

CHANNEL ISLANDS.

"The Rocks of Sark." Wes Gibbons (1975)
Pub: Manche Technical Supplies (Jersey)

Ixer, R.A. & Stankey, C.J. (1980) "Mineralisation at Le
Pulec, Jersey, Ch. Is". Min. Mag. 43, 1025-9

Mourant, A.E. (1961, 1978 revrs) "The minerals of Jersey"
Soc. Jersiaise.

Ixer, R.A. (1980) "The ore minerals of Jersey" Ann. Bull.
Soc. Jers. 22 [4], 443-51

Mourant, A.E. & Warren, J.P. "Minerals & mining in the
Chan. Is." Trans. Soc. Guernesraise (1973), 12, 73-88
"Published 1934"

T.M. Hall (1868) The mineralogist's directory.
Anstead & Latham (1862) The Channel Islands.

CHANNEL ISLANDS.

TMH (1868), 78. Anstead & Latham "The Channel Islands"
London (1862) give the following, but without
localities: Actinolite, adularia, agate,
analcime, anglesite, argentite, calcite, cerussite,
chabazite, chalcedony, chalybite, azurite,
chlorite, "diallage", dolomite, epidote, felspar,
flint, galena, garnet, graphite, haematite,
hornblende, hornstone, hypersthene, jasper,
kaolin, cerargyrite, limnite, magnetite,
malachite, mesolite, mica, potstone, prehnite,
pyrite, pyrolusite, pyromorphite, pyroxene,
quartz, rutile, serpentine, sphene,

spodumene, steatite, stilbite, talc, tourmaline,
chalcopyrite, tremolite, wad, yellow ochre.

The metalliferous minerals are rare, &
almost confined to Sark and Herm.

A E Mourant & J P Warren "Minerals & Mining in the
Channel Islands" Trans La Soc. Gevernesiaise
(for 1973) 12 73-88 (Published 1934) Details.

"Mercury ore unk in Britain or Brittany, occurs near
Le Menildot, Manche, less than 40 ml from Jersey"
Mineralisation fits with W Normandy & N Brittany -
unlike Cornwall & S. Brittany.

ALDERNEY, C.I.

TMH(1868), 78. Felspar.

There has been no geological survey in recent years, but a party organised by the Maritime Laboratory of Dinard paid a brief visit in August 1939, when Dr A. E. Mourant, of Jersey, reported most of Brecqhou to be granite 'seen in several spectacular sections overlying the schists, as it does in Sark. On both north and south coasts, about 400yd from Pointe Bêlême, the main junction is seen to dip westwards, the granite thus lying both above and west of the schists. Two faults... bring the junction up again near Le Port... Two mica trap dykes, one on the north and one on the south coast, and three dolerite dykes were noted.' A quarry to the west yielded 'the freshest specimens anywhere of the Sark type of granite'. The party found several large blocks of a mineral vein, consisting of a fine-grained banded mixture of

quartz and laemalite and, at Pointe à Fouille, some strikingly contorted schists containing a vein of quartz and white, coarse-cleared pyrites clearly visible from the sea.

The mineral blocks were almost certainly raised during Brecqhou's share in Sark's mining venture, though an unauthenticated story claims Dutchmen worked copper there much earlier. A shaft with a squared roof facing south-east was opened in the mid-1830s and a report to the mining company in 1838 stated: 'The present working lode has a very imposing and promising appearance near the sea. It contains plumbago and carbonate of lime, in which good yellow copper ore is found. A level has been driven west fifteen fathoms and the lode cut through from wall to wall, which is about 14ft, but it has not opened according to expectations.' Soon afterwards the workings were abandoned, because of constant flooding from underground springs.

Brecqhou has no shortage of underground water and there are three wells. One just below the swimming pool, on a lawned terrace north of the big house, is by the site of a fresh-water pond, now filled in; 10ft (3m) down the well lies a rich vein of amethystine Sarkstone quartz. About 30ft (9m) above mean sea level in the cliffs at Le Port is a fine example of raised beach, its sea-washed stones bared when the road was cut.

"Sark" (1977)

Ken Hawkes.

The Islands Series

GUERNSEY, C.I.

TMH(1868), 78. Epidote; feldspar.

Mourant & Warren (1934) Rep Trans. Soc. Guerns. 12 73-88
Pb-Ag mineralisation from two veins on
S coast at PETIT BOT BAY and MOULIN
HUET BAY.

