

1" 190

SW 76 18  
Lizard

CROUSA DOWNS, St. Keverne, Cornwall. L24

VC (1871), 54: Diallage, in diallage rock.

Ruedler (1905) 103

+ olivine +

- alt. prod.

is a

var. of

Diallage in gabbro [diallage  
plagioclase].

of the plagioclase.

augite

Dead-white saussurite

The diallage

with a schiller

[Hey: "saussurite" = zoisite or epidote + plagioclase]

SW 93 50

SA 43

185

CROW HILL MINE, St. Stephens, Cornwall.

60: (Pb, w. kg.) galena; gold? pyrite.

CROW HILL M (qv)



14 185

SW

937 5095

CROWMILL MINE, St. Stephen, Cornwall.

Dines (1956) 2, 543. Worked intermitt. since 1852  
on a lead lode, E 22° S in Killas. A N-S  
fluccan intersects lode in the W part  
& may be continuation of SOUTH TERRAS  
u LODE. Dumps have quartz veinstone  
with peach [chlorite], rich in galena,  
blende & pyrite. Reopened 1910 & one  
"with uranium" obtained. Closed 1911. Tried 1913

AKMS (1964) 8, 27. Photo, facing p. 35. Adjacent to  
Resugga Castle @ E end of viaduct. H.S. Boase

(1831) refers to TREVANION MINE at Crow Hill, with  
material answering description of Crow Hill mine  
dump-stuff - lamellar blue soft slate with veins  
of quartz & chlorite, with galena, blende, &  
pyrite. Collins also mentions Trevanion mine  
producing Cu ore in 1841. Site was, until 1852  
in the Trevanion estate.

1" 185 SW 96 57 SA 13  
CROWN MINE, St. Denis, Cornwall

Shown on RSWB's  $\frac{1}{2}$ " map, at 16 e. 96 57

= ST DENNIS CROWN M.



1<sup>st</sup> 189 e ROCK 2½" SW33 362336  
CROWNS MINE, Botallack, St. Just, Cornwall (I) STJ 18  
and Engine Houses

See also BOTALLACK MINE, W. HAZARD

Visited by RSWB & GR. Locs 106, 107, 108. Traces of  
green and blue porphyry Cu mins, crystalline  
cassiterite; axinite;

JC (1871) 47. CROWNS ROCK. Garnet; magnetite; apatite;  
axinite; actinolite; epidote; natrolite;  
prehnite; "etc."

AWGK, RSC (1964). Cobaltite

C Rogers (1968) CROWNS ROCK: Garnet, magnetite;  
apatite; axinite; actinolite; copper; chalcocite;  
cassiterite, pegmatite

AR, MM 16 217 (1912) Cliffs between Wh Cock & CROWNS ROCK

- Prehnite (see Carne RASC 1822 2 310, of AR, MM (1910) 15 379). pale-green glob aggs as veins in a narrow strip of intrusive greenstone in granite; with stilbite & axinite

JRK Priv Comm 11/71 Mr (geologist) ✓  
St Just has recently found dendrite,  
brownish translucent tetrahedra, in  
situ at foot of cliffs nr Crowns  
mine. Big spec → Turo Mus (NB has  
barnacles on it. v. near sea level)  
small spec → JRK. A few specs obtained  
- "could find no more" on subsequent visit

## CROWNS MINE & ROCK, St Just, Cornwall (II)

87M/3031

G. van Marcke de Lummen (1986) Bull. Min. 109 [5], 613-6.

A garnet from a metasom. altered basalt at the Crowns nr Botallack analysed. Has e.g. F 1.2, H<sub>2</sub>O 2.3%. e is a fluor-bearing hydro-andradite.

CMRM (1995) Sn-epidote (0.5-2.8% Sn); grossular  
-(Sn-); malayaite;



Wh. cubert, Redruth, Cornwall

See Wh. Cupid.



Wh. Cubitt, Lelant, Cornw.

See Wh. Cupid

1" 189

SW 54 27

CUDDAN POINT, St. Hilary, Cornwall M 37

JC(1871), 49: Actinolite. ✓

= CUDDEN POINT SW 54 27

1" 186

SX 040 5528

CUDDRA MINE, St. Austell, Cornwall. SA 57

JC(1871) 61: (<sup>wtg.</sup> Sn) Cassiterite.

SOUTH CUDDRA M SX 047 527



CUDDRABRIDGE M., Padstow, Corn.

See PADSTOW CONSOLS

1" 189  
WHEAL

CUNNING, St Just, <sup>SW</sup> Cornwall <sup>36 31</sup>

STJ

28

Henwood.

JC(1871) 47:

Mica; cassiterite.

1" 189

SW 530 377

Wh. CUPID, Lelant, Cornwall.

See also HAWK'S POINT M.

AKHJ (1961) 1 37, 39 On copper lode in "Cupit  
Orchard" (1821). Sett large - from four Cross  
Lanes in Trevarrack (? 525 375) to the sea.



1" 190

SW 713 423

Wh. CUPID, Redruth, Cornwall.

See also ST. AUBYN UTD. MINE; TREFULA; Wh. LILY

KCD (1952) 116

Unsuccessful Cu mine in heart

of Carn Marth granite,  $\frac{3}{4}$  ml E by N of  
Redruth Stn. Little worked - 1855-1862.

22 tons fluorite ✓ produced

AKHJ (1962) 3 24, 27 On SHALLOW ADIT, portal [near  
713 435], with Wh's LILY, TREFULA M. Started  
in 1810, on a copper lode. Idle by 1819  
(=Wh. CUBERT), but down to 43 fm. Reopened ca  
1850. In 70 level W, lode 4 ft wide, of

fluorite interspersed with fine stones of  
copper. [ore?]

1<sup>st</sup> 190

SW 74 42

R 28

CUSVEY MINE, Gwennap, Cornwall

~~See also CONSOLIDATED MINES (R 60) etc.~~

Henwood: CONSOLIDATED MINES, Redruth area:

W - W. Wh. VIRGIN (R 29). Middle - E. Wh. VIRGIN (R 29),

Wh. FORTUNE (R. 22), CUSVEY.

Dewey (1923) 35. Part of CONSOLIDATED MINES -  
"CUSKEY or CUSVOE."



1" 186

SX 351 604

CUTLINWORTH FARM, Landrake, Cornwall

Cutlinwith on OS 1" SX 3760

CMRM(1995) Kermesite (? - ident. by colour);  
stibiconite; stibnite;

1" 190 72,420  
WHEAL DAMSEL, Gwennap, Cornwall

R 14

$\frac{1}{2}$  ml sw by S of St Day. See also W. Wh. DAMSEL,  
E. Wh. DAMSEL.  
Connellite ✓  
POLDICE, Wh. HOPE

W. Wh. DAMSEL 1" 190 72,418

E. Wh. DAMSEL 1" 190 72,42,

RSWB 8/59 Loc 124 Dumps on hill near Wh Damsel, at 1" 190 72,417  
Green fluorite; weathered? Olivenite ✓

JC (1871) 56. E. Wh. DAMSEL: (Cu). Chlonte; chalcocite;  
chalcopryite; copper; fluorite;  
kaolin; lithomarge; melaconite;  
pharmacosiderite; pyrite.  
W. Wh. DAMSEL (Sn, wkg.) Cassiterite; fluorite ✓

KCD (1952) 116

Worked 1800-1838, 1845-1872, to  
44 fms below adit, for Cu, Sn, fluorite

Dewey (1923) 30

Included in POLDICE 7 lodes  
all yielding Cu ores. MAIN, traced over 2 miles;  
PRESSURE-ENGINE L., OLD NORTH L., OLD SOUTH L.,  
GILBERT'S L., TURTLE'S L., WA. HOPE L. These  
lodes also in W. DAMSEL.

Cu ores produced 1815-36, 1838, 1845-72.

Atkin et al. MM 47 393-6 (1983) Tristramite,  
new U min., 8) rhabdophane group

CMRM (1995) Opal



1" 190

SW 72, 42.

E. Wh. DAMSEL, Gwennap, Cornwall

See also Wh. DAMSEL, etc.

Dewey (1923) Cu, 7. Chalcopryte in slate,  
melaconite & chalcocite in granite.

JC (1871) 56. Cu mine. Chlorite, chalcoate  
chalcopryite, copper, fluorite, kaolin,  
lithomarge, melaconite, pharmacosiderite,  
pyrite

BMS Newsl. (1975) 40 14 Olivenite, chalcopyllite



1" 190

SW 72 41

WEST Wh. DAMSEL, Gwennap, Cornwall

(I)

See also Wh. DAMSEL. Wh. HOPE

= Wh SPINSTER

KCD (1952).  $\frac{3}{4}$  ml SSW of St Day, in Carn Marth

granite, on W extension of Wh Damsel lodes.

Cu & Sn worked 1852-1874, also fluorite. Broken

Quartz, chlorite, arsenopyrite recemented by  
quartz, cut by vein of fluorite, later slicken-  
sided.

JC (1871) 56. Sn, wkg. Cassiterite, fluorite.

Dewey (1923) 31 7 lodes as in Wh. DAMSEL, discussed under  
POLDICE. Cu ones produced 1852-1874

1" 190 SW 72 41  
(Wh. SPINSTER) St. Day, Cornwall. (II) R 78  
= W. Wh DAMSEL

TMM (1868), 37 Opal.

W. Phillips (1823) Opal, ~~with~~ yellow, with reddish  
play of light

Not in Burt et al (1987), AKHT.

Dines (1956) 398 = WEST DAMSEL

$\frac{3}{4}$  ml SW by S of St Day e. 7241

Quartz, chlorite, arsenopyrite, fluorite

JC (1971) 56 W Damsel (Sn, Wkg) cassit., fluor

WHEAL DANIELL, <sup>1" 190 745449</sup> Redruth, Cornwall

R 21

Wh BUSY 9  $\frac{1}{2}$ " RSWB 10 j

1" 186

SX 27 73 (?)

DARLEY TOR QUARRY, Upton Cross, Cornwall.

Quarries (1963-4). Working, granite.

OS  $2\frac{1}{2}$  in map shows "Darley," etc, ~~near~~<sup>at</sup> 27x73y



1" 189

2½" SW 53 513318

WHEAL

DARLINGTON, Ludgvan, Cornwall.

M 13

See also W. Wh. DARLINGTON (M 34)

JC (1871), 48:

Arsenopyrite;

pyrite;

schorl; cassiterite.

Dewey (1923)

Cu ore

1833-45

1" 189

SW 51 31

WEST Wh. DARLINGTON, Ludgvan, Cornwall.

M 34

See also Wh. DARLINGTON (M 13)

JC (1871), 48: Silver; argentite; argentiferous galena.

Wh. Davey, Sr. Agnes, Corn.

See Wh. Burrow & B.

1" 186

SX 1587

DAVIDSTOW, N. Cornwall.

E 25

JC (1871), 63: Haematite; limonite.

Rudler (1905) 19. gold. (S.R. Pattison QJ Geol Soc (1854) 247)



1" 185

SW 92 77

DAYMER BAY, St. Minver Lowlands, Cornw. (I)

David Lloyd, Pers. Comm. 8/86      Phosgenite, good xls  
→  $\sim \frac{1}{2}$  cm in cavs. in quartz matrix speckled  
richly w. galena in vein on N side of  
spur on N side of Daymer Bay - "a  
low-tide job". Also cerussite, anglesite (?)  
Visited low-tide 20/8/86. Only promising  
vein found on top of e. s. side of ridge  
near 926 7775 but with more  
chalcopysite than galena. Qtz veins  
ENE-WSW, in grey slate, variable vein  
thickness →  $\sim 20$  cm, barren centre,

~~BEACHLAND MINE~~ Wilypool, E. coast,

mineralised edges, v. patchily. Qtz is Fe stained terminated xls in cavities some v. thin elong qtz xls in the mineralised zones. Sulphides altering to malachite needles; cerussite. Trial adit (?) seen just N of the vein site examined.

RE Starkey & BM(NH) Coll 4/85 at SW 927 777  
Cumengeite (XRD, BM(NH)). In situ, from beach outcrop in inter-tidal zone

## DAYMER BAY, St. Minver Lowlands, Cornwall (II).

Rev. V. Holyer (1989) Priv. Comm. MS.

An EW quartz vein has scarce, sporadic galena & an unident. Cu mineral.

Tabular phosgenite occurs, but extremely rarely. Cumengeite verified by XRD from Brea Hill [928-9 770-2] acc. to H. Miles (1986) pers. comm.

CMRM (1995) Paralaurionite

R. Stankey (1998) BMSN 50, 9: Fine diaboleite & cumengeite found in 1986.



1" 190

SW 80 20

DEAN QUARRY, St. Keverne, Lizard, Cornwall  
(I)

A.F. Seager, MM (1969) 285, 147. Dean Q, adjacent to Dean Point, 2 m NE of Coverack, in gabbro intrusion (described by J.S. Flett, Geol of the Lizard & Meneage, 2nd Ed (1946) - G.S. Memoir on sheet 359). Some v. coarse gabbro pegmatite with giant pyroxene xls up to 25 cm long!

Zeolites found 1967, high in quarry face, out of reach, a 50 cm diameter geode, but specimens found in debris.

Most prominent is analcime, trapezohed up to 4.5 cm white, sometimes stained brown, mostly translucent,



but a few are sub-transparent. Natrolite up to 4cm as closely packed divergent groups or separate xls - v.g., finer than well-known Chynhalls cliff loc. Also prehnite, pale green; calcite, some v. clear & brilliant.

Russ. Soc.  
AGM, 4/91

#### DEAN QUARRY

Dean Quarry is on the east side of the Lizard Peninsula. In the 1970s the Quarry became famous for the zeolites which occurred in the gabbro. Zeolites have been found widespread in the Lizard, in the gabbro of Dean and Porthoustock quarries, in gabbro and metadiorite dykes elsewhere, and where the hornblende schist and serpentinite are in relatively unfaulted contact, but it was at Dean that the largest natrolites and analclimes, and the best prehnite and calcite were found. Pink adularia also occurred in some quantity. These minerals are found in a 'grey-green' or 'flaser' gabbro which varies in texture from schistose to pegmatitic, and is cut by metadiorite dykes. Other minerals do occur, but in smaller quantities, and much smaller specimens, including stilbite, pectolite, heulandite, scolecite, chabazite, phacolite, pyrite, malachite, djurleite and quartz - some of these in very small quantities.

Cont. ... (II)

## DEAN QUARRY, St. Keverne, Cornwall (II)

Seager (1978) has shown that the age of the adularia, which occurs within the paragenesis of the zeolite mineralisation, has been determined as  $201 \pm 4$  million years, and he suggests a link with the rest of the mineralisation in Cornwall. He also suggests that it is possible that the formation of the secondary serpentines in the serpentinites are linked in age with the prehnite-zeolite-calcite - adularia suite in the metabasic rocks.

In 1967 Seager suggested the following sequence of deposition and decomposition of hydrothermal minerals at Dean Quarry:

- Pale brown tabular prehnite
- ? Microcrystalline calcite
- ? Drusy calcite
- Colourless calcite of complex habit
- Green botryoidal prehnite then White botryoidal prehnite
- Pale green thick tabular euhedral prehnite
- "hite               "               "               "               "
- Small white               "               "               "
- ? White prehnite veins then ? Colourless euhedral prehnite
- ? Removal of some pale brown tabular prehnite
- ANALCIME               /               ?Pectolite               probable continuing
- NATROLITE             /               slight growth of colourless
- /               calcite

Decomposition of analcime, probable whitening and some decomposition of natrolite, forming flakes, spheres and compact white montmorillonite; possible change of pectolite to clay near saponite. Further slight growth of colourless calcite

Brown calcite

Stilbite formed and some  
Natrolite removed during  
deposition

Heulandite

formation of bluish-grey montmorillonite from analcime and natrolite.

Calcite in shrinkage cracks.

Brown chabazite

? Colourless chabazite

? indicates slight uncertainty in placing an event. Alternative positions for pectolite and for bluish-grey montmorillonite, etc. shown by lines.

\*\*\*\*\*

The Quarry in which the above were found is now abandoned, and a new quarry has been formed on the Lowland side of Dean Point. After several disappointing years this quarry is now producing several of the above minerals, including lustrous drusy brown calcite, clear whitish calcite, small colourless to pink analcime, larger white analcime, prehnite (white and green), phacolite, stilbite, chabazite, ?chalcocite, and epidote.

The paragenesis is almost certain to be as for the previous quarry.

Ref. Seagar in Transactions of the RGSC, vol XX part 2. Min Mag vol 42 pp 509-11 etc.

Cont... (III)



# DEAN QUARRY, St. Keverne, Corn. (III)

## DEAN QUARRY

Dean Quarry is situated SE of St. Keverne on the Lizard peninsula. The workings are operated by Redland and extract gabbro principally for roadstone and tarmacadam aggregates.

The location is noted for the occurrence of well crystallised zeolite minerals which are usually found in white veins that traverse the pink coloured host gabbro.

ADULARIA  
ALBITE  
ANALCITE

CALCITE  
CHABAZITE incl. "phacolite"

GALENA  
GILBERTITE

HEULANDITE

MARCASITE  
MONTMORILLONITE

NATROLITE

ORTHOCLASE

PREHNITE

QUARTZ

STILBITE

Pectolite  
Scolecite

Pyrite  
Malachite  
Djurleite  
Saponite  
? chalcocite  
Epidote

Dean Quarry Saturday 6th April <sup>22</sup>RSN (1991)

The weather had not improved by Saturday morning, in fact it worsened as the day passed and by 11.30 am the predicted torrential rain arrived blown in by a force 9 gale.

Over 20 members split into three groups, led by the Rev. Vincent Holyer, Nick Talbott and Adrian Roberts, each group starting on one of the three levels. Vincent Holyer explained that the state of the quarry from a collector's point of view was either good, bad, or mediocre and after a bad period lasting for several years it was now producing small specimens of the zeolites for which it was (or is?) famous and could therefore be considered to be in its mediocre state.

The quarry on the east side of the Lizard Peninsula lies within the gabbro which was intruded in to the Lizard complex, possibly in the early Devonian or even before that. During subsequent orogenic movements, dolerite and meta dolerite dykes were intruded and it is where these latter dykes cut the metamorphosed 'flaser' gabbro which varies in texture at these points from schistose to pegmatitic that the zeolites occur. The quarrymen prior to the early 1970's wondered what the large white 'golf balls' were that they were throwing into the crusher along with the gabbro. Seager, during a visit at that time realised that these

were fine quality zeolites and made a study of the paragenesis. Sadly, that part of the quarry where the large analcimes and natrolites, the best prehnite and also calcite were found is now closed, although many fine collections of these zeolites and other minerals exist. The new quarry, to the south west which we visited, does produce smaller specimens on occasion.

Minerals found by most members of the three groups included white prismatic prehnite crystals looking very like stilbite crystals, on pale greenish prehnite from the top of No. 3 level; prismatic stilbite crystals looking very like prismatic prehnite crystals, on yellowish calcite from No. 2 level. These were prised off by Adrian Roberts who had the foresight to bring a ladder, and specimens left for the other two groups. A couple of analcime crystals, one almost 50 mm in diameter were found by Vincent. One was collected and the other left for us, and hopefully other collectors in the future to look at. Also found on No. 2 level was a reasonable specimen of natrolite and some small red orthoclase feldspar crystals on calcite. These have been possible to date and as it occurs within the paragenesis of the zeolite mineralisation, Seager (1978) has shown that it occurred about  $201 \pm 4$  million years before the present.

Cont'd → (IV) (BACK OF)



# DEAN QUARRY, St. Keverne, Cornwall (IV)

RSN 23 (1992)

Dean Quarry, The Lizard, Cornwall  
6th June 1992

For a description of Dean Quarry, please see  
*Russ. Soc. Newsletter* No. 21.

The party met at 10am, and under the leadership of Vincent Holyer ably assisted by Steve Hall, explored the second level on which a N-S face revealed a little natrolite and analcime, but the quality was poor and the position too dangerous for collecting. However, the same face supplied a number of specimens of the rather unusual prismatic crystals which are thought to be prehnite, along with brown calcite and, if typical for that area, a few natrolite prisms. The leader had prepared for the worst by putting aside some specimens which had been found during the previous month, and these caches produced analcime, natrolite, natrolite 'chimnies' (stilbite epimorphous after natrolite) and chabazite var. phacolite.

Some of the party went down into the bottom level and, to the leader's incredulous astonishment, proceeded to unearth reasonably thick natrolite prisms up to 5 or 6cm long. These were in a wet pocket in the E-W face, and all of them were detached from any matrix. They were, as far as is known, the first natrolites of any size to be found in the bottom level of the Lowland Quarry. The leader was still reeling around with surprise at this find when, again to his utter astonishment, marvellous specimens of an unusually bright green prehnite with brown calcite were being waved around in another part of the bottom level. These were probably from the continuation of an E-W vein which had over the previous few weeks been yielding specimens of calcite with (probably) very small stilbite, and small analcimes, and which may have been the downward extension of the E-W vein described in the visit of 9th June 1991.

The party seemed to be well pleased, and the leader was very thankful that the natrolite and the prehnite had been hidden from him on his pre-expedition visit, or perhaps they might not have been there on June 6th!



Cont. from (III)

On the bottom No. 1 level there were signs of copper mineralisation, secondary deposits on either chalcocite or djurleite. A small pocket of stilbite encrusting natrolite crystals with some tiny (0.5 mm) 'flying saucer' shaped phacolite crystals was also found, as well as several good crystals of pyroxene in the pegmatitic gabbro and veins of massive epidote.

Much of the time was spent watching Vincent retrieving his yellow hard hat which tended to fly off at regular intervals and bounce across the quarry floor, or else retrieving it for him. For those members who found good specimens and for those who did not, there were four or five boxes of samples waiting for us at Vincent's new house after the field meeting, so everyone departed with a reasonable variety of Dean Quarry zeolites.

We are grateful to the Rev. Vincent Holyer for arranging the visit and to Redland Aggregates Ltd for allowing us access to the Quarry.

Paddy Thorman

22 May 1993 Dean Quarry, The Lizard,  
Cornwall RSN(1994) 24

About a dozen members visited the quarry. For a description of the quarry please see *S.W. Newsletter* No.4.

On this occasion the bottom level was the most interesting. A few natrolite crystals, small, but quite attractive, were found in an E-W vein, the best finds were from a N-S prehnite vein also carrying brown calcite. A few of the specimens were very pleasing and good even by Dean Quarry standards, but were found only after considerable endeavours involving much muscular power!

Vincent Holyer

CMRM(1995) Enstatite;  
hornblende; labradorite;  
Ti-magnetite; mottamite;  
stevensite (ψ-after pectolite)

# DEAN QUARRY, St. Keverne, Cornwall (IV)

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6th June 1992

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The party seemed to be well pleased, and the leader was very thankful that the natrolite and the prehnite had been hidden from him on his pre-expedition visit, or perhaps they might not have been there on June 6th!



# DEAN QUARRY, St. Keverne Cornwall (V)

R. Soc. N. (1994) 25  
Dean Quarry (Lowland Side), St Keverne,  
Cornwall [Grid Ref: SW 803 204] -

14 May 1994

SWB, Leaders: Vincent Holyer and  
Jeremy Hooper

The party, consisting of ten members including one guest from 'way up-country' assembled in steady rain. On the bottom level we searched among the remains of a NW-SE vein. How hard it is to find transparent crystals in the wet! This vein, or perhaps two parallel veins, is unusual in its direction since most veins at Dean are nearly E-W or N-S. The vein(s) at best contained calcite, natrolite, perhaps scolecite, analcmite and very rarely, prehnite. On the day of our visit, several specimens with natrolite were collected, and some with analcmite. Only a very few specimens from the vein showed prehnite. This was of the habit common to the Lizard Peninsula, appearing as euhedral or sub-euhedral crystals. Tiny perfectly formed, water clear, colourless analcmite crystals were seated on the prehnite. Ruth Osborne found that some of these analcmite crystals had formed on a thin skin of botryoidal

whitish-blue mineral, making the specimen look very attractive.

From blocks of gabbro in the floor of the quarry, several veins of prehnite with natrolite crystals up to 3-4cm long were found, but proved very difficult to extract. Because the quarry varies its mineral productivity, a 'stockpile' of recently extracted rock bearing interesting minerals is usually provided. This was found to contain some lovely yellowish green semi-botryoidal prehnite.

The second level was also visited to examine what proved to be a rather barren recent blast. Some stevensite after pectolite was found in radiating groups up to about 2cm in diameter. Nick Talbot and Richard Williams reported curved calcite crystals, and a little feldspar as white euhedral crystals was also found.

The soaked remains of the group made their way out of the quarry at 2.00pm. The day had been fairly warm however, and the wetness was not therefore such a problem. We are very grateful to Redland Aggregates, and especially Mr Edward



chalcocite inclusions. July 1995 more motttramite  
as micro xls w. gal & chalcocite, with also  
v. small pale copper-coloured needles with Pb, V, some  
Cl "v." = vanadinite

RSN (1997) 30: Natrol; prchn; oclase ("adularia"); qtz;  
chalcopyr.; calcite; pectolite; ? stevensite; pink  
feldspar; analcime; Cu secondaries; chalcocite;  
chr'colla; ?? mesolite. ~ All on LOWER BENCH.

Elton, N.J., Hooper, J.J., & Holyer, V.A.D. Min Mag (1998)  
62, [2], 271-272 "Al-free gyrolite from the  
Lizard, Cornwall, England". From DENE Q;  
embedded in calcite in a vein in gabbro

# DEAN QUARRY, St. Keverne, Cornwall (VII)

Dean Quarry (lowland side) St Keverne,  
Cornwall [GridRef: SW 803204]- 8 June  
1996 RSN (1996) 29

SWB, Leader: V. Hoyer

At the beginning the Leader gave his usual speech avowing that 'there is nothing here', although bearing in mind that he had been proved wrong on every other occasion. This year he had modified his sentiments somewhat, and once again the group found a few surprisingly good specimens. There were about nine in the group.

A NW-SE vein (an unusual direction for Dean Quarry), which had on the previous years visits produced interesting white-tipped crystals of natrolite, with calcite and analcmite, again provided surprisingly good specimens.

There were good displays of adularia, some epimorphous after analcmite. The latter had almost entirely decomposed, leaving a cast on which the adularia had formed<sup>1</sup>. Some sprays of natrolite, and of montmorillonite after natrolite were found. There were also traces of stevensite, pyrite, chalcopyrite, and prehnite.

The Leader sounded very learned, talking about N-S and NW-SE veins, until, tiring somewhat, he referred to a 'N/S - E/W vein' It was time to leave the quarry!

Our thanks go to Mr Barry Retallack for his considerable help, and to the quarry owners.

## Reference

1. Seager, A.F. 1978. Zonal dissolution in analcmite and pseudomorphs of adularia after analcmite from The Lizard, Cornwall. *Min. Mag.* 42, 245-9.

RSN(1998)33 10 Field trip

Usual minerals

RSN(1999)35 14. Not much  
found - usual min's

## Another addition to the Dean Quarry mineral suite - millerite.

The nickel sulphide, millerite is the latest mineral to add to the ever-growing suite from Dean Quarry, St. Keverne, Cornwall. The find was made by Jeremy Hooper and Vincent Holyer back in May whilst showing a couple of American visitors around the Quarry.

The millerite occurred as golden, hair-like filaments up to about 5mm long in cavities of prehnite/calcite within the Dean Quarry Gabbro. Identification of the millerite was obtained by energy dispersive X-ray analysis.

