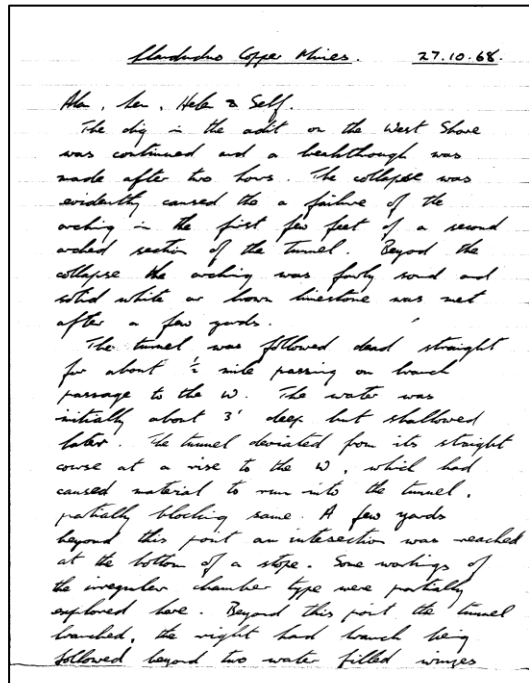
the region of a 'run in' shaft with fragments of ladder. The remaining winze down from the SW level from plank chamber was descended, being about 40ft in depth and containing the remains of a chain ladder. It was found to be blocked. The remainder of the trip was spent removing the scaffold poles from the mine.

Llandudno Copper Mines20/10/68

Alan, Helen & Self

Discovered that one slab of the entrance shaft, N°1, on the Orme, had been removed, presumably dropped down the shaft. A dig was started in the adit on the West Shore. This made rapid progress and after a short while a strong draught was noted. It was also found that the water was not 'backed up'. About 5ft of advance was made in 3 hours. Someone else had also been digging.



Llandudno Copper Mines27/10/68

Alan, Len, Helen & Self

The dig in the adit on the West Shore continued and a breakthrough was made after two hours. The collapse was evidently caused by a failure of the arching in the first few feet of a second arched section of the tunnel. Beyond the collapse the arching was fairly sound and solid white or brown limestone was met after a few yards. The tunnel was followed dead straight for about $\frac{1}{2}$ mile passing a branch to the W. The water was initially about 3ft deep but shallowed later. The

tunnel deviated from its straight course at a rise to the W, which had caused material to run into the tunnel, partially blocking same. A few yards beyond this point an intersection was reached at the bottom of a stope. Some workings of the irregular chamber type were partially explored here. Beyond this point the tunnel branched, the right hand branch being followed beyond two water filled winzes...