JERSEY, C.I.

See also SOREL POINT; LE PULEC; L'ETACQ Qy;

TMH (1868), 78. Chlorite; emery; epidote; felspar;
hornblende; hornstone; platinum; quartz;
serpentine; steatite.

AE Maurant "The minerals of Jersey" 1961, revised & enlarged 1978. Pub. Société Jerseyaise, The Jersey Mus. Map. List of minerals with locs. List of locs, with minerals. 24 pp's. Ref.
Actinolite, aegirine, agate, allanite (orthite)
allopmane, anatase, andalusite, ankerite
apatite, atacamite, arsenopyrite, augite,
azurite, baryte, birdheimite, biotite,

sphalerite, bornite, brookite, calcite, carbon,
chalcedony (incl. "beekite"), chalcopy., chalcocite,
siderite, chlorite, covellite, [cuprite - artefact]
diopside, dolomite, epidote, "epistilbite",
epsomite, fluorite, galena, garnet (andrad.,
almand.), "gilbert", goethite, gypsum,
halite, haematite, hornblende, ilmenite,
jamesonite, kaolinite, "limonite", magnetite,
malachite, marcasite, melanterite,
mirabilite, molybdenite, muscovite,
natrolite, olivine (incl. zcm & morphs);
opal, orthoclase, plagioclase, prehnite, pyrite,
pyrrhotite, pyrolusite, quartz, rutile, serpentine,
sphene, talc, tavanakite, tourmaline, tridymite,
vivianite, wad, water, wollastonite, wulfenite, zinnwald, zircon.

ELIZABETH CASTLE, St Helier, Jersey,
C.I.

Teihard de Chardin e Pelletier. Bull.
annu. Soc. Jersoise (1911) 7, 92-111.

"Notes ~~sur~~ miner. e geol. sur l'ile de Jersey"

"Wollastonite" + calcite at the Hermitage,
Elizabeth Castle nr St. Helier. in
veins separating porph. dolerite from a
small dyke of aphyric dolerite.

Bishop et al Min Mag (1982) 46 504-6 Re-
examined site. quartz; calcite; abund buff
prehnite some as xls some radiatg some
"bow tie". A little epid, sphene. No wollast.

L'ETACQ QUARRY, Jersey, C.I.

Rothwell & Mason (1992) UKJMM II 30-40. Wulfenite
reported by Lacroix (1913) as small
prismatic xls modif. by a steep bipy,
in a quartz-molybdenite vein, assoc
w. molybdenite & small needles stibnite.

UTM 547 549

Le PULEC, Jersey, Channel Islands (I)

RA Ixer & CJ Stanley MM (1980) 43 1025-1029
"Mineralism at Le Pulec, Jersey, Ch. Islands"

3 veins discov'd 1871 on foreshore of Le Pulec, a small bay on NW coast close to granite g's of L'ETACQ. One vein (No 3) still exposed. Descr by Williams, B (1871) "Report on the Jersey Silv-lead mine" Jersey, 4pp; Ogier EF (1871) "Rapport sur les mines de plomb du Pulec, Jersey, 8pp; Lode No 3 descr. by Teilhard de Chardin, P, & Pelletier, F (1911) Ann. Bull. Soc. Jersaise 7 99-111; map & descr. by

Mourant AE & Warren JP (1934) Rep. Trans. Soc.

Guernes 12 73-88 & unpub report in the library of the Soc. Jersable by S. Howell (1977)
In siltstones close to granite contact.

Quartz, ferroan dolomite, ferroan calcite, calcite,
Pyrite, pyrrhotite, marcasite, chalcocopyrite,
arsenopyrite, sphalerite, galena,
tetrahedrite, nat. antimony (first
public. of British), cubanite, bournonite,
plagioclite, stibnite. Sulphides
mostly intergrown, found by polished section
work, electron probe, XRD.

Stanley & Ixer MM (1982) 46 134-6

Le PULEC, Jersey, C.I. (II)

S. Howell, Coll. 1930? From sea-level
adit in NW part of No. 1 Lode, large
lumps of galena with anglesite
(FTIR, RSWB 6/91) in good crystals to
> 1 cm, also phosgenite (FTIR, RSWB 6/91)
platy crystals to ~ 3 mm scattered
on oxidised surfaces

ST. LAWRENCE VALLEY, Jersey, CI

Heye Maurant (1933) Bull. annu. Soc.
Jersaise, 12, 104. "Epistilbite,"

small xls on rock, in small
aband q. in Jersey Shale N of
Dannemarche Reservoir. Prev. noted
by :-

Teilhard de Chardine Pelletier, (1921) Bull.
annu. Soc. Jers. 2 293-4, from the valley

AEMaurant. Specs → S. Clark - one to RSWB [81-5];
IR = orthoclase (adularia).