Although there are several other localities where millerite has been recorded in Cornwall, this is the first occurrence recorded from The Lizard Peninsula.

Dean Quarry is more widely known as a calcite/zeolite location but over the past couple of years a number of metallic minerals including bornite, chalcocite, chalcopyrite, native copper, cuprite, and galena have been found.

RSN(1996) 29, 31 Jeremy Hooper

RSN('05) 47, 36, 44

Natrol, prehn, calcite;  
green stains malachite  
closed, 2005.

D green et al (2008)  
J. Russ. Soc. 11, 54-58

Probable volborthite  
(EDS just right; not enough  
for XRD) & minute yellow  
to yellow-green spherules  
to ~0.3mm in fractures in  
the rocks.



DEAN Q'y., St. Keverne, Cornwall (VIII)

Wilson et al. (2008), J. Russ. Soc., 11, 87.

Prob. scolecite (has Ca) ~~col~~ V. Holyer

1" 186

SX 3872

DEER PARK MINE, Callington, Cornwall. K 103

JC(1871), 64: (Sn, wkg.) Cassiterite

1" 185

SX 07x83y ~~W106W~~

DELABOLE SLATE QUARRIES, Tintagel, Cornwall.

See also TINTAGEL (E 20), WEST QUARRY, LANTERDAN Q.

JC (1871), 63: (10 kg.) Adularia; albite; anatase;  
calcite; goethite; rock xl; rutile?

Rudler (1905) 91 Clear quartz xls in nests along  
joints in slaty rocks. ~~Small~~

W. Phillips. Clearest & best British quartz xls, better  
than those from Snowdon & Aberdeenshire, in  
slate quarries of "DENNIBOLE, N-Cornwall".  
[Doubtful, RSWB]

Quarries (1963-4). OLD DELABOLE SLATE Q's, working



Truro Mus: vg Quartz - "Delabole".

RSWB (8/65) 4 212. OLD DEL. SL. Qly., cent on 075 840  
uninteresting. Inferior small quartz xls,  
good chlorite (? daphnite) 1-2 mm olive  
green curved "books".

C Rogers (1968) Quartz; calcite; albite; rutile,  
anatase

CMRM (1995) Actinolite; rock crystal and  
rutilated quartz; Zircon (micro-, accessory)

SW 7251

Wh Dellick = Delliack St Agnes, Cornw

See Blue Hills M e Wh Kitty

1" 187

SX 412733

NEW DEVON CONSOLS MINE, Latchley, Calstock, Cornwall

See also DUCHY GT. CONSOLS MINE

Copper mine. ✓



1" 185

SW 70 50

Wh. DEVONSHIRE, St. Agnes, Cornwall.

A. 34

See also POLBERROM., BUNGAY MINE

JC (1871), 57: (Sn) Chalcoprynite; cassiterite;  
fluorite; pyrite.

KCD (1952) 118 Just S of Wh. BUNGAY which  
was included in 1841. Cassiterite,  
chalcoprynite, pyrite, much fluorite.  
According to Collins (1912, p 468), nearly black  
brilliant garnets also present.

Dewey & (1923) 3 Fluorite with quartz

1" 185, 190 or 189

SW 7 5 (?)

Wh. DIAMOND, St Agnes, Cornwall

A 81

TMH (1868), 32.

Rock xl.

1" 189

SW 3 3 (?)

Wh. DIAMOND, St. Just, Cornwall

StJ. 52

JC(1871) 47:

Quartz, var. rock xl.

~~St. Just~~



1" 185

SW 92 74

DINAS HEAD, Padstow, Cornwall

CMRM (1995) Dravite; graphite; ilmenite;  
pigeonite; rutile; tridymite (in pumice);  
zirconite.

1<sup>st</sup> 186

SX 03 65

Wh. DING, Lanivet, Cornwall.

See also BODMIN Wh. MARY

AW6K MM 32 921. W part of BODMIN Wh. MARY, on W side of valley. 2 shafts & opencast workings in Bodwannick wood. In calc flint, skarn.

Wolfe, scheelite, quartz, blebs, galena,  
fluorite, calcite, pyroxenes & other skarn  
silicates.

CMRM (1995) Axinite

<sup>1" 189 43x34y</sup>  
<sup>Gulval</sup>  
DING DONG MINE, ~~Penzance~~ Penwith, Cornwall. STJ 20

Ancient.

JC (1871), 48: (Sn, wkg.) Chlorite; fluorite; jasper;  
chalcocite; schorl.

DBB (1963) 11-12. Ruined engine house on moor.  
? Roman. Also 1814-1878. Attempts to  
rework in 1912 & 1928 unsuccessful.  
Max depth 135 fms.

GC Goodridge, Geog. Mag (1967) 686. Cyprus Mines Corp.  
of America investigating 500 acres with a view  
to opencasting.



CMRM (1995) Tourmaline

Alfred D. Jones  
1870  
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1896  
1897  
1898  
1899  
1900





Wh. Dinner, Redsmith, Cornu

See Wh Mary

1" 174

SX 16 98 ?

DIZZARD MINE, Poundstock, Cornwall

CMRM (1995) Stibnite.

DOLCOATH MINE, Camborne, Cornwall <sup>1" 189<sup>SW</sup> 66 40<sup>S</sup> (I)</sup> C 3

See also N. DOLCOATH (~~C 24~~), S. DOLCOATH (~~C~~), S. CROFTY MINE, STRAY PARK M.; WH. HARRIET; DUNKIN'S GARDEN M., WH. GONS

Arsenopyrite; cerargyrite; good bismuth (RSWB specimen, ex m/c).

BM: Cassiterite, brown spears  $\Lambda$  with chalybite; erythrite; chlorargyrite, Agee, N. Dolcoath Mine (C 27)

Rutley 15th Ed. plb: Arsenic; p. 199, smaltite.

p. 209, erubescite; p. 219, silver; p. 220, argentite

"Fluorspar" 113 (1952) "A large part of Dolcoath" now in S. Crofty Mine. (C 11.)

RSWB 8/59 ~~xxx~~ Chalcopyrite.

Jc (1871), 51. (Sn, Cu, wkg.) Amethyst; argentite;



arsenic? bismuth; bismuthinite; blende;  
cassiterite; chalybite; chalcocite; chalcopyrite;  
chlorite; copper; cobaltite; cuprite;  
dolomite; embscote; erythrite; fluorite;  
galena; haematite; hornblende; langite;  
cerargyrite; limonite; lithomarge;  
malachite; melaconite; arsenopyrite;  
orthoclase; pitticite; pitchblende; pyrite;  
pyrargyrite; rock x.l. schorl; silver;  
smaltite; xennantite; woolfram.

PGE, MM 1953. Löllingite ("leucopyrite") See JC (1871)

Rudler (1905), 41. "Oxidized product found as deep as the  
 p47. Langite p57 silver ore 197 fm level" Contd II

DOLCOATH MINE, Camborne, Cornwall (II)

Kudler (1905), 81. Pitchblende with native  
bismuth & arsenical cobalt. [Key: - Smaltite  
Safflower, or Cobaltite]

AR MM 20 299 Garby, repeated by GEL says  
native arsenic. - doubted by GEL.

MM 13 177 Embolite ✓

Dewey (1923) Working. Comprises Wh. HARRIET; DUNKIN'S  
GARDEN MINE; STRAY PARK MINE; Wh. GONS; & DOLCOATH  
Worked for > 150 years, now 540 fms below adit.

Sections given.

Lodes: MAIN: Had fine gozzan, & much Cu down to 150 fm level. Sn + Cu 150-190 fm Cu rare below 190 fm.

HARRIETT'S: E 20° N, changing to E 40° N below 180 fm level. Unites with Main in E, where much Cu was found. Poor gozzan.

NORTH (or VALLEY) CAUNTER: up to 60 ft wide (at junct. with S. ENTRAL) Much Cu between 20-130 fm. Poor below

SOUTH ENTRAL: On N of, & parallel to, Main Lode. Cu ore down to 50 fm level.

CAUNTER LODE breaks off from Main Lode. Rich in Cu ore down to 80 fm level.

The Cu ores in this mine assoc. with ores of U, Co, Ni, Bi, & sometimes Ag. Small amounts of Cu ore raised until recent times in E part of mine, between 60 & 120 fm levels.

Cont'd (III)



DOLCOATH MINE, Camborne, Cornwall (III)

W. Phillips (1823). cubic silver glance; chalcocite;  
bornite; mamillated chalcopyrite;  
tennantite;

RSWB 83-12 (Ex Sam Weller) Stannite (old  
spec?) "Dolcoath M".

CMRM (1995) Actinolite; aluminocopiapite;  
alunogen; arsenolite; "sparable" cassiterite;  
"blister" chalcopyrite; Br-chlorargyrite; dyscrasite  
PTO.

Dorchester (III)

epsonite; Ni-skutterudite ("chloanthrite"); clear  
quartz;

BMSN(01)59, 6. R. Hampshire pres parasymplesite  
to MMcoll, No. 2262. Mid green spherical  
aggregs, rad. fibrous, with arsenopyrite.

Dines (1956) I 306 →

DOLCOATH MINE, Camborne, Cornwall (IV)

M. Merry, Priv. Comm (5/12/02) From near WILLIAM'S  
SHAFT (see Dines (1956)): pharmacosiderite,  
olivinite, langite, connellite + green  
xl-crusts on granite, spec<sup>s</sup> → RSiOB for IR.  
FTIR (16/12/02) ① Transp darkish green crust &  
small xls  $\equiv$  "P50<sub>syn</sub>" i.e. (w1:1) libethenite-  
olivinite. ② Paler, translucent xl crust =  
similar to ① but impure (quartz?) and a little  
more ASO, so = olivinite  $\geq$  libethenite.

D. Green et al (2003) J Russ Soc 8, 16-17. From HARRIET'S sh  
dump at SW 657 402, one dark blue-green fibrous



parasymplesite also < 1 mm splenoides; with  
siderite pyrite arsopy, qtz. Prob dump-  
growth.

R Selley (2014) BMSN 91, 22. Excav for new  
road @ top of Tuckermill valley cut small  
dump at tail end of Dolcoath. quartz/chlorite  
arsenopyrite small cassiterite xls, some  
nice apatite xls.

1<sup>st</sup> 1899

SW 633 385 C 27

NORTH DOLCOATH MINE, Camborne, Cornwall.

See also DOLCOATH (C3); S. DOLCOATH (C )

BM: Chlorargyrite.

JC (1871), 51: Cerargyrite; silver.

AKHJ (1963) 5, 55. E of the Barricker Stream, 30  
the W. DOLCOATH lodes more extensively tried  
in N. DOLCOATH. Lodes: NORTH ENTRAL, SILVER  
COURSE, & S. ENTRAL. To 85 fm below adit  
Main product was silver ore, also copper.

Dines (1956) 1, 297. Includes Wh. MOLESWORTH. Returned

cerargyrite; copper ore. Prospected 1910 - Lin.  
wolfram & silver in S. CENTRAL lode.

CMQM(195) · Acanthite; pyrargyrite



1" 189

SW 6

3

(?)

SOUTH DOLCOATH MINE, Illogan, Cornwall. C 34

See also DOLCOATH (C3), N. DOLCOATH (C27)

JC (1871), 52. S. DOLCOATH & CARNARTHEN CONSOLS (C33):  
(Cu, wkg.) Chalcoprynite

1" 189

WEST DOLCOATH MINE,

SW 630 385

Gwinear  
~~Camborne~~, Cornwall

AKHJ (1963) 5, 55. Extension, to E, of Wh.

TRIUMPH, set up 1855 as W.DOL. Cu & Ag MINES,  
extending E from Coswinsawsin Farm to the  
Barripper River.

Bunches of rich copper  
ore, with silver (ore) in the gozzan.

Dines (1956) 1, 297-8. Descrip. No records of output

1" 185

SW 71 51

DOLGA (=CARNMEAL) MINE, St. Agnes, Cornwall.

See POLBERROM



Dopps M, Redsmith, Conn.

See Rednandrea M

Wh. Dor Ear, Redruth, Corn.

See Wh. Sparrow.

1" 189

SW 511 389

Wh DOROTHY, St. Ives, Cornwall

See also N. Wh. FORTUNE; Wh. TRENWITH etc.

AKHJ (1961) 1 27-8. S of N. Wh. FORTUNE. Shaft  
visible. Adit emerges opposite the swing-  
gate at the entrance to the field-path to  
Halse town.



1" 185

SW 97 56, 97 57

DOROTHY CHINA CLAY PIT, St. Austell, Cornwall

CMRM (1995) Tourmaline (incl. green).

Wh. D → 723 508  
Little Wh. D → 723 505

Wh's Dower, St. Agnes, Cornw.

See Wh. Kitty

1" 185

SW 96 51

DOWGAS, St. Stephens, Cornwall.

SA 44

See also St. DOWGAS MINE, St Austell (SA 62).

JC(1871) 60:

Actinolite;  
hornblende;

cassiterite;  
pyrite;

kaolin;  
schist.



1" 185

SW 964 513

GT. DOWGAS MINE, St Austell, Cornwall. SA 44

See DOWGAS ~~MINE~~, St. Stephens (SA 44), ST AUSTELL CONSOLS

JC (1871) 61 (Sn, wkg). Bismuth; bismuthinite;  
cassiterite; copper; fluorite.

Rudler (1905) 18 Gold, found by Arthur Dean.

AKHJ (1964) 8, 31. Tin mine, working at least as  
early as 1719. Drained by an adit  
portal near river ca 300 yds to E of St Stephens  
Coombe. A branch to GT DOWGAS & ST AUSTELL  
CONSOLS. Overlaps ST AUSTELL CONSOLS.  
Bunches of copper ore; much pyrite. At  
one time, UNANIMITY included. & In 1873

parb included in ST STEPHENS Sn & Cu MINES.

Dines (1956) 2 544-5. Latterly worked with VENTONWYN  
Pyrite, massive & as xls in vughs. Quartz, small  
clusters of xls abundant, some assoc with  
cassiterite. Cobalt ores, bismuth, bismuthinite,  
nickel ores, fluorite. Ni ores in NNE  
crosscourse driven for 30 fms from Deep  
Adit level. [The one from St Stephens (Coombe)] 20 fm E  
of Trevanion's Sh.

C Rogers (1968): Bismite [?]

1"190

Wh. DOWNAS, St. Keverne, <sup>Lizard SW 76 16</sup> Cornwall. L 25

See also BEAGLE'S HOLE

JC (1871), 54: Chalcocite; copper.

Russ. Soc. Newsletter 20 (1990)

The  
dumps on the cliffs between Beagle's Hole and Downas  
provided massive chalcocite but none of the vanadinite  
reported by the CSM. At Pedn Boun poor specimens of



1" 186 6" Cornw. 16 NW (1907) SX 525 85 59  
WEST DOWN END MINE, Egloskerry, Cornw.

SX 27 86

Mn Mine.

AR, MM (1946) : No rhodonite, although given as loc. in  
Spec. Mm. Res. Rep. 1, 45, (1915).

1" 186

SX 36 72 ?

DOWNGATE MINE, Callington, Cornwall

Downgate SX 36 72

CMRM(1995) Ilmenite

East Downs M., St. Agnes, Cornw.

See Hallenbeagle M.



Wh. Dragon Sr Agnes

SW 7251  
Cornw

See Blue Hills M.

1" 187  
DRAKE WALLS MINE, Calstock, Cornwall <sup>Sx 42 70</sup> (I) 44  
~~See also WEST DRAKE WALLS (K 128).~~

AR specimen in GR coll. <sup>R109</sup> chalybite & quartz.  
Div Comm 66 Cassiterite xls with chlorite on dumps  
JC (1841), 65: (Sn, Cu, wkg). Cassiterite; molybdenite;  
wolfram; wolframite.

W. Phillips (1823) Molybdenite.

DWB, JRK etc 8/69 Lining wall of enormous  
slope underground, reached from wet  
adit ("about to be blasted in") superb  
coatings, some rippled, with brochantite  
xls; vg langite xls (dark blue) with superb

crusts paler blue posnjakite (X-ray, TMS)  
JRK & RWB, MM (1969) 37. 7400 "Posn. from Cornw."

RSWB (8/65) 4 198. Dumps around 427706. Killas, with  
much chlorite; some black tourmaline

C. Rogers (1968) From dumps being excavated:-  
cassiterite; chlorite; molybdenite;  
wolframite.

B. Cooper & S. Treseder (1973-4). Childrenite, nice  
little xls on Killas, from ~~some~~ lower  
dumps (near 427 707). [Loc. "C"]



## DRAKEWALLS MINE, Calstock, Cornwall. (II)

S. Rust, BMS Newsl. (1998), 49, 8.

Anatase, dark blue tabular → 1 mm, also  
cl. brown striated brookite with  
dendritic rutile; all in chlorite  
vein stuff, with corroded quartz xls,  
"orange-brown siderite and needles  
and creamy patches [sic!] of bismuthinite".

B. Craik-Smith (2000), BMSN, 55, 8: Chalcosiderite  
(XRD) glob's → 2 mm in vugs in quartz-mica greisen,  
on qtz xls. Strengite (XRD) pale pink to  
white 1 mm glob, radiating. Pale

green micro xls ? ludlamite. Other unident.

1" 187

SX 40 70 K 128

WEST DRAKE WALLS MINE, Calstock, Cornwall.

See also DRAKE WALLS (K 44).

JC (1871), 65: (Sn, wkg.) Cassiterite.



i" 189

SW 59 36

DRANNACK MINE, Gwinear, Cornwall.

See also Wh. HERLAND

1" 189 SW 367323  
WHEAL DREA, St Just, Cornwall

StJ 26

See also Wh. OWLES

Sn Mine

Gr & R8WB, Sept 1957. "Loc 100" Roadside dumps  
near houses at Kenidjack hamlet, marked  
"Wh Drea" on 6 in OS map. Siderite, small  
dark glittering xls lining vughs in gozzan.

CMRM (1995) Baryte

Mrs Harrison: Vivianite (?)

BMS Newsl. (1996) 45, 2. Cuprite

BMS News 1 (9/95) 42, 12. Wh DREA:- Golden goethite  
sprays in qtz-lined cavity

D. Clough (1984) BMSN'2 10 Vivianite?  
+ (2005) BMSN 71 26 Viv. confirmed.  
BMSN (1998) 50 9 Vivianite (D. Clough, 1984)



1" 190

SW 7, 5,

Wh. DREATH, St. Agnes, Cornwall  
of W. POLBERRO M'

AKHJ (1962) 25

W of the POLBERRO group  
[ie near SW 7, 5,] Name means "sand mine"  
clay at top, then sand, then rolled pebbles  
with some "tin" grains. The clay extends SW  
to Wh. COATES; & a porcelain clay was once  
worked on W side of St. Agnes Beacon  
[ie near SW 7050. OS 2½" "Old Clay Pits" at 704508  
and at 706501]

1" 190

SW 754 544

Perranzabuloe

DROSKYN MINE, Perranporth, Cornwall.

See also Wh. PERRAN, PERRAN Gt. ST. GEORGE MINE, etc.,

Dewey (1923) 19: Adit level is at 10 fms, & lowest workings are at 40 fms below adit

p20: (PERRAN) Gt. ST. GEORGE & DROSKYN produced  
Cu ores 1815-1840 ✓

AKHJ (1962) 2 36, 38. Cu mine. Ancient cliff-  
workings S of Chapel Rock were for Sn.  
Lodes of OLD DROSKYN M. resembled those  
of PERRAN Gt. ST. GEORGE M.

1" 189  
WHEAL

DRUID, Illogan, Cornwall

SW 68 40

C 23

See also

TINCROFT MINE

[cf WH DRUID, St Agnes]

BM:

Copper.

(which Wh Druid?)

Collins (1871), p. 52. Chondrodite? (p. 32-3 "said to have been found at Wh. Druid, Redruth... An anhydrous silicate of magnesia, containing some fluorine.")  
condurrite; goethite; limonite; kaolin ("lithomarge").

Dewey (1923) 27 Under TINCROFT MINE: noted veinlet of native copper in the old WH. DRUID LODGE

CMRM (1995) Domeykite



Wh. DRUID "St. Agnes" Cornwall

A 82

[cf Wh DRUID 'Illogan'] [? =]

TMH (1868), 32:

Chlorite;

goethite;

copper;

chondrodite.

cuprite;

Wh. an. Drump, Rednuth, Corn

See Pednandrea 11

186  
WHEAL

DUCHY, Callington, Cornwall

SX 39 70

K 76

See also DUCHY GT. CONSOLS (K 49)  
= Wn BROTHERS

Rutley, 15th Ed., p. 220, argentite; p. 221, pyrargyrite;  
p. 222, cerargyrite.

Collins (1871), p 64. Argentite; pyrargyrite; silver; cerargyrite.

Hudler (1905), 57. Native silver, argentite, ~~native silver~~  
pyrargyrite

W. Phillips (1823). Nat. silver; silver glance, cubrc;



1" 190

Near SW 717 485

Wh. DUCHY, St. Agnes, Cornwall.

AKHTJ (1962) 214 . E of S. Towan . Presumably Cu  
mine

1" 187  
2½" Tavistock, 409733 SX  
DUCHY GREAT CONSOLS MINE K 49  
Latchley, Calstock, Cornwall

Cu Mine.

See also

Wh. DUCHY (K 76), NEW DEVON CONSOLS MINE (Cornwall)

11 185

SW 79 55

DUCHY MINE, Perranzabuloe, Cornwall. A 58

of Wh. MEXICO. See also PERRAN LODE

JC (1871), 58 DUCHY & PERU [A 59] (Fe). Chalcopyrite;  
chalybite; galena; marcasite

Kuoller (1905) 57 At DUCHY PERU nr Perranzabuloe, N-S  
cross courses carry argentif. galena & occasionally  
true silver ores, & intersect the great  
iron-ode, most of the Ag ore near the intersection  
65. GT PERRAN LODE or DUCHY PERU LODE. (See  
under PERRAN LODE)

C. Rogers (1968). Ag ores

CMRM (1995) Anthracite



1" 189 SW 62 37  
DUFFIELD MINE, Gwinnear, Cornwall H 45

=WEETH MINE,

Henwood.

JC (1871), 50: Chalcocite; chalcopryite; limonite;  
melaconite; pyrite.

GM. Cited as U locality ✓

Dines 156 Incl in Pendarves & St Aubyn Conds.  
S of Weeth Fm SW 62 37

BMS Newsl (2000) 56, 7. BMS Coll ex C Jewson:

No 2225, "WEETHM, TREVASKIS": Siderite

Wh. Dumpling, Redstart, Corn  
See Wh. Sparrow



1" 189

SW 66 40

DUNKIN'S GARDEN MINE, Camborne, Cornwall

See also DOLCOATH MINE

Dawey (1923): Included in DOLCOATH sett [qv].

1" 185

SX 03 51

DUPORTH BEACH, St. Austell, Cornwall  
(Holiday camp!)

CMRM (1995)

Tremolite

### 'Duporthite' revisited

Duporthite was described by Collins (1877) as an asbestiform alumino-silicate of Mg and  $\text{Fe}^{2+}$ . The mineral occurred as greenish-brownish grey fibrous masses investing fissures in 'serpentine' at Duporth Beach, St Austell. The mineral resembled chrysotile or anthophyllite, but Collin's analyses

suggested a new species which he named for the locality. The description of duporthite was not really adequate, and the mineral is not listed in Fleischer's or Nickel & Nichols' compilations. Hey's *Mineral Index* does mention duporthite, but suggests it requires re-examination.

This re-examination has now been conducted by Scott & Power (1996). New samples of duporthite were collected from the original location. Specimens were found in veins to about 4cm wide in the altered parts of a faulted and altered dolerite sill. Analysis shows that duporthite is actually a variable intergrowth of talc and chlorite, but the scale of the intergrowth is microscopic, and probably beyond detection with the analytical methods available to Collins in 1877.

References RSN (1996) 29 37

Collins, J.H. (1877) *Mineral. Mag.* 1, 226-227.

Scott, P.W. & Power, M.R. (1996) *Proc. Ussher Soc.* 8, 445.

Nick Elton

Wh East, Perranzabuloe, Cornwall

See Perran gr St George M



EASTERN CLIFF, Kennack, Corn.

See KENNACK COVE

1" 190

SW 73-4 51

Wh. EDMUND, St. Agnes, Cornwall

AKHJ (1962) 2 32 Exact position unknown.

E 8 E. Wh. KITTY.

1" 187

SX 4275 699

Wh. EDWARD, Calstock, Cornwall.

See also R. CALSTOCK M, etc.

OS 6in map: Cu mine ✓

CMRM(1995) Langite



1" 199

2½" SW 33 359328

St-J 5

WHEAL EDWARD, St. Just, Cornwall (I)

See also Wh. OWLES.

Zippeite, pitchblende, torbernite - museums.

Some good U ore got from level, which is at sea-level and can be approached at low tide; pieces at entrance - AWGK, priv. comm.

Visited Sept 1957. Loc 102, wh. Edward Shaft, small dump on edge of cliff above the zawn. No U; traces of Cu mins; some nice fibrous tourmaline RSWB & GR.

Visited ~~the~~ July 1958, GR. Nothing at lowest level entrance but some dubious U ochres (yellow & buff ~~glau~~ globular powdery) on cliff exposure of a gozzan lode just left

of entrance 20 ft. up (Loc. 114). Torbernite on brown  
hard gozzan lumps recently dropped by someone  
on path leading down - G.R. Jarosite (1R)

GRE RSWB. Aug (1958) Torbernite as above

Rutley, 15th. Ed., p. 160, Autunite,

Henwood: Pitchblende; "uranite"

JC (1871) 48 WHOWLES (SET 3) & EDWARD (Sn) Actinolite; apatite;  
calcite; chalybite; rhodochrosite; aragonite; autunite;  
chrysocolla; malachite; pitchblende; torbernite;  
vivianite; zippeite.

GM: Yellow pgy zippeite with green metatorbernite

| Cont'd II

Wh. EDWARD, St. Just, Cornwall (II)

Rayners Cat (1960) ~~torbernite~~; connellite ✓

Ridder (1905), 81. Zippeite ✓

DBB (1963) 15 At times in Wh. OWLES

AWK, RGSC (1964) Phenakite on qtz & clised  
adularia orthoclase ✓ in cavities in orthoclase  
veins in hornfelsed slate near granite margin.  
6 specimens coll - ca 300 xls phenakite !! long prismatic.  
(Probably = ~~Saunders~~by's loc. "white tourmaline, St. Just")

R. Bournston, via JRK, HC. Coll undergrd. Chrysocolla,  
torb, ? zeun; ? m-zeun; ?? trögente; connellite ✓



C. Rogers (1968) spatite; calcite; siderite; mica;  
chalcedony; red jasper; Cu & U minerals;  
cassiterite; felspar & fls; fluorite; pegmatite

R. Turner (1979) Friv Comm. Saléeite (spec's →  
Rsub) pale yellow  $\uparrow\uparrow$  (x-rayed); Uranospinite,  
pale yellow radiating  $\uparrow$   $\diamond$  (x-rayed);  
torbernite, zinnerite, chalcocite (or ? digenite)

N. Elton, J. Hooper & G. Ryback (1994) 58, 339-341

Compreignacite, yellow botry, with cuprosklodowskite,  
uranophane, brochantite, connellite, calcite,  
chalcopryrite, siderite, uraninite ("pitchblend")  
K-feldspar.