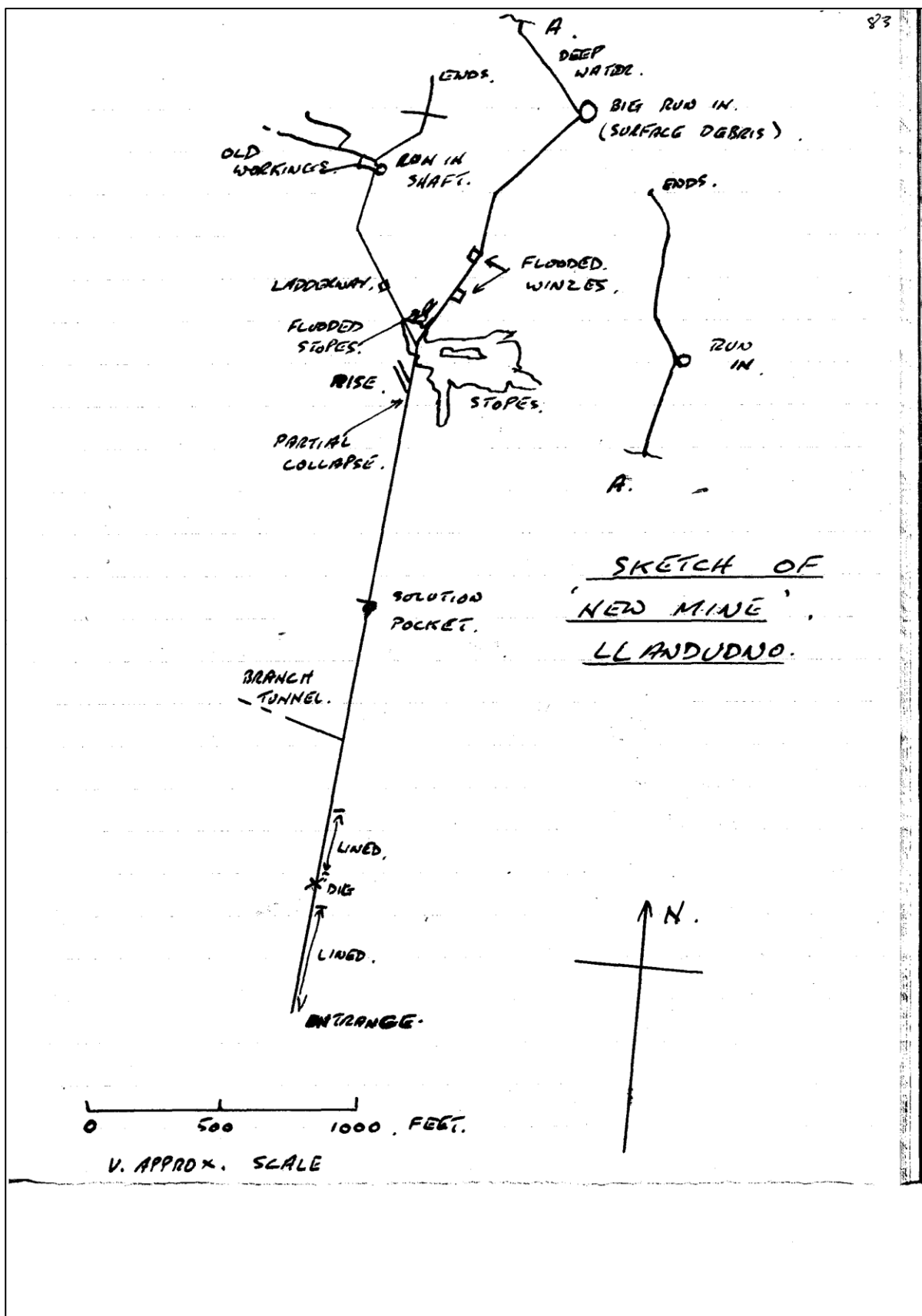
eventually to the run in of what must have been a large shaft, which issued a stream. Much debris has been swept down the tunnel from this shaft. A tunnel to the L here was followed through deep water, gradually shallowing and disappearing at a slight rise. Beyond this was a short branch R, to a blockage or run in, the tunnel coming to an end soon afterwards. A black substance here has oozed out of pores in the rock. Numerous tiny cave pearls were also noted hereabouts. A retreat was made and the other branch of the main tunnel followed. A ladderway on the left was not climbed. Some workings were soon reached which proved on brief examination to be not extensive. The tunnel continued after a 'run in' shaft but floor was divided from the roof by boarding sealed with clay, probably for air circulation. The tunnel soon ended. The party returned to the entrance of the tunnel.

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Llandudno Copper Mines5/1/69

Alan, Len & Self

Met Dr Jenkins of Bangor University, also John Reay a Llandudno photographer with a friend of the local mountain rescue team. Ivor Wyn Jones, journalist also turned up. After a chat on our various interests re the Copper Mines during which we agreed on a policy of cooperation, some of the crowd went with John

Reay in a futile attempt to locate an adit of the old Ty Gwyn Mine. During the afternoon after an incident involving a burning car on the edge of the cliffs, Alan, Len & myself descended to the shallower workings from the 100ft shaft on the Orme, taking photographs and bringing out various relics not retrieved previously.

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Llandudno Copper Mines12/1/69

Llandudno Copper Mines 12.1.69.
 The party consisted of Alan, Len, Dave Jenkins, Chris Williams, Geoff ? and self.
 The deep Adit was entered and the passage encountered going W about half way along the straight section of the tunnel was explored. The branch was only about 40 feet in length and had been driven through a series of crystal lined solution cavities with poor copper mineralisation as malachite. The passage terminated in a sump.
 The main tunnel was regained and followed to its bifurcation. 5 yards along the left hand or N.W. trending branch, the 10' rise, issuing a stream and having a launder, was climbed. A left hand passage was blocked with deads after a few yards but the right hand passage went through a small hole and upwards into the floor of an old stope. A rise once laddered, in the corner of this stope was climbed for about 50' when further stopes were accessible but not explored due to their precarious condition. A trapdoor opening above could not be safely reached without the use of a lifeline.