Bishop et al, Min Mag (1982) 504-6. "Epi-" = orthoclase

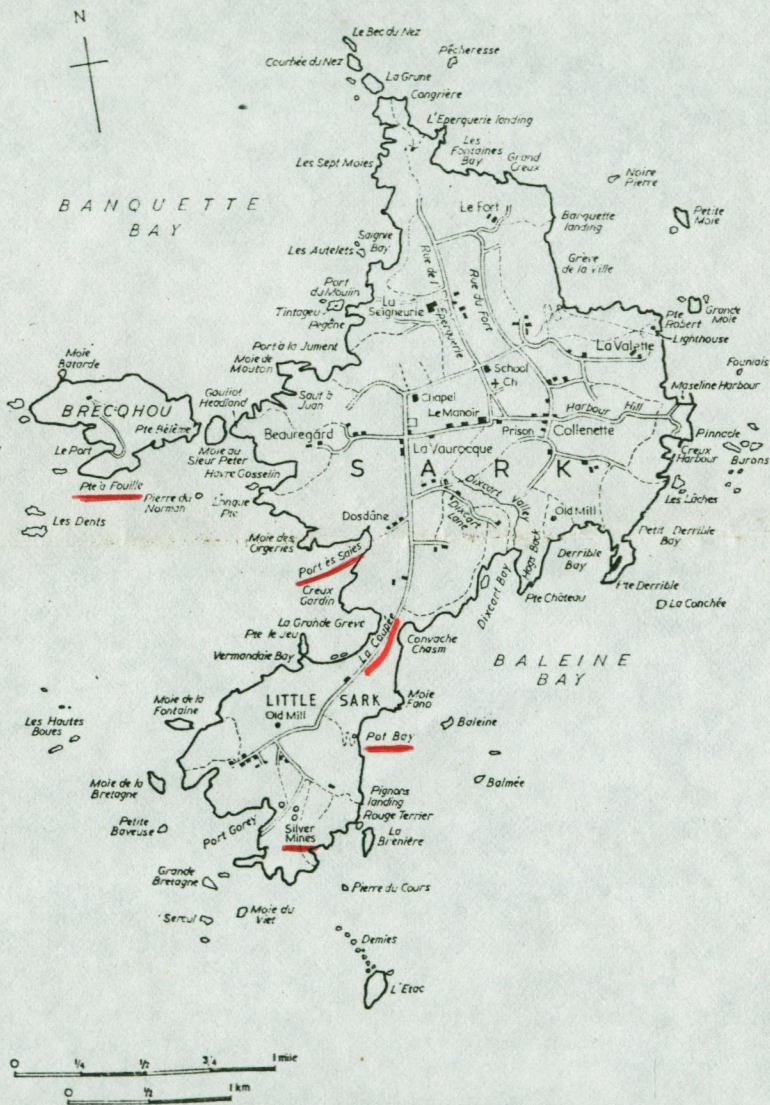
SOREL POINT, Jersey, C.I.

MA 10 407 brookite, abundant, and
anatase, as small xls in a
felspar-chlorite vein cutting gabbro

SARK, C.I.

TMH (1868), 78. Actinolite; anglesite; argentite; asbestos;
galena; cerussite; cerargyrite; leadhillite;
pyrargyrite; pyromorphite; serpentine;
silver; steatite; talc.

"The Rocks of Sark, Channel Islands" Wes Gibbons (1975)
Pub: Manche Technical Supplies (Jersey)



Faulting and minerals

Many nearly vertical basic dykes, up to 40ft (12m) thick, intrude the metamorphic rocks and foliated granites. An older set tends roughly NW-SE and a younger set NE-SW. There are also acid dykes up to 20ft (6m) thick and younger dykes of mica camprophyre. Numerous faults displace the rocks, most with only a small throw. Some faults predate the basic dykes, while others displace these intrusions.