Wh. EDWARD, St. Just, Cornwall (III)

Ryback G & Tandy P (1992) Min Mag 56  
261-75.

Ceprorskiodowskite

Nick Elton (1994) Russ. Soc. Newsl. 25. Compreignacite  
from Cargodna section of [W]Wh. OWLES" and  
on an older (1971) specimen from the dumps  
around Wh EDWARD incline shaft.

CMRM (1995) Aragonite; a report of "near bequerelite"  
was error for compreignacite; carbonate-  
fluorapatite ("francolite"); metavoltine (GR); mixite;

phosphuranylite ("XRD" near); uranopilite;  
~~"visually ident. spec."~~; some "visually ident. specimens"  
of "uranospinite" proved on XRD to be metatorbernite;  
vandenbrandeite; meta-saloeite.  
meta-zeunerite.

Elton NJ Hooper JJ & Ryback G (1994) Min Mag 58, 339...  
"Compergnacite; a second occurs, from a fault, Cornw."  
Compr. with ~~uranophane & cleopside~~  
from top of incline shaft.

T. Wolloxall, ~~1998~~ (1982) BMSN '2 5.

BMSN ('04) 68 31. At sympos: Bismuthinite needles  
~~BMSN~~ RSN ('07) 50, 33. Pyrite, goethite etc.



Wh. EDWARD, St. Just, Cornwall (IV)

D. Green et al (2008) J. Russ. Soc. 11, 54-58

Volborthite, dk green rosettes & yellow-green spheres to 0.4 mm assoc. w. pale-ish green tabular metazeunerite in dump from Cliff Lode. Ident XRD (NHM). (photo).

1" 185

SW 950 528

EGLOSHELLEN MINE, St. Stephen-in-Brannel, Cornwall

= GWENDRA MINE

AKHJ (1964) 8, 25. On two E-W tin lodes which may be E extensions of those of PARKWYN MINE, ( $\frac{1}{2}$  ml to W). Crossing are two N-S cross-courses, one of which carries torbernite near intersection. Partly reopened by At. En. Div. of Geol. Surv. in 1958. Lodes & country rock much split & disturbed. In many places sides of old stopes appear to be hanging by a hair - personal observation by AKHJ. worked early

Egloshehlen M

19th cent. Aband. 1818. Reworked 1836.

Trued 1907 & 1958.

CMRM (1995) "sparable" cassiterite;



1" 185

ca 5x 04 53

Wh. ELIZA, St. Austell, Cornwall.

SA 58

See also Wh. ELIZA CONSOLS (SA 59).

JC(1871) 61 (Sn, Cu, whg.) Cassiterite; Chalcopyrite.

ELIZA WEST 04 53

1" 185

~~en~~ SX 04 53

Wh. ELIZA CONSOLS, St. Austell, Cornwall SA5

See also Wh. ELIZA (SA 58)

Jc (1871) 61 (Cu, Sn, Wkg) Cassiterite; chalcopyrite

1<sup>st</sup> 189  
WHEAL

ELIZABETH, SW 54 34 M 27  
Marazion?  
Cornwall

Henwood.

JC(1871) 50

wh. ELIZABETH, "St. Erth".

Blende; chalcopyrite;  
chlorite; galena; melaconite; pyrite.



1<sup>st</sup> 189

SW 68 44

Wh. ELIZABETH, Redruth, Cornwall.

JC (1871), 53:

Smaltite.

Dines 296

= Gt N. TONGUS MINE

Wh. ELIZABETH, St. Austell, Cornwall.

See Gt. HEWAS UTD. MINE.

AKHJ (1964) 8 38. To W of Gt. HEWAS UTD MINE, &  
included with it in 1846.

1" 190 702468 SW

WHEAL ELLEN, St. Agnes, Cornwall

A 15

See also Wh. MUSIC

AKHJ (1962) 2 17 1834 combin. of Wh. MUSIC &  
OLD Wh. BASSET. Cu mine ✓

CMRM (1995) Wurtzite



1<sup>st</sup> 189

SW 652 421

Wh. EMILY HENRIETTA, Illogan, Cornwall.

C 35

JC (1871), 52 (Cu, wkg.) chalcopryite ✓

Dines 287 Was = TOLVADON M.; worked  
w: E. Wh SETON to the S

Endellion, Conn.

See St. Endellion

ENNYS WHEAL VIRGIN, St. Hilary, Cornwall

MS

See also Penberthy Croft Mine.

C Rogers (1968) Erythrite; quartz; chlorite x/s;  
dolomite x/s; langite; pyrite; galena;  
chalcopyrite; arsenopyrite

H. Conke, Priv Comm 4/71 (Spec:- RSWB 71-40)  
Erythrite (IR - RSWB 71-40) on quartz - chlorite

CMRM (1995) Devilleine



1" 189 690338  
WHEAL ENYS, Helston, Cornwall

M 25

1" 186

3x 151 706 K 81

Wh. ESTHER UNITED, Bodmin, Cornwall.

JC (1871), 62: (Sn, wkg.) Cassiterite.

1" 186

Sx 37 72 K 104

EXCELSIOR MINE, Callington, Cornwall.

JC (1871), 64: (Sn, Cu, wkg.) Cassiterite; chalcopysite

Dines, 633



1" 190

SW 83

Cont 8132

FALMOUTH, Cornwall

See also SWANPOOL M., PENDENNIS POINT

CMM (1995) Cotunnite (F. HARBOUR, in wreck of  
fireship "Firebrand") - [A. Russell, 1920, Min  
Mag 19, 64] Titanite [TRELISSICK DYKE]  
Leadhillite (F. HARBOUR, in wreck [see cotunnite above])

1" 190

SW 77 43

Wh. FALMOUTH, St. Kea, Cornwall.

R 69

Part of WHJANE complex

Rutley (154 Kea), p 198. Vivianite

Henwood: In vughs: xls of vivianite, cerussite,  
pyromorphite, & "buntkupfererz" (!)  
[Hey- bornite].

JC (1871), 59: (Pb<sup>Ag</sup> Mn). Blende; cassiterite;  
cerussite; chlorite; bornite; galena;  
pharmacosiderite; pyrite; pyromorphite;  
silver, vivianite.

CMRM (1995) Rentlandite

1<sup>st</sup> 189

SW 55 32

Wh. FANCY, St. Hilary, Cornwall.

See ~~also~~ PENBERTHY CROFT MINE



1" 189

SW 67 40 ?

Wh. FANNY, Redruth, Cornwall.

R. 50

JC (1871), 53:

Chalcoite; wolfram.

W Phillips (1823) Mamillated chalcopryite (FANNY,)

Dines 313

Part of CARN BREA & TINCROFT

1" 189

SW 53 37

Wh. FANNY ADELA, St. Ives, Cornwall.

See HAWKES POINT

Wh. FAT, <sup>1" 190</sup> Redruth, <sup>SW 70 41 (?)</sup> Cornwall

---

AKHJ (1962) 3 13. ~~Wh.~~ Wh. Gordon adit, started  
at Wh. FAT, in South Downs.  
Neither in Dines or Bunt et al



Wh Fat, Towednack, Corn.

See Trevega Bal

1<sup>n</sup> (190) SW 82 54

FIDDLERS GREEN, Newlyn, Cornwall. A 73

JC(1871), 59. (No minerals mentioned).

1" 186

SX 3

8<sup>2</sup>.

FIVE LANES, Launceston, Cornwall

K 98

JC(1871) 64:

Homblende ✓



Wh Flat, Lelant/St Ives, Corn

See Vorvas M

1" 186

SX 36 70

Wh. FLORENCE, Callington, Cornwall.

K 105

JC(1871), 64: (Cu, wkg.) Chalcopyrite ✓

Wh. Florence, Germoe, Corn

See Gr. Western M's



FLORY ISLAND, Newquay, Cornwall

See NEWQUAY

1" 174

Sx 09 90

E 23

FORRABURY, Cornwall.

JC(1871), 63:

Cliffs:

Anthracite ✓

1" 185

Wh. FORTESCUE St. <sup>Stephens</sup> ~~Dennis~~ Cornwall. SA 45

SW 954 514

See also (M. Wh. FORTESCUE, Lostro: Thiel (SA 81))

JC (1871) 60: No details, but working.



Wh. FORTESCUE, St Winnow, <sup>nr.</sup> (~~Lastingham~~) Corn.

---

See SILVER VEIN MINE

1<sup>st</sup> 186

SX 122 ~~122~~ 606

NORTH WH. FORTESCUE, Lostwithiel, Cornwall. SA 81

see also Wh. FORTESCUE, St. Stephens (SA 45) & SILVER VEIN  
MINE

JC (1871), 62: (Pb, wkg.) Galena ✓

1" 190 75, 42<sub>2</sub>  
WHEAL FORTUNE, Jwennap, Cornwall

R 22

See also CONSOLIDATED MINES (R 60) etc.  
Dines.

Henwood: W part of St Day United (R 6) with "Poldory".  
(R 30)

Also: Part of CONSOLIDATED MINES with W. & E. Wh VIRGINS (R 29)  
and Wh. CUSVEY (R 28)

JC (1871), 56: (Cu). Chalote; chalcoprynite; felspar;  
limonite; pyrite; schorl;  
~~See also under R~~

Dewey (1923) 35 ff Part of CONSOLIDATED M's. TAYLORS  
LODE - good gozzan. Oxides of copper, quartz, pyrite,



chalcopyrite.  
below adch.

Much blende.

Worked to 140 fms

C. Rogers (1968) Currently - large quartz xls, dirty  
with age, but clean up w. oxalic acid.

R. Selley (2004) BMSN 69, 12. Zoned anatase  
plates

1" 186

SX 394 701

Wh. FORTUNE, Harrowbarrow, Cornwall

= Wh. SISTERS = OLD HARROWBARROW M.

RSN('04) 45, 50 Quick visit. One dump seen -  
too overgrown. ~~that is~~

1" 187

SX 415 623

Wheal FORTUNE, Landulph, Cornwall.

AKHJ?



Wh. Fortune, Lelant, Corn.

See W. Wh. Towan

Wh Fortime, St Agnes, Corn  
See Wh Clarence.

? near 740 53x. ~~LE/EL~~

1" 185

SX 08 55

Wh. FORTUNE, Tywardreath, Cornwall.

See also FOWEY CONSOLS, etc.

Dewey (1923) Included in FOWEY CNSLS.



1" 189 near SW 627 287

GT. Wh. FORTUNE Breage, Cornwall M40

See also S. Wh. FORTUNE (M41)

JC (1871), 54: (Sn, Cu, wkg.) Cassiterite; chalcocite;  
chalcopysite; erubescite; mica;  
melanconite; orthoclase; pyrite;  
wolfram.

MM 21 221 Topaz up to 3 mm, with gilbertite,  
cassiterite, quartz

DBB "W. Corn" (1963) 20 Old mine, working 18th Cent. Rock  
in 1860's. Closed just before 1870, at 90 fm.

1" 189

(?) SW 51 39

NORTH WH. FORTUNE, St. Ives, Cornwall.

See also Wh. TRENWITH etc.

AKHJ (1961) 1 27 Possibly = old workings by  
footpath from Trenwith Lane to Corva Fm  
[513 395]. Adit being driven in 1823

1" 189

SW 627 282

SOUTH Wh. FORTUNE, Breage, Cornwall M 41

See also Gt. Wh. FORTUNE (M 40)

JC (1871), 54: (Gt. Wh. FORTUNE)

Chalcopryite; cassiterite.

= PRENBO M.



189

SW 5 2 ?

SOUTH Wh. FORTUNE, Germoe, Cornwall. M 60  
5829

JC (1871), 55: (Sn) Cassiterite.

1" 189

WEST FORTUNE MINE Ludgvan, Cornwall (I) M 15  
2½" SW53 528326

See also PROSPER UNITED MINE, St. Hilary (adjacent, to E)

Cu/As mine (OS map) ~~qtz~~ <sup>(-ferrosite)</sup> ~~metaco~~ <sup>chalcopryrite</sup> <sup>copper</sup> <sup>iron</sup>  
Dines (1956) 36, 170, 172-3 ~~shephides~~ <sup>black tin</sup>, <sup>arsenopyrite</sup>.

Visited Aug 1958 RSWB & GR (quick look) v/s.

7/93 Taken by V. Rae to his "PROSPER UNITED MINE"  
dump, which is at SW 5285 3260, W of the Prosper  
United sett & W of the parish boundary, in  
Ludgvan, hence is W. FORTUNE mine.

Found: Hydrozincite; Zn-devilline; langite;  
brochantite, on muddy matrix-dump growth.

RSWB + MM 14/7/95. Dumps on NW (i.e. Ludgvan)  
side of stream (= parish boundary) at

SW 532 325, are mostly mucky, fine-grained grey shale. MM had recently dug up some quartz boulders & these were sampled. Milky quartz veinstone with pyram. terminations sometimes encrusted with 1-2 mm dolomite (IR) rhombs, & frequently coated with thin pale blue to green porcellanous to powdery crusts giving FTIR = glauconerinite (on a porcellanous sample). Caves in the qtz have much soft white kaolinite (IR). Scattered on & in cracks in the qtz are 1-2 mm linarite (IR) blades & blobs; ~~poorly formed~~ hex & langite xls. Some ? langite & "typical" connellite thin crusts on grey matrix. In the qtz also chalcopryite, arsenopryite.

(XRD)  
green



## WEST FORTUNE MINE, Ludgvan, Cornwall (II)

Embedded in the kaolinite & as rare clusters are near-colourless small hexag. plates apatite (FTIR 8/95 → APATITE, with a little carbonate content) 95-85 also carries pale pink blades ~~variable~~ in tint towards colourless/brownish FTIR = near KÖTTIGITE - Co-KÖTTIGITE (G. J. 22/12/95 MM 'phoned to say that D. Green had checked out some white fibrous material (with the ? glaucokérinite) & found it to be brianyoungite (cf sulphatan hydrozincite). Some malachite with the langite, linarite etc [AMCT → Cu, faint traces Zn;  $\text{CO}_3^{2-}$  efflu]

2/96 Spec's ex MM checked: Gr

= malachite (v Zn-free).

= aragonite. Thin dk

blobs (all over the place) - d

(small sample) = qtz (matrix) +

BMS Newsl (1999) 52, 6. A. Wo

zincian, pale pink.

2/96 Spec's ex MM checked: green needles (microchem)  
= malachite (v Zn-free). White rad/spiky, FTIR  
= aragonite. Thin dk brown rounded  
blobs (all over the place) - diffc. to sample - FTIR  
(small sample) = qtz (matrix) + micals/clay(s)

BMS Newsl (1999) 52, 6. A. Woodburn :- "erythrite"  
zincian, pale pink.



1" 186 082559

FOWEY CONSOLS, Luxulyan, Tywardreath, (I) SA 5  
Cornwall

See also S. FOWEY CONSOLS (SA 77) LANESCOT.

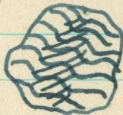
W<sup>h</sup> TREASURE, W<sup>h</sup> FORTUNE, W<sup>h</sup> CHANCE

Shown on RSWB's old map of Cornwall: "Rundell's Cornwall".

ca 2 miles SE of Luxulyan.

Rutley 15th ed, p 89. Apatite. p. 203, Millerite (Ni-pyr).  
p. 219, Silver.

BM Rhabdophane, brown botry. (like Wanl. vanadinite);  
v.g. cuprite, var. chalcotrichite; apatite, var. francolite;  
bismuthinite needles with chalcopyrite; brochantite,  
with sky blue langite



shaded: langite.  
rest: brochantite.

chalybite; niccolite;

"herrengrundite"  
ie. devilline

AWGK - Acres & acres of dumps, mostly very mucky and

cemented by iron gozzan. Rhabdophane on one specimen.

AWGK - Francolite, siderite, arsenopyrite  
Blende.

Rudler (1905), 17. Cassiterite var. "wood tin". p. 25 - francolite

Newwood: Bismuthinite xls in vughs.

JC (1871), 61: FOWEY CONSOLS (Lanescot) Tywardreath (Cu). Actinolite; stibnite; apatite; bismuthinite; blende; calamine (smithsonite); copper; chalcocite; chalcopryite; chakotrichite; chalybite; cobaltite; cuprite; francolite; niccolite; magnetite; marcasite; melanconite; melanterite; millerite; pyrite; silver; stannite; wood tin.

TMH (1868) 34. LANESCOT, St Blazey: Bismuthinite; blende; stannite; pyrite; silver  
— 11 — 52 FOWEY CONSOLS, Tywardreath: No mins not ment. above.

FOWEY CONSOLS, Tywardreath, Cornwall (II)

Rudler (1905), 41. "The gozzan... extended to ...  
100 fms below adit..."

MM 11-265 Bismuthinite

Dewey (1923) 42 ff. Section, p. 43.

Sett includes LANESCOT, WH. TREASURE, WH. FORTUNE  
e WH. CHANCE.

Lower Devonian slates e grits. Many  
lodes eg, from S → N; BONES; "A. BRANCH; MCKENNIE'S;  
CROSSPARK; SAMPSON'S; NOTWELL'S; COOK'S; ANN'S;  
WILLIAMS'S; REED'S; TRATHAN'S; BLACK; BICES L.



These nearly 11<sup>e</sup>, approx EW, mostly.

BONES. 6"-3 ft, quartz, chalcopryte, pyrite, chlorite,  
siderite

COOKS.  $\frac{1}{2}$ -3 ft. chalcopryte, pyrite, quartz

ANN'S 1 $\frac{1}{2}$  ft, similar.

WILLIAMS'S.  $\frac{1}{2}$ -3 ft, has chalcocite, melaconite,  
chalcopryte, limonite, pyrite, siderite,  
quartz, some brsmuthinite in cavities.

Native copper, in gozzan.

Ores of Ag, Cd, Ni, Sb, Sn also recorded. Worked  
to below 300 fms below adit (40 fms). Cu ores  
sold 1822-67. LANESCOT taken over in 1836.

Dines (1956) 565-567 Descrip. All looks rough &  
have quartz, chalcopryte, pyrite. Some also

FOWEY CONSOLS, Tywardreath, Cornwall (III)

have chlorite, siderite, limonite. Gozzans, with native copper & chalcocite reached 100 fms in E part of mine. Xls of bismuthinite in cavities in Crosspark & William's lodes. A cross-course has yielded niccolite, millerite, & other Ni ores. ✓ Other minerals: malachite, cuprite, melanconite, nat. silver, hemimorphite, cadmif. blende, stibnite, stannite, magnetite, apatite. ✓ 3 lodes in LANESCOT, in S, have in addition to Cu ores, cassiterite, blende,

calamine, silver ore & bismuthinite.

BM. Riv Comm (RJT) 5/68 - posnjakite

RSWB (8/66) 549 Dump in S part of complex  
at 082 556, being dug away. Muddy  
decomp, dump of pyritic snerge. Some quartz  
Dumps around 083 557 similar - slightly  
less mucky. One lump of matrix with small  
brochantite xls [BM X-ray] & a small  
cluster of ?rutile [?cassiterite] xls in a  
cavity



FOWEY CONSOLS, Tywardreath, Cornwall (IV)

CMRM (1995) Annabergite; Ni-skutterudite  
(chloanthite); rhabdophane (Nd); skutterudite;  
torbernite;

1" 186

SX 074 566

NEW FOWEY CONSOLS, Tywardreath, Cornwall

1" 186

SX 080 551

SA 77

SOUTH FOWEY CONSOLS, Tywardreath, Cornwall.

See also FOWEY CONSOLS (SA 5).

JC (1871), 61: (Cu, wkg.) Chalcopryite. ✓



1" 196

SX 073 533

WEST FOWEY CONSOLS, Tywardreath, Cornwall

1<sup>st</sup> 189  
FRADDAM MINE, <sup>SW 59 35</sup> Guinear, Cornwall.

---

See also Wh. TREMAYNE, <sup>SW 59 37</sup> etc.

Dines (156) 165      Part of Wh. Tremayne(?)

<sup>14</sup> 189 <sup>SW</sup> SOUTH WHEAL FRANCES, <sup>68</sup> Redruth, <sup>39</sup> Cornwall <sup>R</sup> 16

See also W. WH. FRANCES (R 44); BASSET etc.

BM: Libethenite; chalcopyrite.

Rutley, 15th Ed., p. 206, cuprite.

JC (1871), 52. S. WH. FRANCES, Illogan. (Cu, wkg.):  
chalcopyrite; chalcotrichite; cuprite;  
cyanosite (chalcanthite); libethenite;  
lithomarge.

Rayners Cat (1960) Cassiterite.

Dewey (1923) 27 Included in BASSET MINES, Ltd.



Dewey (1923), 28. Five lodes:

NORTH or MAIN lode: good gozzan & Cu one down  
to 40 fm level, then Sn. 2-12 ft wide.

ST. AUBYN LODE, SOUTH LODE, LITTLE'S LODE;

GT FLAT LODE did not carry Cu here.

Cu ones produced. 1845-1895.

Truro Mus: Libethenite

1" 189

SW 67 39

WEST Wh. FRANCES, Illogan, Cornwall. R 44

See also S. Wh. FRANCES (R 16)

JC (1871), 52: (Cu, wkg.) Chalcopyrite; cuprite.

Dawsey (1923) 27 Mention.

1" 190

Prob. = sh. at SW 7365 4980

Wh. FREDERICK, St. Agnes, Cornw.

AKHJ (1962) 2 24. Prob = shaft at above map ref.

Sett granted 1832 of Gt. GOONBELL & Gt. Wh.

HOSKIN. Tin & copper ones. Lodes

prob an extension of those of PENWINNICK [qv]  
& MATILDA M's to the W

Map p 29 shows Gt GOONBELL sett (part of)  
(of 1838) in area ~~of~~ around 724 505



Dines (1956) I, 475-6.

to be on E extension  
just E of Goonbell.

Tin & Copper Lodes.

to have gozzan with  
sulphide.

unlocated trial, said  
of Penwinnick M. lodes  
An 1832 plan shows

Copper Lode said  
spots of "copper

1" 190 SW 720 512

FRIENDLY MINES, St. Agnes, Cornwall. A 35

JC (1871), 57. (Sn, wkg.) Cassiterite. ✓

AKHJ (1962) 2 28 = CUANMOAN (W. PINK) MINE  
+ Wh. PRIMROSE. Wh. FRIENDLY.

map, p 29 shows Wh. HAWKE near here.

FRIENDLY STAMAS, SW 719 514 (Burt et al 1987)

Wh Friends, Lelant, Comm

See W. Wh. Towan



1" 190

SW 74 41

Wh. FRIENDSHIP, Gwennap, Cornwall.

R 61

~~See~~ also ST DAY UTD. MS.

JC (1871), 56:

Albite; blende; molybdenite;  
wolframite.

Dewey (1923) 35. Part of (ST DAY) UNITED MS. & GREAT  
LODE.

Dries

420

1" 190

SW 750 528

Wh. FRIENDSHIP, Perranzabuloe, Cornwall

AKHJ (1962) 2 36. = Wh. BLANDFORD. On

PERRAN Wh. MARIA lodes. By the Corn  
Mill near Anchor, in Perran Coombe.  
Small mine

Dines 492

1" 189 SW 55 31  
Wh. FRIENDSHIP, St Hilary, Cornwall

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See also PROSPER UTD MINES

Dewey (1923) Cu ores 1815-19, 1849-55



Wh Friston, Morvah, Corn.

See Morvah Kill M

Wh Gain, Lelant/st lves, Corn

See Vorvas M

Wh galver, Morvah . Corn

See Morvah Hill M



Wh. GALWAY, Padstow, Cornwall

---

See PADSTOW CONSOLS M.

1" 189

SW 41 35

GARDEN MINE, Morvah, Cornwall.

StJ. 65

= MORVAH HILL M [qv]

See (1881), 48:  Tin mine.

1" 190 SW 8147, 8148 818-488  
ST. Allen parish  
GARRAS MINE, St. Erme, Cornwall SA38  
= GWARNICK M. S. GARRAS @ 819477

JC (1841) 60 (Pb) Allophane; blende;  
calcite; dolomite; galena.  
= GV

Rudler (1905) 56. According to Pryce, the galena  
from Garras near Truro, gives 100 oz Ag/ton.

CMRM (1995) Linarite; pyromorphite;  
wulfenite;

M. Merry (2003) <sup>26/1/</sup> Micro-spec → RSUB [03-29] for ident;  
Apple-green xl crust on gozzany quartz  
(FTIR 29/1/03 = BAYLDONITE)



1" 189      Sancreed      SW 4329  
GARTH MINE, Illogan, Cornwall.      C. 36

Jc (1871), 52: Cassiterite, incl. var. wood tin. } "Illogan"  
Ludler (1905) 17: Cassiterite, var. wood tin.

Not in AKHJ or Burt et al (1987)

Dines (1956) 104 only gives a Garth Mine near  
SW 4329 on ~~Regarra~~ Regarra Downs 1 ml ENE  
of Sancreed [also = Wn Cock ~~les~~ Kewneylargus]  
- nowhere near Illogan<sup>SW 64</sup> but with  
"wood tin"

CMRM (1995) "wood" and "dog-tooth" cassiterite;

Wh Gayen, Lelant/St Ives, Corn

See Vorras M

1" 189  
GODOLPHIN MINE, Breage, Cornwall  
2½" SW 53 59, 320-3  
M 12

See also W. GODOLPHIN MINE, ST. E. M. (H 63); GODOLPHIN BDGE (M42)

TMH (1868), 34: (Cu, Sn). Apatite; cassiterite; chlorite;  
pyrite; chalcocite; chalcoprynite;  
wolfram.

DBB (1963) 18. One of oldest Cornish mines, in  
woods below Godolphin Hall. working before  
1678. v. profitable Cu mine, closed before 1850

GC Godridge. Geog Mag (1967) 686 Being reevaluated



1" 180

SW 58 31

WEST GODOLPHIN MINE, St Erth, Cornwall. H 63

See also GODOLPHIN MINE, Breage (M 12)

JC (1871), 50: Actinolite; blende; chalcocite;  
galena; malachite; melanconite.

DBB (1963) 18. Locally called "Wh. JUNKET".  
Before 1860 known as N.G.T. WORK MINE.  
Rechristened in last working 1866-1890, when  
reached 134 fms.

1" 189

SW 58 43

48

GODREVY CLIFFS

Hayle  
nr. ~~St. Ives~~, Cornw.

GODREVY POINT, SW 58 43.

JRK (2001) Riv Comm. RW Barstow had small amounts of gold in quartz from GODREVY CLIFFS, near ~~St. Ives~~ Hayle. Specks of gold in limonite in cavities - prob. pyrite relict - in brecciated ferruginous quartz. Blobs & specks around edges of the cavities.

1" 186 SX 24 72  
GOLD DIGGINGS QUARRY, St. Cleer, Liskeard.  
Cornwall

K 11

AR Min Mag 17, 15 (1913). Bertrandite (Be silicate) up to 5mm.  
(See Cheeseoring quarry, K4). Also MM 16 50



1" 185 Perranzabuloe SW 761 590  
WHEAL GOLDEN, Perranporth, Cornwall  
~~at Penhale Point.  $\frac{1}{2}$ " RSUB 11e See also PENTHALE POINT~~

Shown on GR's  $\frac{1}{2}$ " Cornwall map.

See also GOLDEN CONSOLS (A 23); E. WH. GOLDEN (A 60)

Rutley, 15th. Ed., p. 186: Pyromorphite.