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yards but the RH passage went through a small hole and upwards into the floor of an old stope. A rise, once laddered, in the corner of this stope was climbed for about 50ft when further stopes were accessible but not explored due to their precarious condition. A trapdoor opening above could not be safely reached without the use of a lifeline.

A few yards further along the L.H. branch tunnel was a laddered rise. This was climbed, being only about 15' in all, to an intersection of irregular tunnels, where some old drills, a tamper and pricker were found. An upward tunnel led via a short crawl, right, to a series of quite extensive and wide stopes, with much loose material about. Various short ramifying workings were inspected, but the main stopes were not followed far, due in part to the limited amount of equipment available. Another route was found leading back to the laddered rise via a flooded winze, which once had a windlass in place over it.

Several photographs were taken in the region of the main tunnel intersection after which the right hand branch was followed to its termination where more photographs were taken of cave pearls etc. Returned to the surface where several happy minutes were spent floating around the boating lake in our inflated exposure suits.

A few yards further along the LH branch tunnel was a laddered rise. This was climbed, being only about 15ft in all, to an intersection of irregular tunnels, where some old drills, a tamper and pricker were found. An upward tunnel led via a short crawl, right, to a series of quite extensive and wide stopes, with much loose material about. Various short ramifying workings were inspected, but the main stopes were not followed far, due in part to the limited amount of equipment available. Another route was found leading back to the laddered rise via a flooded winze, which once had a windlass in place over it. Several photographs were taken in the region

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Llandudno Copper Mines

16.2.69

Llandudno Copper Mines 16.2.69

Alan, Dave Jenkins, Chris Williams, John Reay & friend & Self.

It was intended that this be an official S.M.C. trip to show the club our finds at Llandudno, but due to weather, and probably general apathy, nobody turned up from Shropshire.

At Llandudno, Alan and myself did not enter the mine, as we thought it would be more useful to attempt to locate further open shafts, possibly betrayed by melt patches in the snow. This we did, but with no success.

The remainder of the party descended the shallow Bryniau Poethion shaft to explore the higher workings, to the accompaniment of a frantically photographing John Reay. Movies even! Nothing new reported.

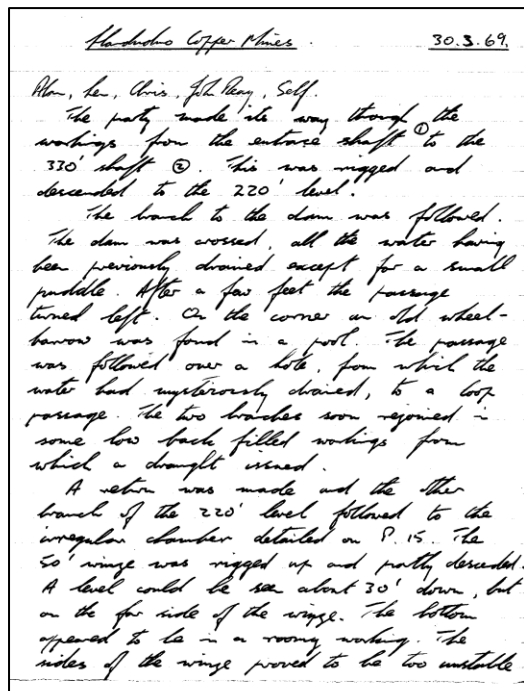
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Llandudno Copper Mines30.3.69

Alan, Len, Chris, John Reay, Self



The party made its way through the workings from the entrance shaft N°1 to the 330ft shaft N°2. This was rigged and descended to the 220ft level. The branch to the dam was followed. The dam was crossed, all the water having been previously drained except for a small puddle. After a few feet the passage turned left. On the corner an old wheelbarrow was found in a pool. The passage was followed over a hole, from which the water had mysteriously drained, to a loop passage. The two branches soon rejoined in some low back

filled workings from which a draught issued. A return was made and the other branch of the 220ft level followed to the irregular chamber detailed on p.15. (p.23) The 50ft winze was rigged up and partly descended. A level could be seen about 30ft down, but on the far side of the winze. The bottom appeared to be in a roomy working. The sides of the winze proved to be too unstable...