Bants. Gazette p 296: "GOLDEN MINE, Perranzabuloe" "Carbonate  
& phosphate of lead" [Golden Consols?]

W. Phillips (1823) Cerussite; pyromorphite.

Ric Rae info (7/93) Mike Merry has found pyrom  
and some wulfenite by digging near  
fence by foot path. RSUB 7/93. His  
diggings found at 760 590. Nice pale green  
spiky pyrom. No wulfenite found. (PTO)

This pyro As-free (FTIR 7/93)

wulfenite MM → RSWB 93-106, sparse  
transp. reddish-brown bipyramidal, with  
poor pyromorphite & cream blades  
anglesite (+ quartz; FTIR 13/9/93)

CMRM (1995) Phosgenite

This pyro As-free (FTIR 7/93)  
wulfenite MM. → RSWB 93-106, sparse  
transp. reddish-brown bipyramidal, with  
~~poor~~ pyromorphite & cream blades  
anglesite (+ quartz; FTIR 13/9/93)

CMRM (1995) Phosgenite



Wh. Dream, Wendron, Corn

See Trumpet Consoles

Golden Bank M, Ludgvan, Corn

See Wh. Chance

1" 185

SW 76 59 A 23

GOLDEN CONSOLS, Pentrangakuloe, Cornwall.

See also Wh. GOLDEN (A 9); E. Wh. GOLDEN (A 60).

JC (1871), 58: (Sn) Cerussite; galena; pyromorphite;  
rock xl.; silver.



1" 185

SW 767 581

EAST Wh. GOLDEN, Perranzabuloe, Cornwall. A 60

See also. Wh. GOLDEN (A 9); GOLDEN CONSOLS (A 23).

JC (1871), 58: (Pb, wkg.) galena.

Golden Parlour M., St. Austell, Corn.

See Gt. Hewas Utd. M

758 514

Golla Farm, Herranzabuloe, Comm

See Lambriiggan M.

(Pb/Zn)



Gollawater, Peromzabuloe, (osm)

See Lambiggam M

(Pb/Zn sh's. near 756 505)

Wh gollawa (?=galven) Morvah, Corn

See Morvah Hill M

1" 186

SX 262 706

GONAMENA MINE, St. Cleer, Cornwall. K 90  
See also CARADON Mts, etc.

JC (1871), 63: (Cu, wkg.) Chalcopyrite; cuprite.

Dewey (1923) 50. In granite.

Lodes: SARA'S or SARAH'S - at outcrop  
gozzan with tin ore. GILPINS (8)  
W. CARADON) with yellow, grey & black Cu  
ores [chalcopyrite; {chalcocite or tetrahedrite; melanconite}]  
TAYLOR'S LODE (8) W. CARADON). Chalcopyrite.  
Cu ores produced 1848-72.



Wh. Gons, St Ives, Corn

See Rosewall Hill M's

1" 189

SW 66 40

Wh. GONS, Camborne, Cornwall

See also DOLCOATH MINE.

Dewey (1923): Included in DOLCOATH sett [qv]

Wh. Good Fortune, Lelant, Coon

See Wh Providence



1" 185

SW 742 534

GOOD FORTUNE MINE, Perranzabuloe, Cornwall.  
See also. PERRAN GT. ST. GEORGE MINE; CLIGGA HEAD,

Dewey (1923). Part of (PERRAN GT) "ST. GEORGE and  
DROSKYN". Country rock = Killas, with an  
elvan. MAIN LODE branches into N & S. LODES.  
Shafts are near Cligga Head. A Cu mine

AKHJ(1962)2 36. Next to Wh. Prudence, St Agnes.  
Composed of a number of smaller  
workings, including, probably, Wh. UNION,  
(working 1800-1804).

1" 189

SW 69 41 ?

Wh. GOODSPEED, Redruth, Cornwall.

AKHT (1962) 3, 10. = Wh. TRENGWITH, in the  
grounds on Trengweath; working 1768.

Lodes intersected by SILVER ADIT  
(See Hosking's Wh. Silver)  
[NOT in lines]

1" 189

SW

498

397

GOOLE PELLAS M., St. Ives, Cornwall

AKHJ (1961) L 18. Properly GOON PILLEZ. Ancient  
mine.



Centr. Around SX 007 585 (I)

(NORTH) GOONBARROW PIT, St Austell, Cornwall  
See also OLD BEAM MINE = GOONBARROW MINE

A. Wright & B. Cooper. (Rev. Comm, 10/69) Orthoclase  
ψ morphs (kaolinite) - "Pigs Eggs"

B. Cooper (Spec → RSWB, 3/74). Scorodite, small  
blue xls, in cassiterite-arsenopyrite-quartz  
vein.

RSWB 3/74 vg cassiterite xls; quartz, schorl.

R. Turner 6/80 Beryl - terminated, pale  
blue, free-standing xls. have been found,

also fluorapatite, topaz, turquoise,  
torbernite. Has holed through  
into OLD BEAM MINE [q.v.]

MJ Mins Cat (1989) "Cuprous Kaolinite", thick  
yellow-green layer on micaceous matrix  
CMRM (1995) Atheyite (? "requires analysis") (P.J. Golley spec;  
ex P. Seroka coll.); ~~topaz~~

730 508

Wh. Geer, St Agnes, Cornu

See Wh. Kitty



Wh. Geever, St Agnes

723 510

Comm

See Wh. Kitty

1" (180) <sup>2 1/2" SW 33 373347</sup>  
GEEVOR MINE, Pendeen, St. Just, Cornwall (I) <sup>10</sup>  
See also LEVANT MINE (STJ 14)

Visited, Sept. 1957 <sup>378343</sup> collected stuff off conveyor belt after first crusher: Arsenopyrite / chalcocite ✓ ore in quartz. No alteration mins. Some amethyst. ✓ CuSO<sub>4</sub> xls growing on freshly dug surface of old heap in mine yard. RSWB & GR.

~~GEEVOR CONSOLIDATED MINE.~~

Wh. GEEVOR MINE also, Locs 110, 111. at 375345

Darnley et al MM 32 654 (1960). Uraninite occurs in small amts. in the sulphide-rich parts of the lodes, close to the margins of the central

quartz leaders; one from which the  
maninite had been concentrated came  
from the NW extensions of the Sn-bearing  
lodes, below the ninth level.

Accepted age  $290 \pm 7$  m.y. (206/238 value).

DBB(1963)12 New name (from 1905) of NORTH  
LEVANT MINE, worked from ca 1810. Now  
also includes LEVANT MINE (q.v.).

JC(1871) 47. (Sn, working). cassiterite ("geevor mine")

Anon, Gems (1973) 5 [2] 9-10. Working — chalcocite xls,  
native copper; nat. bismuth; pitchblende; rare  
all minerals; little good cassiterite.



## GEEVOR MINE, St. Just, Cornwall (II)

R.W.B., Plym MMCT (1974) 5 [1] 7-8. Working.

Superb chalcocite crystals, up to 3 ins!  
Some beaut. chalcocite xls ca 1972 in  
new development in BOSCASWELL section,  
as superb, perfect xls  $\rightarrow$  1 in.

Rhodochozite recently as nice pink  
rhombic xls on quartz - only a few  
specimens.

A.M. Clark, A.J. Easton & M. Mount. "A study of the neotocite  
group" Min Mag (1978) 42 279-280 (M 26-30).

Neotocite recently found @ Geavor mine (coll. 1974)

R. Turner 6/80 Geevor mine is going to  
join up reach Crowns section of  
BOTALLACK MINE [q.v.]

M.J. Mins Cat (1989) Dolomite, creamy-beige  
translucent "cubes" to 7mm and large  
mass on quartz - Hanging Wall Lode.  
~~Min~~ Haematite (micaceous) Old Bill Lode.

GEEVOR AND LEVANT MINES

Russ. Soc. AGM., 4/91

Geevor Mine was originally known as Wheal an Giver, the first mention of which was in the Angarrack Smelting House records. Geevor Mine now on care and maintenance, works a swarm of narrow fissure veins in the northern section of the St Just Mining District. The company has raised some 5 million tonnes of ore since 1911 which has yielded 50,000 tonnes of black tin concentrate. Production in 1984 amounted to about 250,000 tonnes of ore that yielded 1,500 tonnes of black tin.

# GEEVOR MINE, St. Just, Cornwall (III)

In the years 1960-66 Geevor completed the sealing of a sea breach which kept the adjacent Levant Mine flooded. Following this, Levant was dewatered and is now flooded below the 302-fm level (the bottom level being the 350-fm level). In 1975-77 a subincline was sunk from the bottom of Victory Shaft with the aim of developing lodes at depth, linking the Geevor 18 level to the Levant 278-fm level, exploring ground below Levant and finally dewatering Levant to the 350-fm level. This subincline reached 21 level but never reached its goal of 24 level and thus the reported "riches" below the Levant 350-fm level have not been explored.

" ADULARIA  
ALLANITE  
ANDRADITE  
APOPHYLLITE  
ARAGONITE  
ARSENOPYRITE  
AXINITE

FLUORITE  
FRANCOLITE  
  
GALENA  
GOETHITE  
GOLD (NATIVE)  
GROSSULARITE

SCHEELITE  
SIDERITE  
"SPECULARITE" - HAEM  
SPHALERITE  
STANNITE  
STOKESITE



BECQUERELITE  
BISMUTHINITE  
BORNITE  
BOTALLACKITE  
BROCHANTITE  
BUTTGENBACHITE (unc  
ser?)

CALCITE  
CASSITERITE  
CHALCANTHITE  
CHALCEDONY  
CHALCOCITE  
CHALCOPYRITE  
CHLORITE  
COFFINITE  
CONNELLITE  
COPPER (NATIVE)  
COVELLITE

DIGENITE  
DJURLEITE  
DOLOMITE ✓

EPIDOTE ✓

HEULANDITE

JOHANNITE

KAOLINITE

" LIMONITE "

MAGNETITE

MALACHITE

MALAYITE !

(MANGANO) CALCITE

MELANTERITE

MOLYBDENITE

MONTMORILLONITE

PARATACAMITE

" PITCHBLEND "

PYRITE

PRYHYHOTITE !

QUARTZ

RHODOCHROSITE

TENNANTITE

" THURINGITE " = Ferrian  
TORBERNITE CHAMOSITE  
TOURMALINE

? [ " URANITE " (?)

WITTICHENITE

ZIPPEITE

# GEEVOR MINE, Pendeen, St Just, Cornwall (IV)

RSN 23 (1992)

## Cuprosklodowskite from Geevor

A specimen of tiny spherulitic aggregates of microscopic green needles from Peeth Lode, 17 level, **Geevor** (collected last year) has been tentatively identified as cuprosklodowskite on the basis of EDX analysis. The specimen is presently at the NHM for XRD. If anyone has any material from Geevor that they think might be cuprosklodowskite, Nick Elton and Jeremy Hooper would very much like to take a look at it.

*Extracted from the S.W. Branch Newsletter No. 9:*

## Sodium-zippeite from Geevor

All yellow zippeite-type uranium secondaries collected from **Geevor** last year which have been analysed to date (by XRD and EDX) have turned out to be sodium-zippeite (a first British occurrence). No zippeite has been recorded on any of these specimens. Further details in a future issue.

## Andersonite and schröckingerite from Geevor

Schröckingerite,  $\text{NaCa}_3(\text{UO}_2)(\text{CO}_3)_3(\text{SO}_4)\text{F} \cdot 10\text{H}_2\text{O}$ , and andersonite,  $\text{Na}_2\text{Ca}(\text{UO}_2)(\text{CO}_3)_3 \cdot 6\text{H}_2\text{O}$ , have been identified on specimens collected last year from **Geevor mine**, Pendeen, where they occurred on the walls of a drive along Peeth Lode on 17 Level. This is the first recorded occurrence of these species in Britain. Unfortunately the location is now lost due to the flooding of the mine. The schröckingerite occurred as small greenish-yellow spheroidal globules, up to 4mm in diameter, widely scattered over the tunnel wall. The globules appear rather featureless, but closer examination reveals them to be composed of aggregates of tiny, euhedral, pseudo-hexagonal plates (typically around  $50\mu\text{m}$  across, occasionally to 0.2 mm). Some appear to be cemented together by gypsum over the outer surface, and all exhibit a vivid yellowish-green fluorescence.

PTO

The andersonite is much less common. It occurs as small masses of intergrown, pseudo-cubic crystals to 3 mm on edge. The crystals are transparent and of a bright yellow-green colour. They also exhibit very bright yellow-green fluorescence under long wave UV light, similar in colour and intensity to that of the schröckingerite.

The andersonite occurs in close association with schröckingerite and in a few specimens, schröckingerite-gypsum aggregates are observed partially intergrown with andersonite.

Other secondary uranium mineralisation on Peeth Lode includes johannite and widespread yellow zippeite-type secondaries, which have recently been shown to be sodium-zippeite.

Ref: Elton, N.J. & Hooper, J.J. (1992) Andersonite and schröckingerite from Geevor mine, Cornwall: two species new to Britain *Min. Mag.* 56, p.124

Geevor Mine Friday 5th April

R S N (1991) 22

The Geevor field trip proved to be extremely popular and was heavily oversubscribed. Four groups were taken underground and most people seemed to thoroughly enjoy the trip. For some it was the highlight of the weekend and certainly a trip to be savoured: many of the areas visited are now under water, the water level is still rising and the future of Geevor looks increasingly uncertain. Although some of the parties had less time underground than expected, some worthwhile minerals were collected and areas of historical and geological interest were visited.

The four groups of people descended via Victory Shaft with eight to a 'shift' squashed together in the cramped conditions of the cage. The first group, after arriving at the 14 level shaft station (1400 ft deep),

burst out of the cage and headed off along the stoped Footwall Branch lode collecting specimens of zippeite from the roof of the drive. After a couple of hundred yards' trudging, the group branched off into the Union Corporation cross-cut and headed west towards Levant Skip Shaft. After passing the huge one foot thick steel watertight door (installed as a safety precaution) followed by the horizontal boreholes, driven

Cont'd → (IV)



# GEEVOR MINE, St. Just, Cornwall (V)

into the Levant workings for dewatering, the group arrived at Skip Shaft, followed shortly by Engine Shaft. The remains of the old pump rods can be seen in the shaft. This area was formally a good location for botallackite and connelite.

From here it was on to the Carbona Lode on 14 level, where massive sulphides, mostly pyrite with some chalcopyrite and arsenopyrite were found along with fluorite. From here the group walked along the 601 cross-cut to where the level had been driven through striped hornfels which contained lenses of a brown mineral thought at first to be cassiterite (but later shown not to be).

Some of the other groups were taken to lower levels of the mine. Two parties descended to 15 level and then rode down the sub-incline to 18 level. A stope in part of the old Levant workings on this level was visited, where some enterprising members managed to chimney up the narrow stope to collect paratacamite and francolite from the roof, beyond the reach of ordinary mortals. A quite large and almost cubic crystal of metatorbenite was also collected from the roof. Towards the end of this stope, the walls are

encrusted with gypsum, with delicate crystals an inch or two long. Some of this gypsum is stained green and chalcantite was also reported.

Treglowns lode was also visited on 18 level. This lode shows some areas of particularly rich cassiterite. Towards the end of the drive a wooden platform has been constructed to allow easier collecting. Cassiterite crystals are found in the veins near the end of the drive, some in the form of sparable tin. Hugh Nicholson had an excellent find here: examining the cassiterite vein with short wave UV light revealed areas fluorescing a bright pale blue, indicative of scheelite. Hugh obtained a single crystal of scheelite, pyramidal in habit, measuring 6 mm x 4.5 mm.

Compiled from notes by Neil Hubbard,  
Hugh Nicholson and others

RSN (1994) 24

## **Sodium-zippeite from Geevor Mine**

In the course of several visits to Geevor Mine during the early part of 1991, yellow zippeite-like minerals were collected from a number of under-

ground locations. All specimens were confirmed to be sodium-zippeite,  $\text{Na}_4(\text{UO}_2)_6(\text{SO}_4)_3(\text{OH})_{10} \cdot 4\text{H}_2\text{O}$  (identification by energy-dispersive X-ray analysis and X-ray diffractometry), the first British occurrence of this species (Elton & Hooper, 1993). No other members of the zippeite group were identified.

The sodium-zippeite displayed a variety of habits, occurring both as powdery or indistinctly crystallised efflorescences, and as well developed crystals and crystalline aggregates. On 17 level North Lode (one of the best locations) sodium-zippeite commonly occurred as divergent sprays of lath- or petal-like crystals, often intimately associated with atacamite. Gypsum, chalcantite, brochantite, antlerite, and rarely, metazeunerite and scorodite, were also recorded.

Sodium-zippeite was also found quite abundantly on 17 Level Peeth Lode, in an area rich in secondary uranium minerals. Here sodium-zippeite occurred as globular aggregates of acicular crystals with johannite and gypsum, and as mats and spherules lining joint planes in the granite.

Efflorescences of sodium-zippeite found on 14

Level were composed of broad, but very thin, interlocking leaves and associated with gypsum, atacamite, chalcocite, brochantite, johannite and antlerite. Powdery deposits, formed of minute tabular crystals of sodium-zippeite, occurred sparingly with gypsum on 16 Level along joints in killas.

It is worth noting that the early nomenclature and mineralogy of zippeite and related minerals was confused until the important work of Frondel *et al* (1976). British records of 'zippeite' prior to 1976 should be regarded as references to unspecified minerals, either of the zippeite-group, or merely of zippeite-like appearance.

#### References

Elton, N.J. & Hooper, J.J. (1993) 'Sodium-zippeite from Geevor mine, St Just, Cornwall'. *Min. Mag.* 57, 352-354.

Frondel, C., Ito, J., Honea, R.M. & Weeks, A.M. (1976) 'Mineralogy of the zippeite group'. *Canadian Mineralogist* 14 429-436.

Nick Elton and Jeremy Hooper

# GEEVOR MINE, St. Just, Cornwall (VI)

CMRM (1995) Albite; nat. arsenic; devilline;  
langite; "near" laumontite (XRD); roquesite  
( $\text{CuInS}_2$ ; Quantit. Data File Ore Min, 1986);  
uranopilitite; "wood" cassiterite; "blister"  
chalcopyrite; cyprosklodowskite (17 level,  
REETH LODGE); johannite (17 level, REETH LODGE)  
rhodochrosite (SIMM'S LODGE); meta-zennerite;

UKJMM (1993) 12. In 12 level, GEEVOR, recently  
copper and cuprite, post-mine "oxid." on  
iron rails.

BMS Newsl. (1997) 46, 7. Coll: Aurichalcite<sup>[?]</sup>, connellite, from  
CORNATION LODGE (R. Belson)



in J. Russ Soc (2005) 8 [2] 81-4. Antlerite

BM 1984.639 Volborthite (XRD)

Wh George, St Ives, Corn

See Wh Ayr

1" 190

SW 7450 or 7550?

GEORGE THE FOURTH M., St. Agnes, Cornw.

See W. MITHIAN; W. GOSHEN (?=).



Wh. Georgia, Germoe, Conn.

See Gr. Western M<sup>s</sup>

1" 190

SW ~~90~~ / ~~38~~  
83 / 93

GERRANS BAY, nr Veryan, Cornwall.

Truro Mus: Millerite ✓, in a calcite vein"

N. Hubbard, Priv. Comm (4/82). Millerite  
has been found in a brick pit (new?)  
inland from bay ("near Plymouth").  
Manager is a min. collector.

CMRM(1995) Brochantite;

M. Wolfe (2006) UKJMM 27 p6. Todorokite, aggs  
of lustrous silvery-brown scales in highly  
ox'd dolom-ankerite veinstone.



1" 190

Near SW 708 485

Wh. GERTRUDE, St Agnes, Cornwall

AKHJ (1962) 2 14 Wh's GERTRUDE & TALLACK, a  
little NE of Towan Cross - attempt to trace  
Wh. TOWAN lode E of E. Towan M. Wh. TURTON,  
loc unknown, nearby, also an attempt to  
work this lode. Wh. CHARLES also  
nearby [qv] Further E is Wh. DUCHY [qv]  
S. TOWAN nearby also.

All drained by Wh Towan deep adit

Gew (gweal an Top) M., Redruth. Corn  
See Pednandrea M.

1" 189

SW 67 14

QUE} GRAZE, Mullion, Cornwall.

L 15

GEW}

JC (1871), 54:

Steatite

"Que graze" Mullion



1" 189

SW 67 17

GHOST CROFT, Mullion, Cornwall. L 16

JC (1871), 54: Copper.

Rudler (1905), 45. Native copper, very large masses from a mine at the Ghostcroft, occurring near junction of the serpentine with hornblende schist.

CMRM (1995) Chrysocolla (GHOSTCROFT MINE);  
prehnite (G. MINE)

February.  
units unloaded  
rose from  
2,217,000.

and Son, the  
up, announces  
Crabtree, chair-  
Amies, has been  
the boards of the  
its trading subsi-  
s Limited.

ust now, but its  
generosity.  
n for the Stock  
s and their de-  
60.  
Memorial Fund

7 Angel Court, E.C.2

## Bankers Back Tin Venture

**K**LEINWORT, BENSON, LONSDALE, the merchant banking firm where Mr. Reginald Maudling is an executive director has taken a 25 per cent. stake in a new Cornish tin mining company.

It is Baltrink Tin which is to work the old Giew mine on Trink Hill, about three miles from St. Ives.

This mine closed down in 1922 after producing tin for more than 60 years.

Other partners include

tors which announced a fall in profits last month, and Dubilier Condenser, the Acton firm, which has not reported on its trading since last July.

Rhodesia-Katanga with a 30 per cent. interest stake and Westfield Minerals of Canada with a 25 per cent. interest.

Westfield Minerals have already investigated the area.

Beer output in February at 2,011,415 bulk barrels was the second highest for that month since 1947. But it was about 5 per cent down on February, 1964.

Eagle Star, Phoenix, Guardian  
and London Assurance

1" 189

SW SO 37

GIEW (CONSOLS) MINE, Towedack, Cornwall. H 50

See also Wh. REETH; ST IVES CONSOLS.

JC (1871), 48: (Sn, wkg.) Cassiterite; schorl. ✓

DBB (1963) 11 old BILLIAMINE (= REETH CONSOLS)  
on slopes of Trunk Hill later renamed  
GIEW MINE during new working by re-constituted  
ST IVES CONSOLS company. At 240 fms  
when closed, 1923, due to low price of Sn

Eve News 1964 Baltrunk Tin Co to rework  
old GIEW mine on Trunk Hill. Closed  
in 1922, after producing Sn for more  
than 60 years.



6C Grenville Geog Mag (1967) 686. Being drilled by  
a consortium of London & Canadian companies.

1" 189

SW 503<sub>s</sub> 379

Wh. GIFT, Towednack, Cornwall.

AKHJ (1961) L 34 . Small mine, with 5 tin lodes

1" 189

Cent on SW 689 431

Wh. GILBERT, Redruth, Cornwall

See also S. TOLGUS M's; W. TOLGUS M; Wh TOLGUS.

AKHT (1962) 3, 5

Tolgus Downs  
sold in 1714.

Early Cu mine, on  
where Cu ore kept  
Cu, Sn.

Tolgus lodes included Wh PEDLAR lode, in  
Sparnon Downs, cut by Wh. RAVEN [W. Tolgus]  
adit; Wh. HOPE lode; WOON RAWE = GOON RAWE  
in Sparnon Downs; Wh LAITY adit on Wh  
ROBIN lode on goonrawe Down.



1" 189

SW 58 32

Wh. GILBERT, St. Erth, Cornwall.

H 62

JC(1871), 50:

Cassiterite.

Dines p 190 1 $\frac{3}{4}$  ml SW of Leedstown

[cf Wh GILMAR SW 580 341?]

1" 186

SX 2½" Liskeard 293680

Wh. GILL, St. Ive, Cornwall.

K 67

See also GLASGOW Wh. GILL (K 114).

JC (1871), 64: (Cu, Pb, wkg.) Chalcopysite; galena.

= Wh. HAYFORD (K 116)

1" 186

Sx 29 67, 29 68

GLASGOW Wh. GILL, St. Ive, Cornwall. K 114

See also Wh. GILL (K 67).

JC (1871), 64: (Pb, wkg.) galena.



1"185

SW 99 58

GLASS MINE, Tresaize, Cornwall.

AR MM21 Felspar quarries at Tresaize  
(glass mine) with fine pegmatite vein  
[Tresaize not in OS gazz]

[= Tresayes]

Wh. Glory, Lelant, Corn

See E. Wh. Reeth

Wh. Glynn (Wh Madly) St Agnes, Corn  
See Blue Hills 11



1" 189

SW 59 32

GODOLPHIN BRIDGE M., Breage, Cornwall. M 42

See also GODOLPHIN MINE (M 12)

JC (1871), 54: Cu mine.

1" 189

SW 58 43

GODREVY POINT, Gwithian, Cornw.

♀ KYWANCE COVE (SW 6813)

BMSN ('05) 10, 8-9. David Clough. From KYWANCE COVE @ SW 586 432 ~ 1 km N of Gwithian & 750 m E of GODREVY POINT. Adit at base of cliff ~ 75 m long, has quartz lode with sporadic mass. galena & sphal. Coatings of chess → light green acic. pyromorphite xls → ~ 0.5 mm in cavs. Some blue-gr stains w drusy crusts of minute pale blue xls, poss. cumengeite? In sea cave & vein expos @ foot of cliff, phosgenite xls → ~ 0.5-7 mm, cerussite needles. Rare rough cubo-oct xls galena.

GOONBARROW { PIT  
Sr. Austell, Cornwall. SA 60  
~~Now part of NORTH~~ = N. GOONBARROW PIT

Jc (1871) 61 "(Sn, kaol. wkg) Cassiterite; kaolin;  
"Goonbarrow mine" Zippeite?

RUSS. SOC. AGM 4/91

SX 007 585

GOONBARROW CHINA CLAY PIT

ALBITE  
APATITE

BIOTITE

CASSITERITE

GILBERTITE

KAOLINITE

LOLLINGITE

MUSCOVITE

OPAL

QUARTZ

STANNITE

TOPAZ  
TOURMALINE

WOLFRAMITE



Vic Rae Riv Comm 8/93 with M. Merry found  
nice clear blue  $\frac{1}{4}$ " apatite xls &  
clusters in Goonbarrow pit recently

CMRM(1995) Amethyst-quartz; tourmaline ("achroite")

Goonbarrow China Clay Pit RSN(1991)  
Sunday 7th April 22

The party, limited to ten people, was guided around the pit by Simon Dominy.

Unfortunately, it was not possible to visit the area of the pit where the Old Beam Mine tin lodes were intersected, or the old Imperial Goonbarrow area owing to extensive rock moving operations which were in progress. However, the accessible area produced a little cassiterite in tourmaline veinlets, some

vuggy pale amethystine quartz and an iron filled nodule (nicknamed 'inkpots' by the clay workers).

An excellent xenolith or roof pendant was also discovered and photographed by several members of the party.

On our journey out of the pit, Simon guided us around some of the clay treatment machinery. Our thanks to Simon and to ECC International for making this trip possible.

Owen Baker

# GOONBARROW PIT, St. Austell, corn (III)

R. Soc. N 23 (1992)

Goonbarrow China Clay Pit, St. Austell,  
Cornwall 26th July 1992

Some ten members of the Society met at the Goonbarrow pit office at 10.30am. Shortly after, they proceeded into the pit and down to the Old Beam Lode sites. Owing to the recent dumping of waste, the best exposure of the lodes has been covered, however further up the pit slope the cassiterite mineralised veins are still exposed. From here we proceeded down the pit incline to the 'new sump'. This area shows recently exposed NW-SE trending epithermal veins that are clearly seen to cut and and displace NE-SW trending greisen veins with minor cassiterite. The epithermal veins are essentially massive jasper but with local vughs of sharp amethystine quartz.

We then went to the southern end of the pit where massive quartz-tourmaline veins are exposed. These rarely produce cassiterite and lived up to their reputation. The stockscheider pegmatite was the next port of call. This represents the contact zone of two contrasting granites and is composed of 'curved' alkali-feldspar. On our way out of the pit we walked along the upper haul road where greisen veins and aplite dykes were seen. Back at the top of the incline half the party proceeded out whilst the remainder looked at the bucket wheel and spiral classifier plant. From here we left the pit and went on to the plant inspecting the hydrocyclones, Dorr-Oliver settling tanks and finally the flotation cells. I hope that all members of the party had an interesting visit as Goonbarrow continues for the moment to be geologically rather than mineralogically rewarding. My thanks to ECC International Production Department for allowing us access to their workings.

Simon Dominy

N.

As the afternoon continued our numbers dwindled and by about 3pm it was suggested that we had a quick look in at Goonbarrow Pit. Fortunately the numbers had dwindled sufficiently to allow transportation of the party from Gunheath to Goonbarrow in one single trip with the Landrover.

Goonbarrow Pit is now one of ECC's major clay producing pits in the St. Austell area. It encompasses about a dozen, once individual clay pits and also includes the Old Beam and Wheal Hope tin mines.

RSN (1995) 27

As time was running out we headed for the north-west side of the pit which has produced good blue apatite and topaz crystals over the years. The granite in this area is not heavily kaolinised and hence the area is not worked to any great extent. However, the granite does contain pockets and veins of pegmatite, some of which carry apatite, topaz, schorl, fluorite and occasionally torbernite as well as quartz and orthoclase crystals.

In the relatively short time available most of the party managed to find a few crystals of apatite. Paul Roe found a reasonably large gemmy crystal of pale-blue apatite and Mike Merry's hard work was rewarded with some apatite crystals shot through with blue tourmaline needles giving them a dark blue appearance.

and Bugle to Goonbarrow Pit. Here Jeremy gave another demonstration of his off-road driving skill. I think that's the only reason he runs these trips. This one involved a long crumbling track next to an unpleasant sheer drop. I was still wondering how they'd get the ambulance into the pit, when we halted. The track ends at an area of large pegmatite boulders, quite unbreakable but there was some smaller pieces lying around as well. There we found apatite, nice albite, gemmy torbernite, tiny scorodite, pharmacosiderite, and some topaz. John Downing, who had already found caxoxenite at Gunheath, found honey-brown gemmy cassiterite in a vein of schorl. I think everyone had a good day; I know I did.

RSN (1996) 28, 15

busy 'upstream'. Cassiterite was found, but it was rather poor. I discovered some nice specimens of tourmaline and saw bluish-white topaz

RSN (1996) 29



SW

New

724

505

73

49

GT. GOONBELL M., St Agnes, Cornwall

---

See W. FREDERICK

1" 190

SW 79 53

GOONHAVERN MINE, Newlyn, Cornwall. A 79

78 53

TMH (1868), 48. Blende. ✓

1" 190

SW 71, 72 Centon 7220

GOONHILLY DOWNS Grade, Cornwall. L 13  
See also COUNTY BRIDGE Q'y.

JC (1871) 54: Asbestos; chalcedony; hornblende;  
serpentine.

CMRM (1995) Hercynite, in serpentinite;  
tremolite;



1" 190

SW 726 505

GOONIN(N) IS MINE, St. Agnes, Cornwall

AKHJ(1962) 2 Not mentioned, but map on p29  
shows S. GOONLAZE MINE in this area.

Goonlaze Mines, St Agnes, Cornw.

See Wh. KITTY

Gt. Goonlaze - 725 515

S. Goonlaze - 728 505

(? = Gooninis M)

Joon Pillez M, St Ives, Corn

See Goole Pellas M



Goonrawe M, Redmuth, Corner

See Wh. Gilbert

185 SW 94 54 SA 25  
GOONVEAN CHINA CLAY PIT, St Stephen-in-Brannel  
(I) Cornwall

GR 6/55 Pit 250' deep; contains a large quartz vein at bottom.

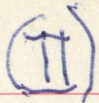
AWGK (1959) Fr R6-SC (MA 15 565) Fluellite in cavity in  
quartz-tourmaline vein, with wavellite,  
chalcedony.

Anon., Mine & Qu Eng. (1958) 24 476 & 538. [cf MA 15 565]

RSWB, L Nash (8/66) 5 52 Quartz; school,  
purple fluorite coating joints

C. Rogers (1968) Turquoise

Goonvean pit,



Cornwall

Anon, Mine + Qu. Eng. 1958, 24, 476 and 538.

cf. MA 15-565



AWBK, RGSC. 1959, 19, 42.

Fluellite in a cavity in a quartz-  
tourmaline vein, with wavellite and  
chalcedony.

1<sup>st</sup> 190

SW 70 41 (?)

Wh. GORDON, Redruth, Cornwall.

AKHJ (1962) 3 13.

Wh. GORDON adit, from Wh. FAT

in South Downs, to Wh. Zausen, nr. top of  
Lanner Hill.

14 190 732429  
WHEAL GORLAND, Gwennap, Cornwall. (I) R 9<sup>I</sup>

See also Wh. UNITY; Wh. MUTTRELL, POLDICE, SE DAY UTD; SE. DAY;  
AR Min. Mag., 16, 55, (1911): { fluor; qtz; cupy; blende; chlorite; as. py.  
AR Min. Soc. Notice, June (1955): Phenacite. N part of mine, with  
Ceruleite, <sup>sky-</sup>blue bottry eggs &  
spheres on lirioconite & assoc with clinoclase and olivinite  
or chrysocolla. MA 13 30

AWGK, RGSC, (1952): Cyanotrichite (Lettsonite), hydr. basic Cu+As  
sulphate. Pale blue minute needles in cavities, or fibrous crusts, with  
olivinite. Olivinite, good but small spec's. Plumbogummite  
in pinkish qtz, with carminite and torbernite. Pseudomalach;  
cornwallite; chenevixite; mimetite; metazeunerite; hisingerite.

Visited, June 1955 GR (with AWGK?). Bewden's shaft dumps by the  
roadside. Plenty of chenevixite  $\text{CuFeAsO}_4(\text{OH})_2 \cdot \frac{1}{2}\text{H}_2\text{O}$ , dark  
yellowish-green. Acicular olive green olivinite  $\text{Cu}_2\text{AsO}_4\text{OH}$ .  
Traces dark blue clinoclase?  $\text{Cu}_3\text{AsO}_4(\text{OH})_3$ . Pharmacosiderite  
 $\text{Fe}_5(\text{AsO}_4)_3(\text{OH})_6 \cdot 6\text{H}_2\text{O}$ , dull green minute xls sprinkled on qtz,



containing wolframite. Scorodite  $\text{FeAsO}_4 \cdot 2\text{H}_2\text{O}$ , light  
bluish-green <sup>pointed</sup>transpar. xls in vughs. Liroconite  $\text{Cu}_2\text{As}_2\text{O}_9(\text{OH})_4 \cdot 4\text{H}_2\text{O}$   
light sky-blue opaque pointed xls. Plenty fluorite, one spec. with  
yellow cubes. Cuprite + copper - GR. Zeunerite on  
quartz. (These sometimes have carminite inside)

Visited, Aug. 1958 RSWB & GR. Very disappointing. One  
rather good spec. olivine on qtz; a few smaller  
ones; minute cubes of fluorite masquerading as  
pharmacosiderite! [?]

BM: chalcophyllite, with connellite; libethenite;

Rutley, 15th Ed., p. 201, earthy cobalt [Hey = asbolane]<sup>(ite)</sup>

(Cont'd II

Wh. GORLAND, Gwennap, Cornwall (Cont'd) (II) R 9<sup>II</sup>

JC (1871), 56: (Cu) Asbolite; chalcophyllite;  
chalcopryite; chalcotrichite; azurite;  
chrysocolla; clinoclase; copper;  
cuprite; fluorite; liroconite;  
malachite; minetite; molybdenite;  
olivenite; opal; pharmacosiderite;  
scorodite; torbernite; vivianite.

MM 321 (1959) Cornubite, massive light apple-green,  
with liroconite xls.

Rudler (1905) 52. ~~Liroconite~~ Liroconite seems to have been  
found only in Wh's UNITY, GORLAND, & MUTTRELL.

p. 43. W. Phillips, Trans G. Soc. : (1811) 23 described & figured  
the fine xls of cuprite from Wh. Gorland. There there  
were three lodes, but most of the cuprite was  
yielded by the gozzany part of Muttrell lode  
"one to which no other lode hitherto described in the  
county of Cornwall bears any analogy". The gozzan  
extended to considerable depth & yielded a  
great deposit of cuprite assoc. with native  
copper, <sup>[chalcocite, Hg<sub>2</sub>]</sup> copper glance, <sup>[melanconite]</sup> black oxide and  
arsenate of copper, mispickel, quartz and  
fluor spar.

p 73. Pharmacosiderite with scorodite



Wh. GORLAND, Gwennap, Cornwall (III)

AKHJ vi (1963), 11-13. <sup>Photo, p. 26.</sup> Map, p. 12.

W. of Wh. UNITY (qv) & on same  
lodes. "A treasure house of rare & beautiful minerals"  
but lumpy, sometimes poor & sometimes "so rich that  
close watch had to be kept on the men to prevent  
their selling the most valuable ore ~~the~~ as  
specimens to mineral dealers" (William Francis,  
"Gwennap", p. 11). At 100 fms depth "still ~~in~~ a great  
gozzan & not yet into ore" In 1813 a quantity  
of native copper obtained so pure that it was  
despatched to the smelters packed in fish casks.  
By 1819 96 fms below County Adit & still being

worked in depth. No engine needed at that time, as water drained into nearby Wh. Unity. During the 1790's, N part worked separately as Wh MUTTRALL

Map on p12 shows: PAULS Sh; SIM'S Sh; DAVEY'S Sh; DAVEY'S FOOTWAY Sh; WILLIAM'S Sh; ROBERT'S Sh; COLLIN'S Sh; OLD ENGINE Sh; BAWDEN'S Sh; MUTTRALL Sh; FOOTWAY Sh; DINNISD'S Sh; SKINNER'S Sh; MORCOM'S Sh; GREEN'S Sh; & also shows boundaries with adjoining Wh's UNITY WOOD; POLDICE, JEWELL, & ~~PINK~~ PINK.

AWGKMM 32 430 Beudantite, carminite, zeunerite  
Dewey (1923) 30. Included in POLDICE. Here the granite rises to the surface. Six lodes carrying  
[cont'd IV]

Wh. GORLAND, Gwennap, Cornwall. (IV)

Cu ores, all underlying N except DENNIS LODGE, which is vertical. Carne (Trans RGSC (1882)) states that the principal lode has been traced for two miles, & passes through Wh. UNITY & CREEGBRAWSE.

Gold found in gozzan, much fluorite worked.

Cu ores produced 1815-36, 1838, 1845, 1878.

W. Phillips (1923) Large dark blue cubes of fluorite, lately.  
Azurite, sparingly; chrysocolla; lirioconite;



clinoclase; olivine; pharmacosiderite;  
molybdenite; cuprite; "uranite"; copper;  
mimetite.

Truro Mus: Azurite; lirioconite; clinoclase;  
chalcophyllite

BM: Cuprotungstite, yellowish-green glassy  
massive.

RSWB (8/65) 4 206. Baroden's Sh. dumps, at 732 4285.  
Vg scorodite, blue xls in qtz; good green pharmacos;  
cuprite; olivine; some pale blue green  
micro hex plates ?chalcophyllite

Wh. GORLAND, Gwennap, Cornwall (V)

RSWB (8/66) 5 57. Bawden's Sh. dumps: Scorodite;  
pharmacosiderite, olivine; connellite,  
minute blue needles in chalcocite;  
cassiterite xls.; quartz; chalcopyrite;  
? libethemite; chenevixite, traces clinoclase

C. Rogers (1968): chrysocolla; clinoclase; cuprite;  
chenevixite; liroconite; malachite;  
olivine; pharmacosiderite

Minerals show  
~~R. Taylor's stock~~ 4/85. Strashimirite, thin  
films of apple green microneedles. (OK bought one)

a gorland

M. Merry, spec. to RSWB for ident (7/93)

Langite, blue xls (like Hld. Edge!) with  
chalcophyllite & cuprite on quartz.

The langite ident by FTR (7/93).

CMRM (1995) Bayldonite; brochantite;

"sparable" cassiterite; gibbsite; hübnerite  
(on N dumps); leucophosphite; parnaite;  
metazeunerite



# Wh. GORLAND, Gwennap, Cornwall (VI)

R. See. N. (1992) 23

Wheal Gorland, St. Day, Cornwall  
2nd June 1991

Not surprisingly there were no absentees for this trip. The leader of the 'custodians' of this mine, Dave Smith, started off by giving us a very useful explanation of the underground geography and the state of their exploration to date. The entrance to the mine is totally incongruous - a small metal trapdoor in the middle of a field grazed by horses, not raised in any way from the level of the field. But once through the trapdoor, one enters a very different world indeed.

We descended 175 feet of staged ladders down Davey's Footway Shaft to shallow adit level. At shallow adit level the team have been working south in the direction of Muttrells lode, but have not yet reached it. To the north, they are working their way through the killas towards Wheal Pink.

Many workings along Davey's lode are accessible at shallow adit level and we also went down 60 ft, via 'interesting' chain ladders and ropes, to middle adit level. Water level is at present at about bottom adit level (a further 60 ft again).

The most spectacular aspect, apart from the workings themselves, were the wall coatings of chrysocolla which were almost complete in places. The collecting was limited, but cuprite, chalcophyllite, wolframite and fluorite were hauled up the shaft at the end of the trip.

The participants are indebted to Dave Smith, Roy Morton, and Gavin and Steve for giving up their morning to show us around so ably but more importantly for the continuing exploration and safe-keeping of the underground workings themselves.

Alan Brownscombe

[SW Newsletter Editor's note: This trip was repeated on 11th August 1991. The details of the visit were essentially as described above. The minerals collected were also similar, although detailed examination of some specimens of native copper encrusted with blue-green botryoidal crust, revealed minute crystals of spangolite. A fine hand specimen of chalcophyllite was also recovered on the second trip.]

R.S.N (1992) 23

Wheal Gorland, St. Day, Cornwall 12th  
April 1992

An interesting and enjoyable trip for the 5 members who attended, only slightly marred by the half-hour wait for the 3 members who were expected, but did not turn up.

As usual we were well looked after by Dave Smith and Roy Morton who took every precaution to ensure our safety and enjoyment. Once again we were impressed by the tremendous amount of work put in by Dave and his team in excavating, timbering and laddering the Davey's lode and shaft area of the mine.

Most collecting was done at middle adit level in Davey's lode where we found specimens of cuprite, native copper, chalcophyllite, chalcocite, chrysocolla, lirioconite and fluorite, although none

were outstanding. However, we had a good trip and, as always, nobody came away empty-handed.

Steve Hall

Wheal Gorland, St. Day, Cornwall  
26th April 1992

Dave Smith gave an initial briefing at the Wheal Unity dump meeting point prior to 'bussing' the party to Davey's footway shaft in his Land Rover. The project has continued for some 20 years and the description of the group's work, backed up with some spectacular photographs, was very impressive.

Smith's Subterranean Safari started with a tight descent down the staged shaft ladders with, blessed relief, the collecting bags lowered in two stages. The perseverance involved in clearing half of the depth of the shaft and the ingenious routing of the shaft ladders and platforms reflect the abilities of those involved in the attempt to open up Wheal Gorland.

After being suitably impressed by the 'Chrysocolla Drive' we continued down to the bottom of the stope which is the main collecting area. The area of mineralogical interest is the fractured granite of the footwall contact zone of the 0.8 m wide fluorite vein. The granite-killas contact is some 8 m above the interesting area and is likely to be of major importance in the paragenesis of the comparatively exotic mineralogy. *In situ* collecting success was very limited, but Gary Crutchley secured a specimen of 'cantonite' comprising of covellite replacing 6-8mm cubic crystals of galena. On leaving the stope Gary and Jeremy Hooper found

Cont

# Wh. GORLAND, Gwennap, Cornwall (VII)

a 12 cm block of interesting-looking granite matrix on a platform and asked Richard Williams, who still had a hammer handy, to crack it open. Duly split, the block yielded 2 superb specimens with a 3-4 cm area of beautifully crystallised 2-3 mm (exceptionally 5 mm) chalcophyllite. In daylight 0.5 mm darker blue crystals with the chalcophyllite were observed and the initial identification of spangolite proved to be correct. A subsequent more detailed examination showed the presence of strashimirite.

We are indebted to the group of 'adventurers' who are to be complimented on their industry and far-sightedness and thanked for so genially accommodating visits by people who appreciate their endeavours. On behalf of the SW Branch and the Russell Society as a whole may I express our gratitude and wish them all success in their future explorations.

Chris Scheduling

RSN(1997)30. Nothing new.

RSN(1998)33 10 Field trip,  
~~usual~~.

underground.

Nothing new



M.S. Rumsey & G.M. Cressey (2010) J. Russ. Soc. 13,  
57-61. "The 1st confirmed Brit. occ. of sieleckiite,  
 $\text{Cu}_3\text{Al}_4(\text{PO}_4)_2(\text{OH})_{12} \cdot 2\text{H}_2\text{O}$  from spoil at Wh. Gorland,  
St Day, Cornw."

~~with~~ spec's coll. Rex Cook in 1972 6' down in  
dumps of Bawden's Sh at X-roads. Fe-stained  
gozz quartz much fractured & ruggy, friable  
→ small friable spec's. Voids have whitish  
porcellanous halloysite. Some have sky-blue  
acid-spherules of ceruleite → ~1 mm, rarely  
<sup>minuscule</sup> clastic with small [smoother] balls of  
lirioconite-blue sieleckiite to ~0.5 mm, no  
obv. xline, also forberrite, zeunerite, an  
unid. black Mn oxide.

1" 190

SX 01 41

GORRAN HAVEN, Gorrnan, Cornwall. SA 48

JC(1871) 60

Calcite.

1" 190

SW 75 50

Wh. GOSHEN, St. Agnes, Cornw.

See <sup>also</sup> Wh. MITHIAN

AKHJ (1962) 2 24, 50. E of Wh. MITHIAN e  $\frac{1}{2}$  ml

N of PERRAN Wh. VYVYAN. Prob = GEORGE IV MINE



1" 185

SW 9 5

GROSS MOOR, St. Dennis, Cornwall

Collins

MM 16 30

Cassiterite, var. wood-tin.

(1911)

BMSN (2000) 57 8. "Stream tin" cassiterite

Wh. goth, Morvah, Corn.

See Morvah Hill M

11 185

SW 998 528

GOVER MINE, St. Austell, Cornwall. SA 61

JC (1871), 61: (Sn, wkg.) Cassiterite.



Wh Grace, Lelant, Corn

See Wh Providence

1" 190

SW 71 41

Wh. GRAMBLER, Redruth, Cornwall.

See also N. Wh. GRAMBLER; ST. AUBYN LTD MINE;

KCD(1952) 116. To SW of St Aubyn United mine.

CMRM(1995) Magnesite (Wh. GRAMBLER, Gwennap)

1" 190

SW 71 41 R 77

NORTH Wh. GRAMBLER, Rednuth, Cornwall.

TMH (1868), 50 (Cu) Calcite; fluorite.



1" 185

SW 91 50 (Village)

GRAMPOUND ROAD, Cornwall

See also SOUTH TERRAS MINE

L.S. p139, Torberrick, beaut. xls "nr. Grampound Rd." (? = SOUTH  
TERRAS M.)

BM: Acicular autunite in vughs.

Wh. Grass, St Agnes

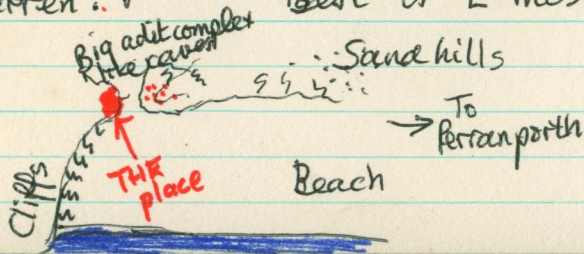
Cosm

See E. Blue Hills 11

1" 185 SW 764-5 575  
GRAVELHILL MINE, Perranporth, Cornwall (I) A 11  
near Ligger Point. RSWB  $\frac{1}{2}$ " 11e  
Shown on GR's  $\frac{1}{2}$ " Cornwall map.

Arnold Frisler, priv comm (verbal, at mineral  
show 4/87): Strunzite and beraunite  
have been found.

RSWB 6/8/87. Explored; eventually found  
right place! Dumps, opencasts high up are  
barren. Best is E-most dumps under cliff.



"Limonite", relict  
pyrite; quartz;  
siderite; cavities  
lined with



dark green blades beraunite & straw-  
coloured needles stunzite. goethite  
blackish coatings, common. Small nearly  
colourless crystals in sideritic  
matrix, of two types - spiky & equant.  
IR of both similar BUT not enough  
material & contaminated - IR like  
siderite + broadish abs. in  $\text{PO}_4/\text{Si/S} \dots$  region.  
Some powdery bright yellow crud coatings

Dines (I) (1956) 44, 440, 441-2. Zn, Fe ores  
N end part of Ferran Iron Lode. Sphalerite,  
galena, pyrite, limonite, siderite, "brookon  
thaematite" (= goethite?).

# GRAVEL HILL MINE, Perranporth, Cornwall (II)

Russ. Soc. Newsletter 20 (1990)

## **PRELIMINARY REPORT ON THE MINERALOGY OF GRAVEL HILL MINE, PERRANZABULOE, CORNWALL**

Colin Sparrow has generously provided this mineralogical note which should be of some interest. Please note that there is some contention between several academics and institutions about the identifications.

The recorded species as of 1989 were chalcopyrite, galena, goethite, lepidochrochite, pyrite, pyromorphite and siderite. The current additions are akaganeite (2,3), baryte, beraunite (2,3), carminite, corkite, diadochite (1), ferro-strunzite (1), fluorapatite, jarosite, lanarkite (3), linarite, phosgenite, phosphosiderite (3), rockbridgeite, strengite, strunzite (3), vivianite, whitmoreite (1).

The so-called 'oxidised beraunite' is to be redefined as an individual species. 'Ferro-beraunite' (1) should possibly be included in the above (pers. comm. Stefan Weiss of Munich University)

Several other species are under investigation at this time.

- (1) Possible first British occurrence.
- (2) Possible second British occurrence.
- (3) Possible first south-western occurrence.

CMRM (1995) Nat. sulphur

RSW (1994) 24

### On a fluorescent-magnetic specimen from Gravel Hill Mine

There can be relatively few minerals that display both strong magnetism and fluorescence. Such a specimen was found at Gravel Hill, Perranzabuloe, on the field trip held there last year (3 May 1992). Upon visual examination, the specimen appeared to be composed of two phases: a translucent to opaque brown mineral, mainly massive, but with some crusts and small vugs of tiny tapering prismatic crystals, and a few small white veins passing through the brown mineral.

An initial microprobe analysis of the crystals and white mineral was not very illuminating. The white veining was revealed to be quartz, but in the crystals, only iron with a trace of manganese was detected. The appearance of the crystals in the SEM and under the stereo microscope was very suggestive of siderite, which would be consistent with the analysis. But, as siderite is neither magnetic nor fluorescent, further tests were obviously required.

Some of the specimen was ground up and examined by XRD. The resulting pattern was rather complex and evidently due to a mixture of several species. Further microprobe analysis of the powder used for the XRD and various other bits of the specimen revealed significant amounts of calcium and phosphorous. This new information finally enabled a good match to be found for the XRD pattern.

The specimen turned out to be a mixture of siderite, fluorapatite, magnetite and a little quartz. The fluorapatite accounts for the fluorescence, and the magnetite explains the magnetism! These two species form part of the groundmass of the samples and seem to be mixed quite intimately with the siderite, although a few tiny prisms of apatite were noticed in some of the vugs. The brown tapering prismatic crystals in the vugs and covering parts of

the samples were indeed siderite, containing a little substituted manganese.

So, a complex sample, but despite its unusual properties, composed of rather mundane ingredients.

Howard Miles and Nick Elton



# GRAVEL HILL M., Perranporth, Cornwall (III)

RSN 23 (1992)

## **Gravel Hill Mine, Penhale, Cornwall 3rd May 1992**

Our venerable leader the Rock Sparrow assembled us on the cliffs above the mine and passed out copious field trip notes. The mineral names had a certain ring to them reminiscent of electrical goods - beraunite and strengite... bringing power to your kitchen. These caused some consternation and despondency to your correspondent who disparages obscure iron and manganese phosphate minerals especially when a number of them have recently been discovered by the leader. It was going to be one of those days spent peering at earthy stains - Oh! for crystals that can be recognised at 20 metres.

Descending to the beach the mood of gloom deepened as nothing came to the hammer, and then became manic as our man with the sledge hammer began to get in the groove with 1x1 inch spangles of beraunite.

A breakaway group of 4lb hammer artistes then got into a strunzite vein. Your correspondent was shocked to discover he was planning the perfect murder to get his hands on a particularly nice piece of beige strunzite with a scattering of beraunite florets and just a hint of ferro-beraunite. He then managed to do the equivalent of poking an ants nest by announcing he had found phosgenite on beraunite. This caused a minor uproar and the rock breaking rose to a new frenzy. The phosgenite was soon forgotten as orange micro's of whitmoreite cunningly disguised as cacoxinite were discovered. Eventually exhaustion set in and the party staggered up the 300ft cliff carrying 40lb of iron phosphate each. Some of us were still up at 2am peering at 10x sprays of green, khaki, straw, orange and playing one of the best games in the world... 'is it a bird?'... 'is it a plane'... 'or is it jarosite, phosphosiderite or rockbridgeite?'

p.s. it wasn't phosgenite... be warned, there is selenite on the loose.

David Roe

R.Soc.N. (1994) 25  
Gravel Hill Mine, Penhale, Perranporth,  
Cornwall - 24 April 1994

SWB, Leader: Colin Sparrow; Reporter:  
D A Evans

This was only my second field meeting and I was a little nervous about this trip until Colin, our leader for the day, showed us some specimens previously gathered from above and below ground. Whether they were intended to encourage or dishearten I cannot decide. Colin had managed to obtain the key to the gates of Penhale Camp and we arrived at our location on a bright dry day. Boulders on the beach were covered in

jetsam, but working on such material as was exposed, it was not long before the first specimens came to light. It is amazing how some people have the 'nose' to pick the right lump to attack!

After lunch we went underground in two parties and were reminded that the brecciated matrix is tougher than one imagines.

At 4.00pm Colin called a halt to the proceedings and we took stock of what we had found. Of the eleven who had attended, most had some strunzite,

siderite rhombs, beraunite and lepidocrocite, and some had akaganeite and diadochite as well. Whitmoreite proved too elusive for all.