to continue a descent from the nearside, there being a large amount of rock supported on very doubtful timber. Workings to the W of the supposed S end of the chamber were followed from the bottom of a 20ft deep rift, but all petered out within comparatively short distances. Several tight workings on an apparently bedding on 'flat' type of deposit were explored from the top of this rift but again petered out in sections back filled with deads. Little else of interest was found so the party returned to the surface. It would appear that ore from these workings was carried down a well worn path into the 50ft winze to be hoisted out of a neighbouring shaft. The only means of a safe descent would be by traversing out over the shaft and securing a ladder from pitons, thus allowing a descent clear of the unstable stacked deads.

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Llandudno Copper Mines
 FEBRUARY 21ST 1971
 This trip was carried out to climb the 30' rise in the highest workings so far reached from the adit level. The party consisted of P. Appleton, Len Lyon, Alan, Chris, Blogg and Terry Davies.
 The rise was reached after about an hour and was climbed by Blogg using running belays around various stemples. He pulled up a ladder for the remainder of the party to climb. At the top a small but regular level led into the top of the stope which could not be climbed on a previous occasion. The level which was covered in clog prints had fallen away into this stope. A traverse was made across but the level had collapsed on the far side. A left branch of the level just before the stope led into a cavernous working of limited extent which soon became blocked with jammed rubble. A timbered winze in the floor was found to be about 30' deep but was considered to be too dangerous to descend.
 The other way R (or S?) from the top of the initial rise entered some small stopes at the end of which after about 20 yds a beautiful crystal lined pool was seen. There were also formations in workings vertically above and below the pool. The rise was descended after some photographing and the hole below the 6' step up from the chamber after the muddy traverse descended.

Llandudno Copper Mines Feb 21st 1971

This trip was carried out to climb the 30ft rise in the highest workings so far reached from the adit level. The party consisted of P. Appleton, Len Lyon, Alan, Chris, Blogg (Terry Davies) and Ian Webb.

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Llandudno Copper Mines 25th June 1972
 Went with Chris, meeting Mel Davies and Dave Jenkins at Llandudno. The Pen Morfa adit level of the New Mine was entered.
 The part of the tunnel some 60 yards in is badly in need of being cleared out, as the black clay is continuing to flow into the tunnel and threatens to block it completely.
 After taking photographs of the old tub in one of the lower stopes, and retrieving some of the black coated calcite, Mel & myself climbed up the series of winzes as far as the stemple ladderway. Here some further crystals were obtained. I saw nearly nothing. Fragments of an 1867 newspaper apparently the North Wales Gazette were seen.

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The hole leading into a large stope, previously visited by Len and myself was rigged with a ladder. From this point an extensive stoped out area was explored, some of the chambers being the largest so far seen in Llandudno. Irregular pillars and frequent precipitous drops gave this part of the mine an unreal effect. Again there were no levels as such, merely irregular pathways, sometimes with handrails and short ladders. It was easy to get lost with frequent openings to further workings on all sides. Somebody had beaten us to it however, as in one place was a heap of plastic clothes line and in another stope was a heap of seven small rectangular mirrors the significance of which was not appreciated. Mel had remained at the top of the little pitch into these workings so I was exploring alone, and was at a loss for a few minutes to find the way back to him. An easier route was found into these stopes via a narrow traverse and down a short wooden ladder. There is obviously much left to explore in these mines and several trips must be arranged if we are to retrieve the many relics which must remain. This is particularly urgent since other people are now venturing into these mines.