It was a thoroughly enjoyable and rewarding day thanks to good leadership and cameraderie.

RSN (1996) 38  
Gravel Hill Mine, Perranporth Beach.

Only four of the five set off on the mile walk to the mine, walking across the dunes makes the walk shorter than along the beach but not necessarily easier as the sand on the hills is heavy on the legs especially on the return journey. What was at first thought to be a poor effort from this site later revealed some superb quality whitmorite, octahedral pyrite, beraunite, ferroberaunite and moderate strunzite. Although some good specimens were found, it was hard work obtaining them from what can best be described as a well-worked mine.

GRAVEL HILL M., Perranporth, Corn. (IV)

RSN(1998) 33, 12. galena, fluorite, siderite,  
beraunite etc

VRae (Priv → RSNB ~1990) Beraunite, strunzite,  
whitmoreite, gypsum, calcite, jarosite, corkite,  
rockbridge, lanark, CO<sub>3</sub>-fluorapat, goeth,  
akagane, lepidocroc, diadochite, pyromorph,  
phosgen, Fe-beraun, Fe-strunz.



MINERALS FROM GRAVEL HILLS MINE PENHALE

|               |                        |                  |
|---------------|------------------------|------------------|
| BERAUNITE     | LANARKITE              | FEROUS BERAUNITE |
| STRUNZITE     | CARBONATE-FLUORAPATITE | FEROUS STRUNZITE |
| WHITMORITE    | GOETHITE               |                  |
| GYP-SUM       | AKANGANITE             |                  |
| CALCITE       | LEPIDOCROCITE          |                  |
| JAROSITE      | DIADOCHITE             |                  |
| CORKITE       | PYROMORPHITE           |                  |
| ROCKBRIDGEITE | PHOSGENITE             |                  |
| FERR          |                        |                  |

1" 185

Sx 06 57(?)

GREASY QUARRY, Luxulian, Cornwall.

See also LUXULIAN etc.

WFPMcL MM 20, 140.

Spatite in pegmatite veins

NEW GT. CONSOLS MINE, Stoke Climsland, Cornwall.

See NEW CONSOLS MINE



1" 185  
GREAT ONSLOW CONSOLS, <sup>SX 09 77</sup> St. Breward Trigg E 8  
Cornwall

BM: Chalybite, brown prisms 

Collins (1871) p 62; (Cu, working). Chalcopyrite.

CMRM (1995) Pyrrhotite

1"190

SW 83

GREAT PENHAVER POINT, Roseland, Cornwall

N1 GAZZ; N1 1"OS;

CMRM(1995) Pumpellyite-(Mg)

GREAT WESTERN BEACH, Newquay, Cornw.

See NEWQUAY



1" 189 Conton SW 57° 29' (?) M 36  
565 293 Germoe ~~SPH~~

GREAT WESTERN MINES nr St. Hilary, Cornwall.

See also ST. AUBYN M. etc.

JC (1871), 49: (Sn, Cu, wkg.) Cassiterite [St Hilary]

DBB "W. Corn" (1963) 21-22 Between Godolphin Hill  
e the sea, around A 394 road a group of 7 or  
more Sn & Cu mines reworked from 1870 as  
GT. WESTERN MINES. Closed 1886, deepest 133 fm  
in St Aubyn & Grylls section. Map, p 19 pub  
the mines S of A394, ~~near~~ near 56° 29'  
Mines included include :- WH. GRYLLS; WH. FLORENCE;  
WH. GEORGIA; ST. AUBYN & GRYLLS.

"189

SW 33 (or 32?)

GREAT WORK (~~MINNETA~~), St. Just, Cornwall

CMRM (1995) Zinnwaldite (GREAT WORK, St. Just)

1" 189

Germoe SW 59 30  
Gt. WORK CONSOLS, ~~breage~~, Cornwall. M 56  
See also Gt. WORK MINE (M20), etc.

JC (1871) 55: (Sn, Cu, wkg.) blende; cassiterite;  
chlorite; chalcopysite; cuprite;  
fahlerz; linonite; melaconite;  
mica; pyrite; tourmaline



1" 189

2½" SW 53<sup>nr</sup> 596307

M 20

GREAT WORK MINE, Breage, Cornwall  
Germoez

See also: W. GT. WORK MINE (M 43); GT. WORK CONSOLS (M 56)

Dewey Cu (1923) 6. In Wh BREAGE lode, tin in granite but not slate. Contrast with nearby Wh. VOR. A little black copper ore (melacomite) ✓ in granite

AR MM 21 Tin mine. Apatite, ✓ tourmaline, ✓ greenish muscovite ✓

MM 14 xxvii AR exhibit. Large "babel-quartz" ✓

GC Goodridge, Geog Mag (1967) 686 ~~being re-examined~~  
Not as promising as Wh. Vor.

DBB "W. Corn" (1963) 21. Once import. Sn mine. Surface  
e shallow workings 18th Cent, deep 19th cent.  
Dewatered in mid-1930's but aband. < 1939.

CMRM (1995) "Babel" quartz.

1" 189

SW 59 32, 58 32

NORTH GT. WORK MINE, Godolphin Hill, Cornwall

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See W. GODOLPHIN MINE



1" 189

SW 57 31

WEST GREAT WORK MINE, Breage, Cornwall M43

See also GT. WORK MINE (M20) etc.

JC (1871), 54: (Sn, Cu, wkg.) Cassiterite; chlorite;  
dolomite.

R. Selley (2014) BMSN 91, 21-22. Sparable  
cassiterite xls  $\rightarrow$  5mm; siderite, galena

1" 189 } GREEB SW 53 29  
THE { GREBE, Perranuthnoe, Cornwall. M 38

JC(1871), 49. Actinolite. ✓ "The GREBE"

THE GREEB Os<sup>u</sup> 1" 5329

1" 187 SX 419 7185  
GREEN HILL ARSENIC WORKS,  
Gunnislake, Calstock, Cornw.

Brian Brett, Priv Comm. 5/76. Orpiment ✓  
with realgar ✓ in old dumps  
at 4190 7185 - imported e/or artefact?



WHEAL GRENVILLE, Camborne, Cornwall

C 15

 $\frac{1}{2}$ " RSWB 8K  
CLOWANCE, PENDARVES

See also E. GRENVILLE (C 28), Wh. BASSETT

Rutley, 15th Ed., p. 207, chalcopyrite.J.C. (1871), 51: (Cu, wkg.) Chalcopyrite.Dewey (1923) 27 <sup>Discussed</sup> ~~included~~ with BASSETT MINE [qv]  
On GE. FLAT LODEThe GRENVILLE UNITED M's raised some  
Cu. The COPPER LODE has chalcopyrite  
down to 70 fm level. Several other  
lodes, with Sn ore only.Cu ores produced by Wh. GRENVILLE: 1860-1905

SC Goodridge, Geol Mag (1967) 686. Being systematically  
explored by a Canadian Co. with Clowance  
mine & the Pendarves estate project

1" 185

Wh. GRENVILLE, St. Stephens SW 95 50  
~~Dennis~~, Cornwall. SA 46

JC (1871) 60: (Sn Xobg) Cassiterite.



1" 189

SW 66 38 C 28

EAST GRENVILLE MINE, Camborne, Cornwall.

See also Wh. GRENVILLE (C 15)

JC (1871), 51: (Cu, wkg.) Chalcopryte.

1" 189

SW 595 290

Wh. GREY, Germoe, Cornwall

DBB "W. Corn" (1963) 21. Small Sn mine, to ca 65 fm.  
on site of old china clay workings.

1" 186

Sx 359 802-5

GREYSTONE LEAD MINE, Lezant, Cornwall

See also GREYSTONE  $\Phi_y$ ; GREYSTONE WOOD  
Mn MINE; Wh. SOPHIA.

RS10B, BVC 16/4/78. Old dumps & chimney N  
of road. Dumps in fields S of road  
recently partly bulldozed. Grey  
shale matrix; vein quartz. Galena,  
pyrite, chalcopyrite, quartz, sphalerite  
as clear v. pale greenish weathered xls.,  
cerussite; small sharp anglesite xls.,  
leadhillite, v pale greenish hexag., traces



linarite & greenish Cu minerals.

AKHJ XV (1969) 52, 55. Eng. Ho & Stack visible on N side of road. Burrows of 2 other sh's to S of road. Started 1831. Lead ore - also a copper lode 3 fm N of the Pb lode. Re-started 1836 as "NORTH TAMAR", stated by De La Beche (Rept. on Geol of Corn, Dev, & W. Som (1839) p616) to have some of the purest sphalerite he had seen, with galena & "bisulphuret of copper". The sphal. yellowish & abundant closed 1839. Worked again ~ 1854-61. Finally worked 1877 → ? as "GREYSTONE & EAST LONGSTONE Mines".

1" 186

SX 359 804

GREYSTONE<sup>Pb</sup> MINE, Lezant, Cornwall (II)

Dines (1956) 715. ENGINE Sh 700 yd S by W  
of Hexworthy, e 50 yd N of road, e another sh.  
200 yd to SE. Dumps of shales e  
grits impreg w. pyrite e some pyrolusite.  
Keinstone of white comby quartz, in  
large xls, seems barren.  
A little lead ore raised 1878-80

1" 186

SX 365 805

GREYSTONE QUARRY, Lezant, Cornwall (I)  
See also GREYSTONE Pb M., GREYSTONE WOOD Mn Mine.

B. Cooper, Priv. Comm, 4/78. Working quarry,  
in which cerussite found recently.

Visited, 4/78. Quartz, galena, cerussite.  
Working roadstone quarry, mostly  
barren. May approach GREYSTONE  
LEAD MINE — lode(s) of which are  
probable source of the Pb minerals  
(or Wh. SOPHIA lode(s)?)



BV Cooper. Specs → RSWB 10/79 Galena w.  
cerussite, vg anglesite [like Dene & Derbs]  
xls in cavs.

J Fisk et al "Trevinnick M, Corn" Min Realm (1982) 1 [5]  
p22: Dundasite.

D. Lloyd & R W Barstow, J. Russell Soc (1983) 1 (2)  
23-24 "Blue" annickite ass. w. chess  
microxls & botry masses hemimorphite  
in a quartz vein cutting dolomite in  
greystone Q'y. Other mins recorded include  
anglesite, dundasite, cerussite, galena &  
pyromorphite

## GREYSTONE Pl'y, Lezant, Cornwall (II)

V. Rae, spec's → Rsub (9/89). In granular somewhat iron-stained quartz matrix with v. long prismatic qtz xls → ~ 5 mm in vugs. Chalcopyrite w alteration rims of "pitchy Cu ore", galena, sphalerite all in groundmass. In vugs on quartz, "limonite" (goethite); malachite, small needles; pearly aurichalcite; good hemimorphite xls. Green spherules (radiating) are malachite (KIR) (Zircon somewhat-chem) not rocasite.

N. Carruth (?) Riv Comm (4/90) to RSWB.      Crocoite  
micro-xls.

V. Rae Riv Comm 9/12/90      Big lead vein recently  
exposed; obtained pyromorphite (small),  
amichalcite, malachite, one good, rich,  
but micro- crocoite.

Russ Soc News 21 (1971)      David Lloyd has coll  
several spec's of dundasite from near of  
the quarry, nr the crocoite loc, from  
where overburden recently been stripped.  
[Confirmed SEM, O.U. Mus]



# GREYSTONE QUARRY, Lezant, Cornwall (III)

Russ. Soc. Newsletter 20 (1990)

5th August 1989 Greystones Quarry, near Launceston, Cornwall. Some 17 members fought their way through the horrendous summer traffic on another blisteringly hot day to make this field meeting. Thanks are due to the manager, Mr. D. Payne, for permitting access to a larger than normal party. The geology is structurally dominated by 5 principal thrusts. The highest, the Greystone Thrust, marks the base of the Petherwin Nappe, and has transported green Upper Devonian slates over Lower Carboniferous black siltstones and slates interbedded with mudstones (locally altered to chert). Dolerite sills up to 40m in thickness were intruded during the Visean. Fracture infills consist of dolerite, quartz and amphiboles. The mineralisation may be related to the hypogene style mineralisation of the nearby Greystone Mine. Miner-

als recorded consist of aragonite, anglesite, arsenopyrite, aurichalcite, bindheimite, bourmonite, calcite, caledonite, chalcopyrite, cerussite, dolomite, dundasite, feldspar, galena, hemimorphite, leadhillite, linarite, malachite, millerite, native silver, pyromorphite, pyrite, quartz and sphalerite. Awaiting confirmation are cyanotrichite, mimetite and wulfenite. \*

Our members found the lead vein covered by overburden though a small exposure provided some hemimorphite and nearby boulders yielded some aurichalcite. Better collecting was obtained from a sizeable quartz vug in the sump. Excellent specimens of well crystallized milky quartz with brilliant chalcopyrite crystals (up to 18mm) were collected, together with unusually modified, euhedral calcite crystals.

\*The "wulfenite" = crocoite. Rothwell & Mason  
UK J.M. Mins (1992) !! 30 → 40

# Russ Soc Newsl. (1991) 21

## Field Meeting to Greystones Quarry, Lezant. 17th June 1990

Fifteen members under the leadership of Maurice Grigg and Edgar Sutton, plus two guests, assembled in the quarry car park at 10am. The party dispersed to several locations within the quarry and remained until 3.30pm

Those working on the quarry floor were rewarded with some reasonable specimens of chalcopyrite and pyrite crystals on quartz and dolomite, and some quartz crystal groups. From the upper bench on the eastern side of the quarry, aurichalcite was collected but rather poor by previous standards, along with some acicular

malachite. David Lloyd, by dint of some hours of hard labour, found a few specimens of millerite on thin dolomite veins (also in the eastern upper benches). These specimens were less impressive than those previously found by him at this location.

The lead vein in the western upper section yielded some cerussite, pyromorphite, and anglesite, all in small crystals. Unfortunately the quarry appears to be working only the lower benches, so there was little new material on the mineralogically more productive higher levels.

Spec's from V. Rae, 1991. Dundasite; ? crocoite;  
also material with cerussite & leadhillite  
looking like linarite or cyanotrichite but  
"said to be schmiederite" - microchem tested RSWB

# GREYSTONE QUARRY, Lezant, Cornwall (IV)

2 found to contain Pb (HCl) &  $\text{SeO}_x$ !!  
(warmed w. hydroxylamine hydrochloride +  
HCl  $\rightarrow$  red ppt  $\text{Se}^{II}$ ), so probably is  
schmiederite! [A sample of  $\text{CuSeO}_3$  gave same  
result;  $\text{CuSO}_4$  did not].

M. Merry, specs  $\rightarrow$  RSWB, 7/92. Brownish-black  
film of a manganese oxide mineral  
(IR:  $519 \sim 486 \text{ cm}^{-1}$ ) [92-104]

Small blue xls posnjakite (FTIR) [92-105].

V. Rae, spec's  $\rightarrow$  RSWB 8/92. [92-106, -113] Pale  
near-malachite (FTIR) on quartz xls. Dundasite  
+ transp. c'less globules looking like allophane  
(But FTIR = ?)



V. Rae, spec's to RSWB, 7/93.

Aragonite, white. 1 cm needles; linarite; red jasper w.  
pyrite, chalcopyrite spots; anglesite w. galena;

→ ~~siderite~~ colorless nearly clear, good rhombohedra  
~1 cm with <sup>earlier</sup> elongated quartz xls; calcite  
stacked low rhombohedra ~1 1/2 cm across



(= Ankerite, FTIR 7/93)

Maurice Jigg, Pers. Comm. 10/93  
(massive, not xls.)

Rhodonite,

The British Museum has also just returned an identification of schmeiderite, on a mineral found at Greystones Quarry by David Lloyd back in 1987. The schmeiderite occurs as blue flexible hairs and is a probable first occurrence for the South West.

CMRM(95) Acanthite  
cacoxenite, caledonite

# GREYSTONE QUARRY, Lezant, Cornwall (V)

RSN (1992) 23

## **Greystone Quarry, Launceston, Cornwall 27th July 1991**

The party assembled in the quarry car park and were greeted by Mr. Symonds, the manager, who gave a brief talk about the hazards of a working quarry. As the quarry was in production, the party headed first of all to the top level in the south east corner. Some movement in the area of the lead/copper vein was attacked revealing some nice specimens of schneiderite, and minor aurichalcite and malachite. However, no trace of millerrite could be found.

Work ceased in the quarry around 12.30 pm, and the party moved down a bench to look over a recent blast pile. Traces of massive sulphides led to some good finds of crystallised sphalerite and chalcopyrite. Some well formed and reasonably large (to 1 cm) tetrahedrite crystals were also found (a new mineral for this location).

Several members moved on to the lead vein, exposed on the second bench down in the south west corner of the quarry. This was less prolific than on the last visit, but still produced some nice cerussite crystals (butterfly twins) and a couple of pieces well covered with good anglesite crystals (which to the naked eye looked remarkably like pyromorphite). Malachite and odd pieces of dundasite were also collected.

David Lloyd

## **Cornwall Weekend: Greystones Quarry and Gunheath China Clay Pit June 1992**

On this gloriously hot Saturday six log-distance travellers from the N.W. Branch assembled in the car park at Greystones Quarry, Launceston, in time to enter the quarry at 1.00pm. We were met by Maurice Grigg who was to be our leader for the weekend, and two other members of the S.W. Branch. At 1.00pm precisely we went into the quarry. It was like a furnace. However this was



soon forgotten in the quest for minerals. Some time spent on the top bench produced hemimorphite, malachite, pyromorphite/mimetite and aurichalcite, and on moving down the quarry, some very good quartz was found. Near the back of the quarry in the lead vein, cerussite and anglesite crystals were found in good numbers together with a little chalcopyrite and some dundasite, although very little of it showed good crystal form. By this time we were all getting very thirsty despite having brought some drink into the quarry, but we continued to the bottom bench where some very good aragonites were found together with pink dolomite, clear saddle-shaped dolomite and pyrite, many associated with quartz crystals. By this time exhaustion had set in and we made our weary way back to the cars for refreshment before setting off to our digs in Indian Queens.

After a shower, and a meal at the Blue Anchor Inn where we also restored some of our lost body fluids, we retired to Maurice's house to view his excellent collection of Cornish minerals. However at eleven o'clock, the day's exertions started to overcome us and one by one we departed to our beds.

Greystones Quarry, Launceston, Cornwall  
[Grid Ref: SX 365 805] - 3 April 1995

SWB, Leader: David Roe RSN(95)27

The quarry had much changed from the last visit in September 1993. It now only operates for 2 days a week and its future is uncertain. Once inside, the old landmarks are difficult to discern. Schmiederite alley is a forgotten dream and tetrahedrite cliff is long gone. On the west side of the quarry the change is dramatic - where is the cliff riven by galena heavily infested (invested? Ed.) with anglesite? Gone, gone to the crusher. And where are the boulders like Ford Transit vans encrusted with 1 inch crystals of aragonite? Gone the same way. (Mind you, detaching crystals of aragonite from a Transit van is quite challenging). Even the rather unspectacular pyromorphite and cerussite cliff face had gone and along with it, the top aurichalcite source.

Such is life - we must be grateful for what we have - which for most people in the first hour was lacerated fingers from the knife-sharp quartz. Enough of this was found to power several 'new age' homesteads and very pretty it was too. Eventually a few calcite crystals of interest were found but this was hardly the stuff of a classic Greystones trip. A few scattered crystals of yellow sphalerite, chalcopyrite and tetrahedrite also came out of hiding. → (VI) ← (?)



# GREYSTONE QUARRY, Lezant, Cornwall (VII)

CMRM (1995) Birnessite ("near birnessite or  
manjiroite")(?); descloizite; hydrozincite(?)  
(visual & uv evidence); rutile; siderite;  
smithsonite; pyrolusite.

RGN (195) 21

Greystones Quarry, near Launceston [Grid  
Ref: SX 365 807] - 2 June 1995.

Twelve members, from Southern, South-East, Wales & West and Central Branches met at the quarry offices at 1pm and were greeted by the Manager, Mr. John Symons, who took us into the second level to begin our visit.

Much has happened at Greystones since the glory days, and the lead vein seems to have been worked out. That section of the quarry has reached its limit and we will probably not see such interesting mineralisation again. There is a new bottom level, and sulphides seem to be the major mineral to be collected at the first and second levels. The find of the day was a museum

## From (I) (back of)

The highlight for the writer was when Kelvin Phillips broke into a beautiful vugh of dolomite crystals and it did the fabled 'Greystones dolomite fade'. If I hadn't watched it I would not have believed it. The mouth-watering pink dolomite (approximating to a Queen Elizabeth rose) changed to an unexciting flesh pink within 30 seconds of exposure to light. And then we went home.

specimen, mainly of pyrite crystals, which Dave Ferris extracted from a large boulder by sheer hard work and dedication. Some fine quartz crystals were found on a pink mineral, possibly dolomite or rhodochrosite, by Steve Plant.

Most of our members collected samples of quartz, galena, and pyrite cubes. Some clear yellow-green sphalerite was found, similar to some found on a earlier visit.

Some members, including the author, visited the quarry dumps on the top level, which showed potential, although time was by then running short.

Some malachite was found, but not of the previous quality from this area. The author found some interesting pieces containing aurichalcite, hemimorphite and smithsonite? crystals of a long pointed appearance. For those interested in sulphides the quarry still has potential. For those interested in the lead-zinc-copper secondaries, and other rarer minerals, the outlook is gloomy, unless fresh quarrying uncovers new veins. It may be that the best days are past.

UKJMM (1993) 12  
Recently: wulfenite  
with pyromorphite and  
dundasite.

J Bellerton et al UKJMM (1996)  
16 13-15 wulfenite

MM spec → RSWB for ID (97-29)  
(7/97) Orange hex. [to ~  
1 mm] Vanadinite (FTIR, 8/97  
a little P. Calcian? [cf Wanlockhead  
material])

# GREYSTONE QUARRY, Lezant, Cornwall (VII)

## Greystones Quarry, Lawhitton, Cornwall

by Nick Elton

RSN(1996) 28, 21-2

Greystones Quarry, operated by CAMAS Ltd., is situated about 3 miles south-east of Launceston on the A384 road to Tavistock. NGR SX 365 807.

### Introduction

The following notes are taken from the South-West branch field notes originally compiled by David Lloyd and substantially extended and updated by Jeremy Hooper and Nick Elton.

Greystones Quarry formerly had a considerable reputation as a location for interesting, rare and good quality mineral specimens. These were chiefly copper and lead supergene species, but excellent sulphides and quartzes have also been found. Sadly, Greystones is presently a poor shadow of its former self. During construction of the Launceston and Okehampton bypasses in 1991-1993 a tremendous quantity of rock was removed. The intensive working produced some excellent exposures, but these were short lived. At the end

of this period, most formerly fruitful areas were very poorly exposed.

Recent visits to Greystones Quarry have not been especially productive, but, as with any working quarry, exposures come and go, and the collecting potential can vary by the week. Anyone contemplating visiting the quarry must make certain that they obtain proper permission in advance from the manager. Failure to do so may jeopardise future Society visits.

### Geology

Recent research (Isaac, Turner and Stewart, 1982; and Turner, 1982) has shown the geology of Greystones Quarry to be extremely complex and the original survey (Reid *et al.*, 1911) inaccurate. Within the quarry area, five principal thrust planes have been recognised. The highest (T), the Greystone Thrust, marks the base of the Petherwin Nappe (Isaac *et al.*, 1982). This thrust has



## References

1. Lloyd, D. and Barstow, R.W., 1983 A new occurrence of aurichalcite and hemimorphite from Cornwall. *J. Russell Soc.*, 1, 23-24.
2. Reid, C., Barrow, G., Sherlock, R.L., Dewey, H. and MacAlister, D.A., 1911 *The geology of the country around Tavistock and Launceston (Sheet 337)*. Mem. Geol. Surv. England and Wales, 144p + 3 plates.
3. Turner, P.J., 1982 The anatomy of a thrust: a study of the Greystone thrust complex, East Cornwall. *Proc. Ussher Soc*, 5, 270-278.

### Unpublished identifications:

4. Tetrahedrite. N.J. Elton specimen and identification by energy dispersive X-ray (EDX) analysis. Collected on South-West Branch field trip 1991.
5. A copper silicate, possibly chrysocolla. N.J. Elton specimen and identification by EDX analysis. Collected on South-West Branch field trip 1991.
6. Smithsonite. J.J. Hooper specimen and identification by EDX analysis. Collected November 1992.

7. Rutile. M. Grigg specimen, J.J. Hooper identification by EDX analysis. Collected April 1993.
8. Identifications by EDX analysis supplemented by visual examination. N.J. Elton.
9. M. Grigg specimen, J.J. Hooper analysis by Fourier transform infra red spectroscopy (FTIR), also M.T. Price (Oxford University Museum) analysis by X-ray diffraction.
10. Identifications by X-ray diffraction at the Natural History Museum, specimens from D. Lloyd, D.C.N. Smith, N. Carruth.
11. M. Grigg specimen, N.J. Elton identification by EDX analysis.
12. Identification by X-ray diffraction, N.J. Elton.
13. J.J. Hooper specimen and identification by FTIR.

GREYSTONE QUARRY, Lezant, Cornw. ~~XXXXXX~~  
(IX)

RSN(1998) 33, 9 Field trip. galena, cerussite,  
? dundasite; anglesite, ? linarite; vanadinite,  
small but distinct ds; mal; aurichalcite.

BMS Newsl. (1999) ~~44~~ 52 [Feb], 5, 6. "Vauquelinite"  
ex "greystones Q" pres to BMS coll. - C. Jewson.  
"tiny brown pustules".

RSN(2000) 36, 22 Visit. gal, angles, mass. greenish  
sphal., cupy, aurich etc, ? dundasite. Mostly  
from loose boulders.

R. de Nul (2005) UKJMM 25, 35-36 Elyite

rad. on ox. galena-chalcopy w cerussite.  
Xls to 0.2 mm long.

S. Harper (2016) BMSN, 97, 39-40. Millerite,  
veauquelinite, crocoite, rhodonite, bustamite.



1" 186 SX 362 794 6" 23NW (1907)  
GREYSTONE WOOD MINE, Lezant, Cornwall K 54  
~~See also GREYSTONE LEAD MINE; GREYSTONE Q'y.~~  
AR, MM (1946) Mn mine.

B. Coopers & A. Wright, gift to RSWB 10/70 Black  
Mn ore with tiny brilliant xls? manganite

Dines (1956) 715 3 sh's ~ 50 yd apart ~ 800 yd  
N by E of Lowley Bridge; the most S was  
open in 1942. Mn ore in chert as  
irreg orebodies 4-6 ft x up to 100 ft long  
Dumps small, overgrown, of rock stained  
w. black Mn oxide, & quartz veins.  
Rhodonite. Outputs 1878-80. Tried ~ 1910

GS manuscript 6" map (1908): "Greystone Mn mine,"

"Mine material is hand picked & sized on grizzly & sieves. Silicate of manganese and the peroxide quartz veins, iron stain. Now closed one year."

AKHJ (1969) XV, 52. Mn [ore] in detached irreg. pockets worked by shafts, 1877-80, early 20th Cent. The GS Mem. "Tavistock & Launceston" quotes "galena from" "Greystone Wood M." - confusion with GREYSTONE SILVER-LEAD MINE, 1000 yds to N.