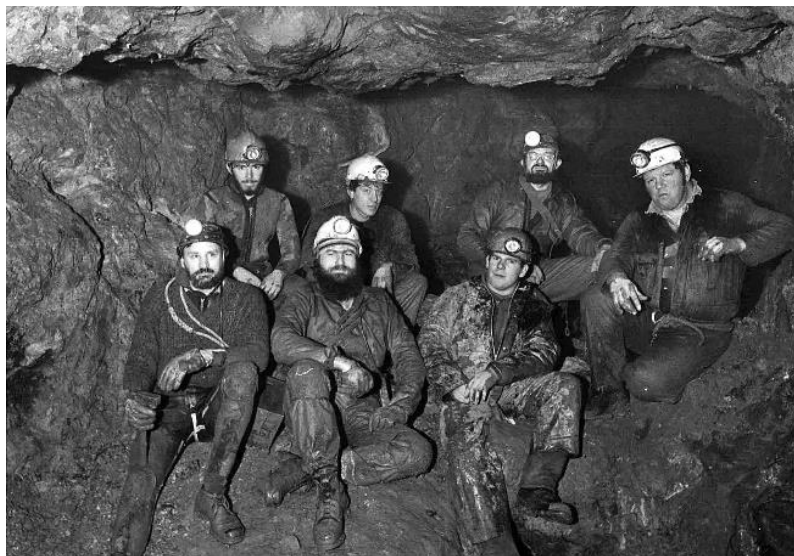
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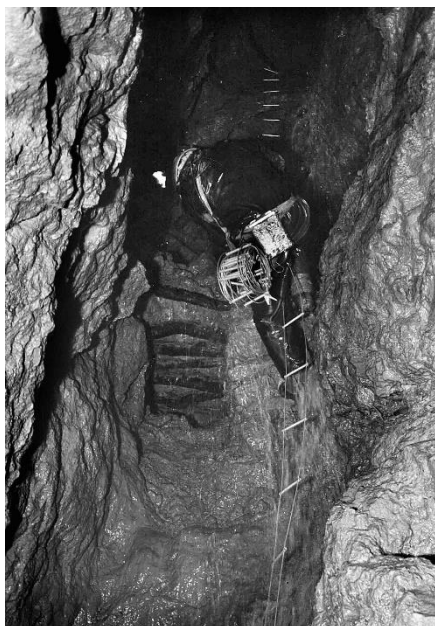


Peter Appleton emerging from
Penmorfa adit in 1970

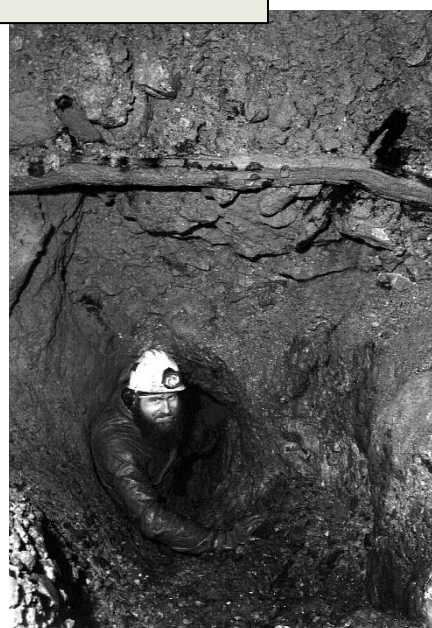
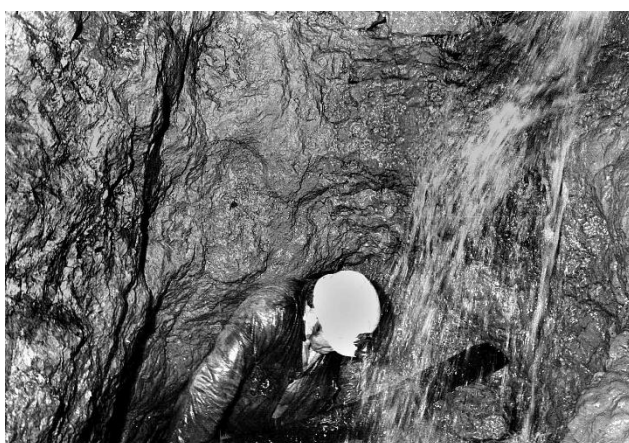
Addendum 1: 1983 North Wales Caving Club: Penmorfa



Unknown, Unknown, Phil Hunter, Andrew Loxham
Rod Goslin, Tony King, Unknown



The 'wet way' up the stopes above the
LH main branch of the adit.