Wh grouse, Morvah, Corn

See Morvah Hill M



1"189 SW 36 33  
Wh. GROUSE, St. Just, Cornwall.

See <sup>also</sup> 1 Wh. OWLES

cf Wh GROUS, Zennor 41 35

727 507

Wh Goose

St Agnes

Corn

See Wh Kitty

Gweal Paull, Redruth, Cornw.

See Wh. Captain



Wh. Gylls, Germoe, Corn

See Gr Western M's.

Grylls M., Wendron, Corn.

See Basset & Grylls.

GRILLS BUNNY, St. Just, Cornwall

See BOTALLACK CLIFFS



1" 189 SW 4 3 or 4 4

Wh. NORTH GRILLS, Zennor, Cornwall

AKHJ (1961) 1, 13 Lodes on coast, tried by adits  
in 1865. Possibly part of Treveal → Zennor  
Lodes - see Wh. CLEVELAND; & WICKA M

GUDDRABRIDGE M., Padstow, Corn.

See PADSTOW CONSOLS M.

1" 190

SW 7325 5270

GUMPUS MINE, St. Agnes, Cornwall

AKHJ (1962) 2 32 Served by adit from cliff  
a little S of Pen a Gader. Almost  
certainly = the "old shaft" on OS 6" 47 SE  
nr Wh. Prudence farm.



1" 185

SX 00 56 (I)

GUNHEATH PIT, St. Austell, Cornwall  
See also HENSBARROW PIT (joined up)

C. Rogers (1968): Turquoise

B. Cooper, letter 12/76. I. Hodgkinson has found  
columbite in Gunheath Pit. (P.T.O.)

B. Cooper, Spec → RSWB 1/77 ref letter of 18/12/76.  
Turquoise (greenish) <sup>crashlight</sup> in whitish matrix  
containing micro xls of wavellite <sup>(clon)</sup> around  
the turquoise

~~MM~~  
Hodkinson, I.P., & Clark, A.M. MM (1977) 41 131-132.

"Columbite from St. Austell" Columbite → 2 cm

154. Subhedral platy xls. → 5 mm across, singly or  
rad. aggs. w. microcline, quartz, zinnwaldite;  
also apatite, torbernite, tourmaline, topaz,  
opal, arsenopyrite, turgovite. In peg  
veins in kaolinised granite at  
Gunheath Pit [36 Robartes Rd, St Denis]

R Turner (1979) D. Crebor (Chem. @ ECC) says  
ajointe in the turgovite. "Achroite", apatite,  
topaz, columbite, tourmaline pseudo after feldspar  
BVC 4/79 Apatite. Chalcocite → brochantite



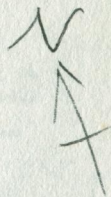
(5A)

GUNHEATH PIT

Monitor

Monitor

The Turq. vein



View Point  
V.P.

9/11/86

Gunheath  
Pit

8/86

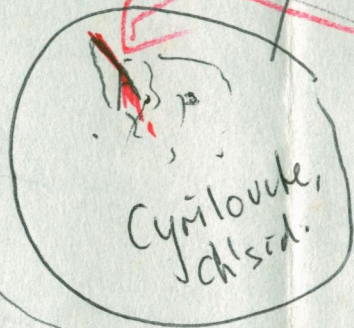
(Ike Wilson



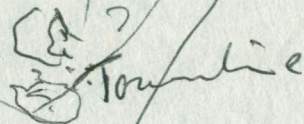
Pipe.



Vign  
point  
Vign



Cyrlouke,  
Sch'sed.



Toufline

kein  
width



Lamp

GUNHEATH PIT, St. Austell, Cornwall (II)

R. Turner 6/80 ~~Is breaking into~~ BUNNY  
MINE [q.v.] workings.

Ajoite has been found, with  
turquoise & hairy tourmaline  
nearly colourless - "achroite".

greenish black tourmaline pseudom.  
after feldspar crystals - about size  
of cigarette packet (RWB has one)



BV Cooper 10/79; 8/80 Spec's <sup>for ident.</sup> → RSWB 79-187, 80-155, 80-156.  
Chalcosiderite small apple green crystals  
often rounded to blocks, on quartz  
& schorlite - ident by IR, 8/80.

BVC 26/4/79. Turquoise, "sometimes in xls"  
<sub>in</sub>

RW Barstow, MM (1982) 512. The variscite  
found <sup>on a boulder</sup> ~~in~~ in Hensbarrow pit [q.v.]  
may have come from neighbouring  
Gunheath pit from which much  
overburden has been bulldozed into  
Hensbarrow Pit.



GUNHEATH PIT, St. Austell, Cornwall (III)  
F. Ince coll 1955, → BM(NH). Cynilovite (XRD) st 998 569.

N. Hoppe, spec's → RSWB 4/85  
85-72 Libethenite, small green xls on kaol'd-gran.  
85-71 Wavellite, good, on microcline turquoise  
on kaol'd-granite

BV Cooper Priv Comm (Tel.) 7/86. Cynilovite - M.J.E.  
Grigg who works in the pit has some,  
also superb turquoise. Roy Starkey  
told RSWB 11/85 of good cynilovite from  
"a clay pit, in Cornwall".

RSWB 8/86 visited. V. good turquoise vein

now finished but found a few  
small nice pieces. good colour  
microxline in cavities.  
Amethyst.

(Specs examined by RSWB)

Like Wilson Riv Comm 8/86. Found the cyrilovite includ.  
nice yellow bipyramids, with chalcosiderite  
One nice spec turquoise xls (at least as  
good as the Hensbarrow material) lining a  
~ 1" cavity. Some of the needly schoen is  
beautifully dichroic steel-blue to pinkish

Spec ex N. Carruth 8/87. Dufrenite, blackish-green  
rad. splenules on quartz, with chalcosiderite, cyrilovite.

# GUNHEATH PIT, St. Austell, Cornwall (IV)

V. Rae, spec's → RSWB (9/89). Cacoxenite, typical lustrous golden-brown radiating clusters → ~2 mm. Nice colourless wavellite, bunches of free-standing termin'd radiating xls in vugs. Cassiterite small brown xls; like thenite excellent little xls rich on granite.

R Taylors Cat 44 (1989) Leucophosphate

Russ Soc Newsl. (1991) 21. Cacoxenite from No. 1 bench, RH side, adjacent to Bunny M workings



# Russell Soc Newsletter 20 (1990)

**25th June 1989 Gunheath Pit, Stennalees.** Edgar Sutton again led this afternoon trip whose transport in the form of a black Land Rover was reminiscent of an oven in the roasting sunshine. With the pit shut down, it was possible to investigate quite widely with higher levels providing good specimens of wavellite with rashleighite and rare specimens of good quality cyrilovite and dufrenite lower down.

**21st May 1989 Gunheath China Clay Pit, Stennalees, Cornwall.** This afternoon trip, held in brilliant sunshine, comprised 12 members and was led by Edgar Sutton. Collecting was limited to representative specimens of chalcosiderite, dufrenite and wavellite, together with the customary libethenite, turquoise and varlamoffite.

## Russell Soc. AGM., 4/91

### GUNHEATH CHINA CLAY PIT

The pit exposes a major contact between a tourmaline/globular quartz granite and a topaz granite. The contact is kaolinized and marked by K-feldspar rich pegmatites.

Cont... (V)

# GUNHEATH PIT, St. Austell, Cornwall (V)

The pit was first called Vale Pleasant under the management of one Lias Martin, after this it was renamed to Higher Yonder Towan. After expansion the pit became known as Higher Gunheath and Lower Gunheath and eventually just Gunheath. Cost books exist back to 1828 when the pit was first called Gunheath. It must include the old Hensbarrow Pit and more recently an old level has been found that is almost certainly part of the Bunny Mine.

|                  |                    |
|------------------|--------------------|
| " ACHROITE ✓     | PHARMACOSIDERITE ✓ |
| APATITE          | PSEUDOMALACHITE ✓  |
| ARSENOPYRITE     | PYRITE             |
| AURICHALCITE ✓   | PYROMORPHITE       |
| BERYL ✓          | QUARTZ ✓           |
| BIOTITE ✓        | RASHLEIGHITE       |
| BISMUTH (NATIVE) | RUTILE             |
| BORNITE ✓        | SCHEELITE ✓        |
| BROCHANTITE      | SCORODITE ✓        |
| CACOXENITE       | STANNITE ✓         |
| CASSITERITE      | STANNOIDITE ✓      |
| CHALCEDONY ✓     | TORBERNITE ✓       |
| CHALCOCITE       | TOURMALINE ✓       |
| CHALCOPYRITE ✓   | TURQUOISE ✓        |
| CHALCOSIDERITE   |                    |

CHALCOTRICHITE  
CHRYSOCOLLA  
COLUMBITE  
COPPER (NATIVE)  
CUPRITE  
CUPROTUNGSTITE  
CYRILOVITE

DIGENITE  
DUFRENITE

FLUORITE

GILBERTITE

KAOLINITE

LEUCOPHOSPHITE  
LIBETHENITE  
LEPIDOLITE

MALACHITE  
MAWSONITE  
MUSCOVITE

OLIVENITE  
OPAL

VARISCITE  
VARLAMOFFITE

WAVELLITE  
WOLFRAMITE  
WURTZITE

ZINNWALDITE

REPORTED- TO BE CONFIRMED

CERULEITE  
CERUSSITE  
CREDNERITE  
COVELLITE

ROSASITE



# GUNHEATH PIT, St. Austell, Cornwall (VI)

Gunheath China Clay Pit, St. Austell,  
Cornwall 13th October 1991

This field trip attracted a good turn-out of members, and the weather was quite reasonable too. Once in the pit, the party was divided into two, one group being led by Edgar Sutton towards the western side of the pit in search of apatite, and the other, led by Joe Crowle, examined the area formerly noted for turquoise, cyrilovite, dufrenite etc. Both groups found a paucity of minerals. During the afternoon, members distributed themselves more widely through the pit.

Around the 'turquoise area' there was plenty of massive wolframite, along with varlamoffite and the usual clay pit minerals. Some small, but quite pleasing specimens of cyrilovite and micro-crystalline chalcociderite were found in boulders along with some very micro, opaque and corroded prisms of apatite; one or two members collected a little turquoise. Some better micro crystals of apatite were found towards the western side of the pit, and sporadically elsewhere. But the collecting was always hard work. The pit looks set to close down, at least for the coming year, so prospects for future collecting at this location do not look great.

Gunheath China Clay Pit, St. Austell,  
Cornwall 2nd August 1992

Nine members attended this field trip. Gunheath remains rather poor mineralogically and has not been worked significantly since our visit last year. Specimens of apatite, wolframite and turquoise were collected, but no specimens of any quality. Many members drifted away by lunchtime.

Joe Crowle

In the morning after a hearty breakfast Maurice led us to Gunheath Pit. This time we were all prepared for the heat with lots to drink. Thank goodness for plastic bottles - once the contents are drunk they collapse so that you can fill the space with minerals! We commenced operations on a recently discovered turquoise vein. There weren't any large pieces but plenty of cavities containing crystals associated with varlamoffite and wolframite. A further look around this area revealed cassiterite, schorl and stannoidite.

PTO

R. Soc News. 23 (1992)

Moving to a lower part of the quarry, cacoxenite - though not very good - was found together with some poor quality amethyst and eventually a small amount of chalcosiderite. Nothing remarkable for this quarry was found, and it was a shame to see it in its current state where clearly it has not been in use for some time. It is partly filled by debris from the break through into Hensbarrow and many of the best mineralised areas are now buried.

Finally we decided it was time to make the long journey back and departed, thanking Maurice for an excellent weekend in Cornwall.

H. Critchley

Gunheath & ~~Wheal Remfry~~ RSN  
Sunday 7th April (1991) 22

At 10 am on April 7th, twenty keen Society members met at Indian Queens to be split into two groups to go to Gunheath Pit or Melbur Quarry and Wheal Remfry. The weather was generally fair and an improvement on the previous day. After feverish ferreting I discov-

ered that the famous turquoise of Gunheath was in short supply. Some coatings and small pieces were found. However, the variety of minerals discovered more than compensated for this. The site yielded phosphates including variscite and rashleighite; cuprite was found within the granite together with fine dendrites of native copper; bornite was also located. At the lower level near the monitor, varlamoffite was found with cassiterite crystals. Others discovered fluorite and cacoxenite. In veins rising up from the pit floor, green wavellite was located. Climbing up the sides of the pit, I found massive gilbertite with stannite and some coatings of libethenite.

R. Soc. N. (1994) 25  
Gunheath China Clay Pit, Stennalees, Cornwall  
[Grid Ref: SX 999 565] - 30 July and 6 August  
1994

SWB, Leader: Jeremy Hooper;  
Reporter: Ruth Osborn

On Saturday 30 July the party gathered at the roadside car-park opposite the main entrance to Gunheath Pit, and on what must surely have been the hottest and most humid day of the summer so far, we were thankful to be able to park in shade.

Our leader gave us notes explaining that part of

(VII)  
→



# GUNHEATH PIT, St. Austell, Cornwall (VII)

the Gunheath workings now encompass the old Hensbarrow Pit and recently levels have been exposed which were probably part of the Bunny Mine. It was to be the old Hensbarrow Pit area that we would be concentrating on today.

The long list of minerals found here to date contains many rarities, some British 'firsts' and,

somewhat unusually, a discredited species, rashleighite (an intermediate between turquoise and chalcociderite). Just my luck - I found a nice piece of it, but what does one do with a discredited species?

To our great delight we were transported to the scene of action in a splendid white E.C.C. landrover (complete with flashing hazard beacons) a very welcome luxury. We were then given on the spot guidance on what to look for, and where (hopefully) to find it. Party members soon clambered up and around the walls of the pit and began to ply a variety of favourite tools in highly individual techniques. Specimens began to turn up quite quickly, further stimulating interest and enthusiasm despite the growing heat,

intensified by the highly reflective properties of white rock, and the focusing powers of the amphitheatre formation.

I personally was surprised and fascinated by the relative abundance of torbernite, a mineral I had previously thought of as rare and likely to be found only in small scattered specks. Here, having once got one's eye in, there seemed to be patches of it all around, including an area of several square inches (sorry,  $\text{cm}^2$ ) on the face of a large obdurate looking boulder, I managed to detach a few small but nicely covered flakes before feebly admitting defeat, but the honour of the ladies' team was dutifully upheld by Paddy Thorman who obtained a very presentable specimen by means of a skilled and vigorous onslaught with a heavy hammer and chisel.

Most people found reasonable pieces of torbernite, and other finds included chalcociderite, cassiterite, cacoxenite, cyrilovite, dufrenite, fluorite (dark blue, etched and highly modified cubes), gilbertite

→ P.T.O.



(a variety of muscovite common to the china clay district), langite, libethenite, schorl, turquoise (some crystals), variscite, wolframite, and possibly arthurite and topaz. Pete Seymour found a small cavity containing rather prismatic fluorapatite crystals. The prize specimen of the day however was undoubtedly a large cavity lined with pure white wavellite crystals revealed by the questing hammer of Chris Jewson.

When we were packing up to leave, hot and tired but happy, our leader enquired whether all of us had found, or been given, representative specimens of most minerals. On learning that I had no chalcosiderite or dufrenite he promptly went leaping up over the boulders again and soon returned with a chunk carrying both species, much to my delight.

On the second visit, 6 August, the same procedures were followed and most of the same minerals were found, thankfully in rather cooler, cloudier weather conditions. One specimen worth a mention was a nice pale blue gemmy fluorapatite crystal sitting on crystalline quartz, this was collected by Margaret Turner. As always, the helpfulness of the 'old hands' in directing ones attention to promising areas and

GUNHEATH PIT, St. Austell, Cornwall (VIII)

CMRM (1995): Azurite; ["Ajoite" NOT IN CMRM]; cassit.  
var. "wood tin"; connellite; corundum; cuprite  
var. "chalcotrichite"; dravite; ferberite;  
ferrocolumbite; florencite; goyazite - randallite  
intermediate; ilmenorutite; kramite;  
manganocolumbite; mitridatite; morinite;  
orthoclase; planchite [?]; ~~rockbridgeite~~ -  
fondelite intermediate; tantalite; "achroite";  
waylandite; unnamed Cu-analogue of  
campfieldite, Ag<sub>3</sub>SnS<sub>6</sub>;

Gunheath and North Goonbarrow China  
Clay Pits [Grid Ref: SX 999 565, 007 585]

- 15 April 1995 RSN (195) 27

SWB, Leader: Jeremy Hooper

The party of fourteen gathered just before midday on this fine Easter Saturday. After signing in at the pit office the party was split into two groups and 'shuttled' by Landrover to the Hensbarrow section of Gunheath Pit.

The older part of the true Gunheath Pit has not been worked for a few years now and will probably be partially back-filled in the near future. Around 1988, as the workings of Gunheath headed north-east, the old Hensbarrow Pit was broken into. It is in fact this area that has produced most of the collectable minerals in the last few years.

Initially the party showed interest in the area of lithium-mica topaz granite along the north-east stope of the pit. Pete Seymour and David Evans managed to secure some quite reasonable specimens of torbernite. The torbernite forms crusts of green plates up to 5mm along the joints in the granite. This area also produced some quite nice, small, but gemmy crystals of dark green libethenite which were quickly spotted by Ruth Osborn.

A little to the south of the main torbernite bearing granite the greisen veins carrying cassiterite, wolfram and topaz were worked to good effect. Some evidence of old men's workings, probably belonging to the Bunny Mine, are apparent in this area.

A few of the party then headed further up the stope to collect specimens of turquoise and wolframite whilst others combed the north face of the pit for phosphate minerals. A large number of thin veins and joints in the granite run in a N-S direction and quite often bear interesting minerals, mainly phosphates.

The phosphates seem to occur between the joints of the kaolinised granite. Areas heavily iron-stained seem to be the most promising, bearing chalcosiderite, dufrenite, cyrilovite, torbernite, wavellite, variscite and cacoxenite.

On this particular visit several reasonable specimens of chalcosiderite and dufrenite were collected by Chris Jewson, Kelvin Phillips and David Evans. A few specimens of variscite were also found and

Mike Merry managed to secure a nice specimen of granite pegmatite with small prismatic apatite crystals accompanied by snowy-white spherules of wavellite.



# GUNHEATH PIT, St. Austell, Cornwall (IX)

RSW (1955) 27

Good specimens of torbenite, libethenite, turquoise, varlamoffite, biotite, gilbertite, fluorite and tourmaline were all collected. The rare phosphates, dufrenite, cyrilovite and leucophosphite were also found, but the matrix on which these minerals formed was extremely fragile and keeping good specimens was difficult. Some of these samples also contained individual crystals of torbenite. Cassiterite was also probably found, but has yet to be confirmed.

One is greatly impressed by the potential of the Gunheath Pit; there is obvious signs of mineralisation everywhere, with rock faces having patchy coatings of turquoise, libethenite, and fluorite, with rarer patches of torbenite. Turquoise could be seen in its blue and green ('rashleighite' - a discredited species name) forms on various rocks.

→ 3/6/75

Our very rewarding visit was cut short by about two hours because of the onset of heavy rain, which made further collecting difficult and unpleasant.

Gunheath China Clay Pit, St Austell

[Grid Ref: SX 999 565]. RSN (1996) 28

Once again the ever present and helpful Jeremy Hooper was on hand to advise of recent finds and help identify the fine variety of minerals; dufrenite, leucophosphite, wavellite, cyrilovite, chalcosiderite, libethenite, torbernite (one particular good cabinet specimen), muscovite, micro-topaz (in abundance), some good 30-35mm quartz crystals, arthurite, variscite, stannite, turquoise, green and yellow cubes of pharmacosiderite, mixite as yellow/green fibrous crystals, and tourmaline. Ken Savage also found some unknown blue tabular crystals with a vitreous to adamantine lustre (any ideas?).

Gunheath and Goonbarrow clay pits.  
St. Austell, Cornwall [Grid Ref: SX 999  
565] - 29 July 1995 RSN (1996) 28

SWB, Leader: Jeremy Hooper,

Reporter: David Moulding

Nine hopefuls assembled on a hot sunny day in the car park opposite Gunheath Pit. The small party was able to squeeze into the ECC landrover and we were bounced about the deeply pitted track into the Hensbarrow section of the workings. This section of the pit occupies part of the sett of the old Bunny Mine (cassiterite, wolframite, and a little copper), so that ore minerals and copper secondaries can be found as well as the usual greisen suite. Copper and iron phosphates are notable here, the phosphate possibly being derived from the apatite in the granite. The party soon spread out, so that only the sight of the colourful hard hats showed their whereabouts. Vincent Holyer was cheerfully demonstrating his knack of finding good material - definitely someone to keep close to. Jeremy proved the ideal leader, scrambling about finding specimens and selflessly donating them to the less fortunate. By this means, and our own efforts we managed to find

wolframite, cassiterite, torbernite, turquoise, topaz, some rather pale amethyst, and not very good libethenite.

A visit to the upper level proved fruitful; Vincent broke open a large lump of rock that contained good crystals of chalcosiderite, and dufrenite, and

- 15 -

I think most people got some of both. I was pleased to find two apatite specimens, one in pale blue prisms, the other in creamy acicular crystals, both in greisen.

The party (now minus Vincent) was then transported by the scenic route through Stenalees

BMSN (2000) 57 8 "Unknown  
fibrous white mineral"

# GUNHEATH PIT, St. Austell, Cornwall (X)

Some Recent Finds at Gunheath China Clay Pit,  
RSN(1996) 29, 31 St Austell, Cornwall

Nick Elton

Although Gunheath China Clay Pit has only been worked sporadically over the last couple of years, it still manages to produce interesting specimens from time to time. During a visit in 1993, examination of a (then recent) blast pile in the Hensbarrow section of the pit revealed several specimens showing sheets of intergrown pale bluish-grey blocky-tabular crystals on drusy quartz. XRD and EDS analysis showed the mineral to be morinite,  $\text{NaCa}_2\text{Al}_2(\text{PO}_4)_2(\text{OH})\text{F}_4 \cdot 2\text{H}_2\text{O}$ ; the first reported British occurrence. Morinite is a low temperature hydrothermal phosphate found in granite and granite pegmatite environments and was first described by Lacroix in 1891 from Montebbras, France (see Palache *et al.*, 1951). In the literature, morinite is usually said to occur as rose coloured prismatic crystals, a description somewhat at odds with the Gunheath specimens.

The principal crystal habit of the Gunheath morinite is illustrated in Figure 1. The unusual bluish-grey colour seems to be derived from a thin layer of silvery copper sulphide (possibly chalcocite?) sandwiched between the crystals of morinite at the surface and further massive morinite below; fragments of pure morinite are colourless.

Tabular crystals of torbernite are scattered on the morinite and pale greenish powdery chalcosiderite-turquoise encrusts the edges of some sheets of morinite crystals, but there are no other closely associated minerals.

Rare dark green spheroidal dufrenite and pale brown sheaves of leucophosphite were found on other boulders in the immediate area, and crystals of libethenite occurred on drusy quartz exposed in fractured granite above the blast pile.



Chalcosiderite, wavellite, cacoxenite and cynilovite occur sporadically in iron-stained NE trending veinlets a few tens of metres east of the morinite location. Specimens of these phosphates continue to be found (with luck) on SW Branch field trips, but the area really needs a short period of regular working by ECC to expose fresh material.

Variscite,  $\text{AlPO}_4 \cdot 2\text{H}_2\text{O}$ , is well known at Gunheath Pit, and was first reported by Richard Barstow in the Hensbarrow china clay works in 1982 (then separated from the main Gunheath Pit). Usually variscite occurs as spherulitic aggregates of virtually colourless crystals.

On the South-West Branch field trip to Gunheath in 1994, unusual equant crystals of variscite were found in a quartz veinlet traversing a small granite boulder (found on the north face of the Hensbarrow section). The crystal habits are illustrated in figure 2. Generally the crystals are pale, dull green, translucent to opaque, and reach a maximum size of about 1 mm across. Broken crystals show distinct growth zoning. Many crystals are enclosed by partial or complete brown transparent vitreous crusts to 0.1 mm thick. XRD shows these crusts to be pure variscite, although the brown colour is rather unusual. Wavellite occurs on one specimen as sprays of acicular crystals to 3 mm intimate with,

and often penetrating the variscite crystals.

Last year, Maurice Grigg gave me a pretty specimen of spherulitic variscite which he had collected from Gunheath in 1984. The specimen is composed of intergrown variscite spherulites to 2 mm in diameter, many of which contain white powdery cores. XRD analysis showed the cores to be composed of a mixture of variscite and its monoclinic dimorph, metavariscite.

Maurice kindly allowed me to examine other variscite specimens in his Gunheath collection,

and metavariscite was confirmed on several of his specimens collected from Gunheath during 1984 and 1987. Most were similar in appearance to the first specimen. This appears to be the first reported occurrence of metavariscite in the British Isles. Unfortunately, the Gunheath metavariscite cannot be distinguished by eye from variscite, however, if you have spherulitic variscite with white powdery cores from Gunheath, there is a good chance that you have metavariscite as well.

## References

- Barstow, R.W. (1982) 'Variscite from Hensbarrow China Clay Works, St Austell, Cornwall.'  
*Mineral. Mag.* **46**, 512.

Cont. → (X1)

# GUNHEATH PIT, St. Austell, Cornwall (XI)

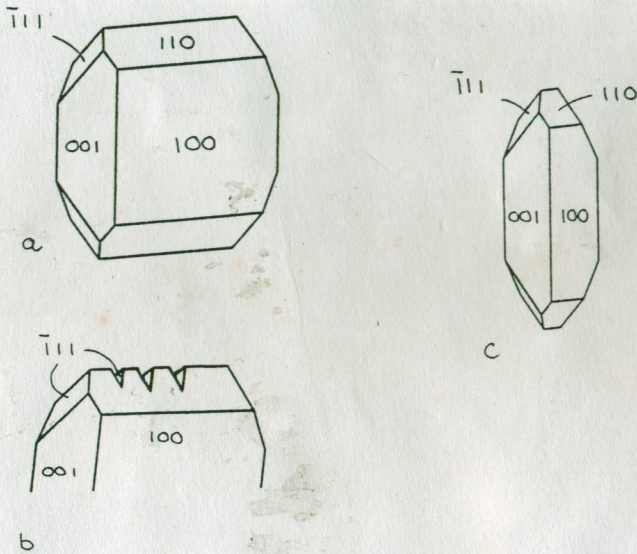


Fig 1. Crystal habits of morinite from Gunheath China Clay Pit. (a) Idealised crystal showing principal forms. Crystals are usually rough and show modifications as shown in (b). A few prismatic crystals were noted, like (c).

Elton, N.J. (1996) 'Variscite and metavarscite from Gunheath China Clay Pit, St Austell, Cornwall'. *Mineral. Mag.* **60**, 671 - 672.

Elton, N.J., Hooper, J.J. & Coggon, L. (1996) 'Morinite from Gunheath China Clay Pit, St Austell, Cornwall'. *Mineral. Mag.* **60**, 517-518.

Palache, C., Berman, H. & Frondel, C. (1951) *Dana's System of Mineralogy*, 7th edn, Vol II. Wiley, New York.

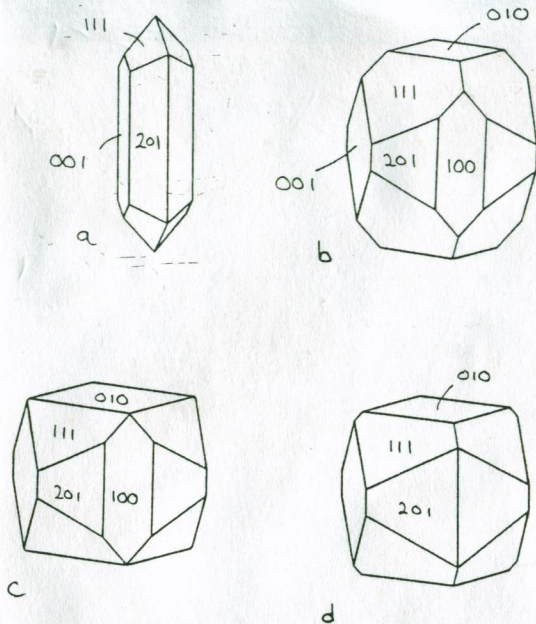


Fig 2. Crystal habits of variscite from Gunheath China Clay Pit. (a) Habit of variscite typically found as spherulitic aggregates. (b) - (d) illustrate blocky habits observed recently. (c) and (d) are variations on (b).



## GUNHEATH PIT, St. Austell, Cornwall (XII)

Elton NJ et al. (1996) Min. Mag. 60, 517-518. (96M/3817)  
"Morinite from G. Ch. clay Pit, St. A., Cornw."  
with quartz.

RSN (1997) 30. Quartz, pyrite, chalcocite, apat., diagen., fluor.,  
turq., cuprite; ? stannoidite (see UK JMM 14, 29)

Elton, NJ. (1997) Min Mag. 61, 719-720  
"Hydroxyl-chlorapatite from the St. Austell  
granite, Cornwall, England". Ident. on  
2 spec's ex Gunheath Pit. Analysed  
→ ~ 1/2 way between Cl- & OH- apatite. No F  
A little Mn & a trace Fe.

Form: pale brown-cream horn-like crust to ~1 cm thick on a complex matrix of mixed phosphates incl. black barboselite, intermediate frondelite-rockbridgeite and chalcocid-fergusonite & minor leucophosphite. Matrix has chalcocite, quartz, fluorapatite, carxite.

NJ Elton & M. Grigg (1996) J. Russ. Soc. 6, 81-83. "Calcian goyazite and florencite-(Ce) from Gunheath China clay Pit, St. Austell, Cornwall."

Goyaz. - pale green  $\rightarrow$  c'less  $\psi$ -cubic xls  $\rightarrow$  0.2 mm in qtz w. tourmaline, wolfram, ch'siderite, ls Calcian. [anal]. Florencite-(Ce) [anal] rhombohed, pale brown to black < 3 mm on e in F-apat (blue) xls w. fluorite, qtz, felsp. torbern.

GUNHEATH PIT, St. Austell, Cornw. (XIII)

RSN (1997) 31, 13-14. Leucophos e cyril etc.  
high on working face. Tuog nōds in  
stream beds.

RSN (1998) 33 14. Waylandite coll

N. Elton, (1998). J. Russ. S., 7, 15-18. Types "A" e "B" spec's  
intim mixt's of  $PO_4$ 's e sulphides, from a rib separating  
GUNH e HENSBARROW PITS just before they merged ~ 1988  
(HENS is now N extens. of GUN).

Type A. Barboselite, dull black, w. inclusions e veinlets  
of silvery chalcocite, w. grains qtz e fluorapatite.



patches of cream-brown horn-like hydroxyl-chlorapat on outside. In some XRD's lines due to intim admixed chalcosiderite & frondelite (frond-roikbridgite, nearer frond). Traces cassiterite, leucophosphite.

Type B: Solid intergr mass but some vesicles w. xls. Again mostly black barboselite, but with grains chalcosid-furgu intermediates; spher. masses dull green fibr. dufrenite, XRD  $\rightarrow$  hettschelite; irreg grains stannoidite (brassy-brown) w outer zone varlamoffite; XRD also near stannite. F-apat, qtz, rarely leucophosphite. In cavs xls of dufren, leucoph, ch'sid, torbernite, libethenite, brochantite.

# GUNHEATH PIT, St. Austell, Cornw (XIV)

GR, BMS Newsl (1999) 52, 14-15; see  
GR, AM Clark & CJ Stanley, geol curator  
(1998) 6 317-322. The plancheite  
"from Gunheath Pit" pres SBM by AWGK  
= material from Shaba (Katanga), Zaïre.

RSN (1999) 35, 14. Visit, not worked now for  
some time. Dufrenoyite, wavellite, fluorite,  
chalcociderite, ? cacoxenite found.

RSN (2000) 36 23. [SW 999 565]. Visit. Torbern on qtz  
assoc w. pump fluor strings. Varisc, wavell, dufren,  
ch'siderite. No cyrilov.

RSN('02) 40, 30. Visit, 9/01. Dufrenite,  
chalcosiderite, some w. cyrtovite xls, torbern,  
dark purple fluor., like thenite, wavellite,  
turquoise.

RSN('03) 42, 31 Visit, 9/02.

RSN('04) 45 48 Visit 6/04.



MINERALS COLLECTED FROM GUNHEATH PIT TO 30 9 89

CYRILLOVITE  
CHALCOSIDERITE  
DUFRENITE  
LEUCOPHOSITE  
TURQUOISE MASSIVE  
TURQUOISE X's  
TORBERNITE  
STANNITE  
STANNOIDITE  
CUPRITE MASSIVE  
CHALCOTRICHITE  
OPAL  
DIGENITE  
TOURMALINE  
RASHLEIGHITE  
VARISCITE  
ARSENOPYRITE X's  
APATITE  
NATIVE BISMUTH  
PYROMORPHITE  
CHRYSOCOLLA  
KAOLINITE  
QUARTZ  
COLUMBITE by P.HODGINSON.1977  
MAUSONITE by D.A.C.MANNING  
RUTILE by E.J.P.SUTTON  
WOLFRAMITE  
CASSITERITE

CACOXENITE  
VARLAMOFFITE  
MALACHITE (PSEUDO & FEATH  
CUPROTUNGSTITE  
BORNITE  
BERYL  
GOETHITE  
DRAVITE  
CHALCOPYRITE  
NATIVE COPPER in QUARTZ  
PHARMOCOSIDERITE  
LIBETHENITE  
OLIVENITE  
SCHEELITE altered to  
TURQUOISE  
CUPRITE X's  
GILBERTITE  
MUSCOVITE  
BIOTITE  
LITHIUM  
CONNELLITE  
BROCHENTITE  
WURTZITE  
AURICHALCITE  
NATIVE COPPER  
WOODTIN  
SPARRABLE TIN  
ACHROITE

AWAITING CONFIRMATION-  
covellite  
ceruleite  
rosasite  
crednerite

1" 187

Sx 4 7

GUNNISLAKE, Calstock, Cornwall,

Brian Brett Priv Comm 5/76 Fine xls  
like themite rich on matrix  
from "a dump near Gunnislake"  
[? Hatch's green area?] Loc to be  
revealed later! — E Gunnislake M1  
— EAST GUNNISLAKE MINE [94]



1" 175, 187

SX 433 717-8?

EAST GUNNISLAKE MINE, Calstock, Cornwall

See also E. GUNNISLAKE & S. BEDFORD MINE (DEVON).

B.V. Cooper, spec's → RSWB 10/79. Libethenite  
fine xls, some with creamy  
francolite xls; a little pseudomalachite  
E. gunnislake mine, Cornwall; on  
dumps. of COWARD'S SHAFT.  
Brian Bretts 5/76 "gunnislake" loc. [q.v.]

RSWB 8/57. IR of green coating under  
libethenite (87-119, pres S. Weller) =  $\alpha$ -pseudomal.



R Tayler's cat. 44 (1989) Arsenation.

libethenite

CMRM (1995) Cornubite; cornwallite;  
wroewolfeite;

1" 187 SX 4271 4337 719?  
OLD GUNNISLAKE MINE, Calstock, Cornwall (I) K1  
Small dump in Gunnislake village See also: PTO

AW&K Trans. Roy. Geol. Soc. Corn. 18[4]<sup>386</sup> (1952). Antlerite  $\text{Cu}_3(\text{SO}_4)(\text{OH})_4$   
light green small powdery aggregates, or dark emerald  
green xline. Pseudomalachite; cornwallite; olivenite.

GR (1955) A few v. small specs. torbernite. Massive pseudomalachite  
and chrysocolla

Min Mag 19, 43 Metatorbernite from Gunnislake.

Rutley, 15th Ed., p. 159, torbernite from Gunnislake (Classic loc)

BM: Metatorbernite from Old Gunnislake Mine

Henwood: Cu carbonates; malachite.

PTO

See also: GUNNISLAKE CLITTERS (K 35); E. GUNNISLAKE & S. BEDFORD  
(S 69)

"GUNNISLAKE"

JC (1871) 65:  $\wedge$  (Cu wkg). Stibnite; chalcocite; copper;  
pt 1 chalcophyllite; chrysocolla; cuprite;  
chalcantite; libethenite; liroconite;  
malachite; melaconite; olivinite;  
torbernite; wolfram.

Rudler (1905) 82 Gunnislake: "uranite" in gozzan at as great  
a depth ~~as~~ as 90 fms from surface, with oxide  
of iron assoc. with oxide of manganese.

Hogg 1825 A Manual of Mineralogy p35 chalcophyllite  
Dewey Cu (1923) 7 (Henwood: - chalcocite & melaconite in granite)  
"vitreous & black masses only" at Gunnislake (Cont'd (II))



Old GUNNISLAKE MINE, Calstock, Cornwall (II)

W Phillips (1816). 115 <sup>Tragedy</sup> ~~See Low~~ Torbarnuk in -

W. Phillips (1823). Fibrous malachite;  
libethenite; chalcophyllite; cuprite

A. Wright & B. Cooper, gift to RSWB, 10/70 Olivenite in qtz

RSWB 7/65 4 196-7: Dumps at 433 718 barren.

Dumps at 430s 719s with ivy-covered chimney: - matrix  
quartz & rotted granite: - (pseudomalachite) → See III  
chrysocolla; malachite; metatorbarnuk

R. Turner 6/80 Dumps shifted away - now built on  
- dumps taken to playing field by river - can still collect  
on bank - 436 713 (?)

Dines HG (1956) II 639 Torb, zippeite

C. Rogers (1968): - Torbernite; chrysocolla;  
pseudomalachite; cornwallite

B. Cooper (1973) spec → RWB for ident -  
chalcophyllite, micro-x's; from adit  
~~near~~ at 433 723, near bridge

B. Cooper (9/77) Francolite found by P. Golley  
about 1975

H.R. Shambrook, N. Mines Res. Soc. Newsletter Aug (1979)

Torbernite, zippeite - 91 fm level in Michael's  
Shaft. Adit from river bank just S of New  
Bridge: - W 84 fms → N 20 fms → W 60 fms. Navigable,  
1977

# Old GUNNISLAKE M., Calstock, Cornwall (TT)

GR The IR of a sample of the "pseudo-malachite" coll by RSWB in 7/65 (see II) is not = normal pseudomalachite ("2") but is related to it ("B").

7/87 This IR matches that of a sample of reichenbachite off RSWB 87-30, from Reichenbach, W. Germany.

RSWB 8/87 IR's of a number of spec's of massive green "pseudomal" all = reichenbachite.  
eg. 87-104. A spec 87-105 coll N Carruth ex William's shaft dumps (being excav.



Old Gunn. M.

for a house) on other side(s) of road from  
Shere Ivy-covered chimney used to be. - has "normal"  
("2") pseudomalachite only (3 places sampled) and  
chrysocolla on quartz  
But of GR letter 1/12/89 3 specs coll by  
"MAC June, 1986" from Williams Sh. dump  
all checked by IR, all reichenbachite.

GRyback (1991) IR K809, spec ex R. Taylor  
from Old Gunn. Mine - near tyrolite

CMRM (1995) Fluorapatite; autunite; azurite; chenevixite;  
connellite; "chalcotrichite"; cuprotungstite; mixite; pharmacosiderite;  
schedite; scorodite; uraninite;

Gunnislake Old Mine.

(IV)

→RB

Situated in granite immediately to the west of the Great Crosscourse that trends North 30° West, and passes underneath Gunnislake Village towards Devon Great Consols on the Devon side of the River Tamar, this once very rich copper mine was noted for the occurrence of the hydrated phosphate of copper and uranium TORBERNITE  $\text{Cu}(\text{UO}_2)(\text{PO}_4)_2 \cdot 12\text{H}_2\text{O}$  and the basic uranium sulphate Zippeite  $(\text{UO}_2)_2(\text{SO}_4)(\text{OH})_2 \cdot 5\text{H}_2\text{O}$  their presence being first noted on the 91 fathom level in Michael's Shaft in lenses and small pockets of a vughy nature.

Great Green Lode, where the majority of these small pockets occurred, is 10 fathoms south of Michael's Shaft, and underlays 18° South; crosscuts meet the lode on the 21, 31, 71, 81 and 91 levels. The lode has been stoped between the 71 fathom and 91 fathom levels for 130 fathoms west of the shaft, and to a smaller extent between the 21 and 31 fathom levels. Situated 32 fathoms south of Great Green Lode is Little Green Lode underlying 20° South, where workings are restricted to the 21 and 31 fathom levels. Parker's Lode in the south of the sett, courses East 30° North, and has been worked from Parker's Shaft to the 72 fathom level.

Adit level commences on the Cornwall side of the River Tamar, just south of New Bridge; driven westwards for 84 fathoms, then north for 20 fathoms, then again westwards another 60 fathoms.

On a visit to the mine in 1977, the adit was found to be navigable throughout its entire length.

H.R.Shambrook.

*N. Mines Res. Soc. Newsletter Aug. 1979. - -*



RSN(2001) 39, 13. Visit to O.G. ADIT - flooded  
with semolina-like muck; but a "nice  
little chalcophyllite" found.

T. Bridges et al (2005) J. Russ Soc. 8 [2], 81-84  
AUGK's antlerite prob. OK



GUNVER HEAD, Padstow, Cornwall

See PADSTOW CONSOLS MINE

1" 189

2½" SW 53 573328, 5632

W.H. GURLYN, St. Hilary, Cornwall

M 26

1" 187  
GUNNIS LAKE CLITTERS MINE, (I) K 35

See also OLD GUNNIS LAKE (KI); E. GUNN. & S. BEDFORD (S 69)  
Little map, 12.

Calstock,  
Cornwall

OS 6" map: Sn, Cu, & As mine

JC (1841), 65: (Cu, Sn, wkg.) Chalcopyrite

Mr. Bassett

Riv comm (8/66). Dump by river [~~at~~ 423 723] has azurite  
xls minor pseudomalachite, in aldering  
tetrahedrite with baryte.

RSWB (7/65) 4 1978. Skinners Sh. at 422 720. Ruins,  
dumps being shifted - barren. Some quartz;  
pyrite cubes; arsenopyrite. granite

(8/66) 5 59. Dumps by river at 423 723. Azurite  
xls malachite, quartz, baryte, tetrahedrite;  
+ greenish yellow ----- ? minute platelets.



C. Rogers (1968) :- Tetrahedrite; baryte; linarite [?]

B. Cooper (9/77) "Apatite" found. —→  
Spec → RSWB (12/77).  $n < \sqrt{\text{Acet tet-Br.}}$  ∴ CO<sub>3</sub>-apat  
[77-132]

BV Cooper 4/79. Ident RB Brochantite, langite.

Richard Turner, Priv Comm 11/4/80; 16/5/80.

"Roscherite"  $(\text{Ca, Mn, Fe})_3 \text{Be}_3 (\text{OH})_3 (\text{PO}_4)_3 \cdot 2\text{H}_2\text{O}$ , sparse  
bottle green rosettes to ~ 1 mm. New to Britain,  
written up for Min. Mag. (see II)

The wolframite is ferberite (Mn-free)

W. Eliasson Priv Comm 11/85. Spec's → RSWB. 85-189, 198.

Qtz-haem-chalcocite vein stuff w micro xls connellite, chalcocite  
langite, brochantite

GUNNISLAKE CLITTERS MINE, Cornwall (II)

RW Barrow, Riv. Comm. Top dump, 720423:  
Francolite, wolframite, cerussite

"M.J. Minerals" catalogue 18; April 1998:

Childrenite, tiny shiny brown "granular  
crystals" on grey silky-looking matrix  
[killas]. [Needs verification]

M & S Frost Russ Soc News (2003) 42, 4  
Chalcosiderite (confirmed BMNH)

AM Clark et al (1983) MM 47, 81-3. Fe-rich →

"roscherite" (near Fe end-member) ("not warranting  
new name" according to Lindberg's (1958) definition)  
[But. is new = Greifensteinite]

Chukanov et al (2002) (See Laptops Abs 4/03)  
New Fe-endmemb. of roscherrite series  
= greifensteinite, from Saxony, & prev  
found in Cornwall, USA, Austria, Brazil, Kazakhstan.

RSWB (17/9/2011) "Grab" sample from BMS Symposium  
from "Gunnislake Clitters" (RSWB 11-14). 5x3 cm  
pharmacosiderite, rich, small brown cubes  
on matrix.



1889

SW 437 382

GURNARD'S HEAD MINE, Zennor, Cornwall

DBB(1963) 11. Mentioned.

AKHJ (1961) 1. Started < 1821 as TREEN Cu MINE.

Orig. shaft on a projecting rock nr. high water mark - protected by 10 ft wall.

Later shaft well back from cliff.

Copper ore.

NORTH UNITED & GURNETT'S HEAD MINE started 1843.

Lodes visible at surface on Carn Mean Point, where shaft still visible. To E, can see workings

8 CARNELLOE M., on same lodes, in Veor Cliff  
~~BM5N~~ BM5N(2000) 57 2. "gemmy" clinoatacamite  
from Gurnard's Head.

1" 189

SW 563 315

GUSKAS & ANNA MINE, St Hilary, Cornwall  
= GUSKUS

Dewey (1923) Cu ore 1852-66



1" 189 2 1/2" SW 53 528318  
WHEAL GWALLON, St. Hilary, Cornwall

M7

AWGK 7/58. Should be looked at. Curious  
yellowish botryoidal blende ✓

TMH(1868), 41 Slate. Cassiterite ✓

Dines (1956) 177

1" 189

1" 189 471275 (468 279)

SKJ 2

GWAVAS QUARRY, NEWLYN, Cornwall (I)

Penlee Quarries, Ltd. (also own Castle-an-Dinas  
granite quarry nearby)

V. Rae (Priv ~ 1990) Nat B<sup>i</sup> - PENLEE beach

Visited by GR 1958 Assist. Manager Mr Bidder - nice chap.

Visitors allowed with permission; blasting daily 11 am  
and 4.30 pm. ~~tot~~ drusy, intergrown

LOW FLOOR. good cubes of Pyrite, botryoidal chalcedony GR

Metalliferous Qtz veins in hornfels with biotite, pyrite,  
chalybite, chalcopryite, molybdenite, löllingite,  
arsenopyrite, blende, galena, cuprite - AWOK, priv comm

RWB<sup>R6SC</sup> etc. (8/66) 5 54 . Quartz; quartz φ-after

orthoclase; arsenopyrite; chalcocite;  
chalcedony; pyrite; chalcopyrite.

Anon., Jemo (1973) 5, [2], 9-10. Working Penlee Q'y.  
Exceptional arsenopyrite vls., "beautiful  
arborescent formations of arsenical pyrites,  
chalcopyrite, and pyrite"; chalcopyrite,  
galena; sphalerite.

CMRM (1995) "PENLEE Q'y"; Nat. bismuth; clinochlore;  
cronstedtite; "isingerite"; joséite; joséite-B;  
pumpellyite (Mg);



# GWAVAS QUARRY, Newlyn, Cornwall (II)

RSN 23 (1992)

Penlee Quarry, Newlyn, Cornwall  
17th May 1992

Fourteen members, including a visitor from our neighbouring Southern branch, set off into Penlee Quarry under the leadership of Colin Sparrow. Initially we headed for one of the uppermost benches, Steve Brown kindly transporting heavy rucksacks and other items of equipment in the back of his Landrover.

Collecting conditions were ideal on this bright sunny day and specimens of arsenopyrite were soon found, generally massive, occasionally associated with thin flexible molybdenite 'foils' and rarely containing vugs of small arsenopyrite crystals. Siderite, in the form of the cleavage rhomb and also in the lenticular habit was fairly abundant, but the size of the crystals left a little to be desired.

As mid-day approached we headed down to one of the middle benches of the quarry and as we took

in the wonderful view across Mount's Bay, the rather pleasing aroma of fried bacon and mushrooms could be detected issuing from the back of the Landrover.

The majority of us, after having made do with gravelly butties and gritty buns, started to attack an area containing large rocks of brecciated quartz/dolerite material. After several blows with a sledge hammer to a likely looking boulder, David Roe 'struck lucky' revealing a group of pale blue fluorite crystals, each to 4mm, on a matrix of small but water clear and well terminated quartz crystals. The rest of the afternoon was spent in breaking up 'Dave Roe's Rock' and after many blows with sledge hammers and lump hammers several more fluorite crystals were recovered and I believe most people ended up with some representative specimens. The colour of the fluorites varied from water clear, through pale blue to deep lilac. Other minerals found in this brecciated material included translucent white to pink adularia crystals; siderite, in many shades of brown; specular hematite in small highly lustrous disc and hexagon-like plates growing on and out of the quartz/

adularia; and a large opaque calcite crystal, 10mm across showing an hexagonal tabular form. Further study of this material after the field meeting revealed some small, steel grey metallic filaments of bismuthinite nested in the quartz/adularia assemblage.

Nick Talbot managed to recover a rather interesting scheelite (?) crystal, dirty grey in colour and about half an inch across, which was associated with a dark green chlorite/mica matrix. This came from an area just to the north of the brecciated material.

Although no museum pieces were found, a very enjoyable day was had by all and I believe everyone went home with something to show for their efforts.

## On Penlee Quarry (=GWAVAS Q.)

David Roe

RGN (195) 26

A couple of years ago I was lucky enough to find a boulder at Penlee Quarry, Mousehole, Penzance having a number of small vughs containing fluorite and associated minerals. Although small in size (1-2 mm) the fluorites were 'little crackers' under

x10 magnification. Their extremely attractive appearance resulted from their clarity and colourless or purple colouration, and combination with other minerals.



These included:

- Quartz as extremely long elongated glass clear crystals
- Chlorite as moss-green rounded sheaves and straw yellow spiky spheres
- Hematite as black blades thin enough to give a blood-red flash of colour
- Siderite as straw coloured rhombs

and a solitary hair-like crystal of bismuthinite, which ironically I appear to have lost or to have inadvertently given away... if any one has seen a lost bismuthinite...

It has to be said that the matrix is ferociously hard, unpredictable in cleavage direction - except for a golden rule that it will always crack across the middle of the vugh and bisect the best crystals - and trying to extract reasonable size samples was an exercise which required great mental resilience and fortitude in the face of adversity.

A number of features make the samples particularly attractive. The fluorites are usually cubes, often with bevelled edges. In many cases they are colourless with a smudge of purple in the centre of the crystal. Struck by this I examined these

more closely and found that the purple was often in the ghost-like shape of an octahedron. This suggested that the purple was the ghost of a previous purple fluorite octahedron in the original matrix which had acted as the crystallisation centre for a later growth of a colourless fluorite cube. Confirmation of this might be drawn from the very occasional occurrence of tiny purple octahedra in isolated vughs and the rare completely colourless cube of fluorite in other vughs.

A further oddity is associated with a yellow brown material which occurs in some samples and I have assumed it is a form of chlorite or clay mineral. In one sample a group of bevelled cubes of fluorite are coated with this (rather like a house roof after a foot of snow) but the bevelled edges are completely bare on all sides giving a most odd and attractive appearance. In one other sample I have found number of quartz crystals in which some of the crystal terminations are coated with a dusting of red (hematite?) but only every other face is coated so that when the crystals are viewed end on they appear as a three bladed propeller.

Penlee may not produce large or exotic minerals but this particular boulder has probably given me as much pleasure from the aesthetic point of view as almost any other I have ever collected.



RSN(1997)31 17 "PENLEE Q." Working.

Actinolite; arsenopyrite; cassiterite;  
cabinet-size chalcedony; ch'pyr xls,  
chlonite; fluorite; goethite; pyrite  
xls, molybdenite; siderite; quartz.

RSN(1998)33 12. "PENLEE Q." Field trip.

Nothing new.

MM(6/9/01) sample → RSWB for ident. Ilmenite  
(Powder XRD M. Jones) fragments in tube ~~etc~~  
(Some xls found" MM).

1" 190 SW 73, 74. SW 73 40 (Village)  
GWENNAP, Cornwall. (I)

Rutley, 15 Ed., p. 158. chalcantite ✓

BM: Tennantite ✓

1" 190 St Keverne 790 212

SW 7 2 ?

GWENDRA, St. Keverne, Cornwall. L 26

JC(1871), 54.

Menaccanite, disseminated. [Hey-  
a var. of Ilmenite]



Jwendra M., St. Stephen-in-Brannel, Corn.

See Egloshellen M.

1" 190

SW 73 17

GWENDREATH QUARRY, Kennack, Cornwall

CMRM (1995) Chrysotile

Gwenap, Cornwall

(11)

AR, MM. 16, 55 (1911): Wh. Gorland. One specimen phenakite found 1910 on a dump of the re-started St. Day United mine [exact underground source, in Wh. Gorland, is given]: pale green massive fluor, opaque white quartz xls, chalcoppyrite, black blende, + light-green earthy chlorite enclosing arsenoppyrite. On or embedded in quartz, or embedded in blende or chalcoppy., are deeply striated phenakite prisms (largest  $9 \times 1\frac{1}{4}$  mm).

AR, MM. 16, 55 (1911): St. Day United mine: Two Talling specimens of "apatite" in BM recently identified as phenakite (Semmons collected



one of these from a wolfram-bearing lode at St. Day United mine in 1864, see J. Liv. Geol. Ass., 1892, 12, 33; in about 1856 Poldice mine, Wks Unity, Gorland + Maid were amalgamated as St. Day United mine). BM. 41069 has colourless xls (up to  $1\frac{1}{4}$  cm  $\times$   $1\frac{1}{2}$  mm) on mass of long quartz xls cemented together + coated with chlorite. BM. 44675. is a mass of very pale green fluor sprinkled over with colourless prisms (up to  $1\frac{3}{4}$  cm  $\times$   $2\frac{1}{2}$  mm) of phenakite.

Rayner's Cat. (1960).

Clinoclase, fluorite, cuprite.

11 189 Parsh SW 53, 63.  
GWINEAR, Cornwall. (I)

Parkinson's Cat. (1959). Bayldonite ✓ on quartz;  
cornwallite ✓; chlorite ✓ coating quartz xls.  
[cf Wh. Carpenter].

AR MM 21 221 Topaz, ✓ with cassiterite ✓

Gwinear, Cornwall

(VI)

Rayner's Cat (1960).

Cassiterite, chalcopyrite.



1" 189

SW 607 368

Wh. GWINEAR, Gwinear, Cornwall.

H 66

JC (1871), 50:

Molybdenite; cassiterite.

Burt et al (1987) GWINEAR CONSOLS 607368

1" 190

SW 740 179-7418

GWINTER, Sr. Keverne, Cornwall L 27

JC (1871), 54: Magnetite disseminated in  
diallage rock; sannurite?

? = GWENTER SW 740 179