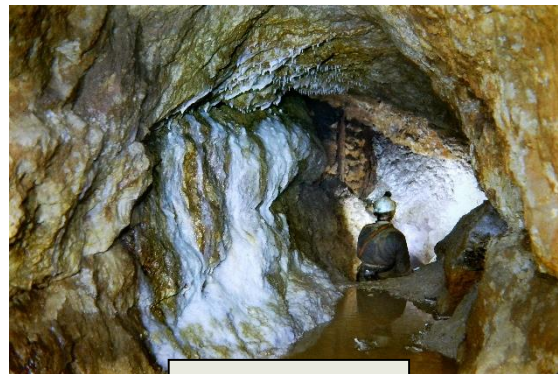


Addendum 2: Chris Williams' photographs

Peter Appleton recently 'inherited' the picture archive of the late Chris Williams, and he has forwarded a few of those concerned with Great Orme exploration. The tools were originally deposited in the Caernarvonshire Record Office (1967); eventually being retrieved for the Mines Visitor Centre on the Orme, and more recently returned to the finders 'as the centre had no use for them, or, seemingly no interest in the eighteenth / nineteenth century mining history !'



These tools, including hammer, pick axe head, powder horn and lantern were found in Roman Shaft workings



Penmorfa stopes

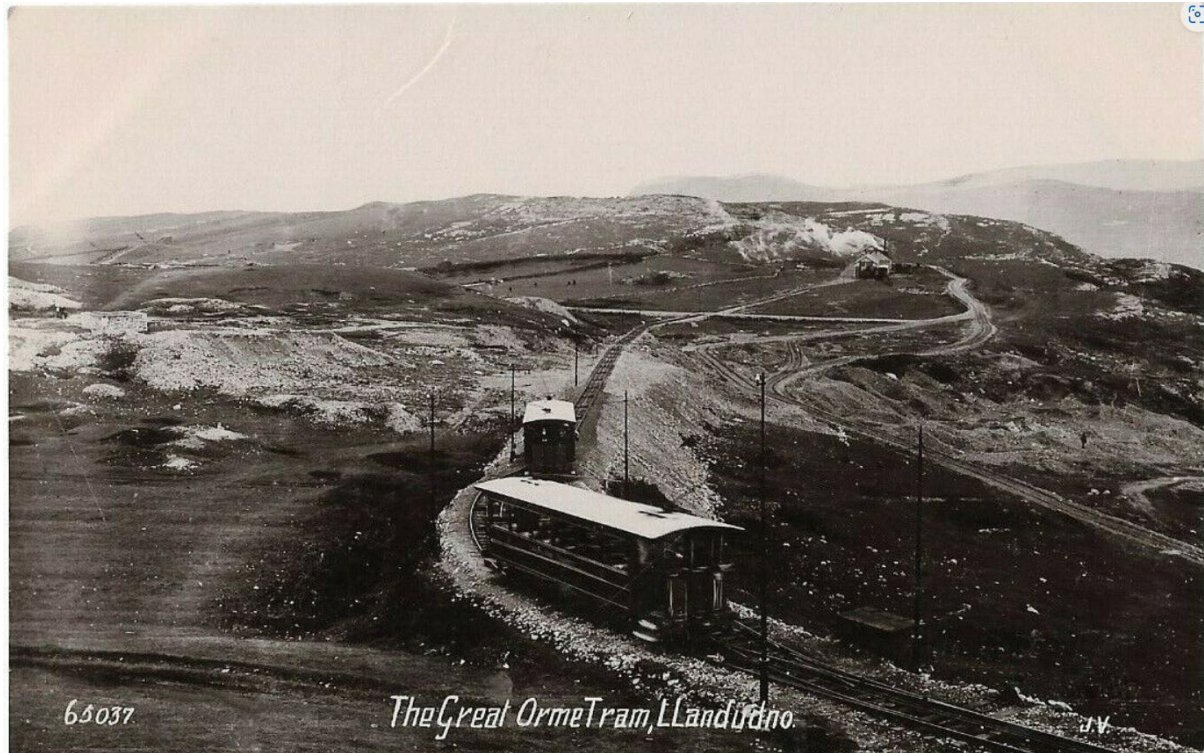


Peter Appleton Penmorfa adit



Mug, kibble and straw fuses from stopes in Penmorfa



Addendum 3: Top of Treweek's Shaft

This postcard, pre 1915, shows the area still freshly scarred from mining operations. Of particular note is the square wall (magnified below) surrounding the top of Treweek's Shaft. Once it was no longer in use, the shaft had been timbered over and covered in a layer of rocks that became grassed over. By the late 60s one side of the wall was missing and the rotting timbers were falling in, thankfully without involving any of the children that occasionally used the walls as a castle! (p.29).