Some faults in Little Sark gave access to solutions from which minerals of economic importance were deposited. Mineral veins were known in Sark in 1609, but mining activity began only in the 1830s (see p 115). The principal silver ores present are cerargyrite and argentite, together with pyrargyrite and the antimony-bearing mineral, jamesonite. The chief copper ore is chalcopyrite, which oxidises to malachite and azurite. Calcite is the main gangue mineral and among many other minerals reported from the mines are quartz, feldspar, limonite, wad, pyrite, pyrrbotine, galena, argentiferous galena, stibnite, mispickel and leadhillite.

Amethystine quartz is commonly sold by Channel Island jewellers under the name 'Sarkstone'. Pale amethyst has been recorded from Sark, but the deeply coloured amethysts are not of local origin.

Several raised beaches, about 26ft (8m) above mean sea level, were identified by Gibbons during 1975 in caves and gullies at the island's northern and southern extremities.

Convache Chasm to Le Creux à Pôt

A difficult climb from the clifftop north of La Coupée descends to majestic Convache (or Convanche) Chasm, with its towering entrance, needle's-eye exit and deep, blue water. Sunlight reveals every shade of blue in Sark waters, from sapphire to deep indigo, with greens that include the vivid jade of still rock pools.

Rarely visited La Coupée bay, stony and forbidding, lies under the tumbling east face of the land bridge. Southwards of the bay's shoulder, Droti Emanuel, Little Sark's shoreline can be seen only by boat past Monts Razeur bay to the impassable gully at Petite and Grande Moies Fano. Formerly shown on maps as Fannou, this bird roost and hatchery is one of many place-names with alternative spellings, probably because Sark French is unwritten.

It can be reached by scrambling north past the Three Brothers rocks from Creux à Pôt's exit tunnel. Usually known as the Pot and, after Derrible, Sark's most impressive chimney, it is descended down a zigzag, shale path. Adits opened by mining can be seen just north of the sea entrance and halfway up the cliffs.

Verdigris stains, one high patch known as Le Taque à Copper, show the continued presence of minerals, and quartz crystals are found at sea level. Offshore are the rocks of Baleine, which gives its name to Baleine bay, the overall sweep from Pointe Derrible to Brenière; and its half-tide neighbours, Balmée, Demie de Balmée and Avocat, with La Gripe $\frac{1}{2}$ mile to the east.

MINING

All mining rights were granted to the seigneur by the 1565 charter. Rumours of rich copper and silver deposits came to nothing until 1833, when visiting mining engineer John Hunt

found traces of copper at Creux à Pôt. In the following year Pierre Le Pelley, grandson of the man who evicted Levrier, granted a twenty-one-year concession to mine Sark and Brecqhou. It was vested in the newly floated Guernsey and Sark Mining Company, which issued 200 £5 shares; Hunt took up thirty, Le Pelley ten. The first party of miners from Cornwall started work at Le Pôt in 1835. Cachemaille, whose ministry began in that year takes up the story:

Much labour was spent upon it; good indications were constantly turning up, but no paying metal. In despair Mr Hunt most carefully examined all the cliffs at Little Sark, and discovered rich indications of a vein of silver and lead . . . a greater number of English miners were sent for, the Pôt was abandoned . . . and the works at Port Gorey were pushed on with redoubled activity. An experienced captain, John Prince, was placed at the head of the concern; a powerful steam pump was had over, and later a steam winch was added for clearing out the levels.

An ore which was very rich in silver was then obtained, worth £600 the ton, but the quantity was small and the vein continued very narrow . . . a tea and coffee service of pure silver from the Sark mines was kept prominently before the Guernsey public; the sight encouraged the shareholders and helped to urge forward the work. The mining population . . . amounted to 250 souls, including women and children. Between 70 and 80 Sarkese were employed on the works . . . Nearly all the English miners were domiciled in Little Sark, which swarmed with people . . .

There were four shafts above Port Gorey: Sark's Hope, Le Pelley's, Vivian's and Prince's. Other workings had been opened at Port és Saies, where miners had to be lowered down the cliff by ropes, but difficulty of access forced these to be abandoned.

Triple tragedy

On 1 March 1839, with the mining operations at their height, Seigneur Le Pelley set off from L'Eperquerie for Guernsey with

boatman Abraham de Carteret and his eighteen-year-old son, also Abraham. Cachemaille, a close friend of the seigneur, went to see him off in a strong southerly gale:

Thinking that they would probably wait till the tide had slackened, I made up my mind to take leave of Mr Le Pelley . . . I hastened to ascend the cliff that I might follow the boat on her way. When half way up, I was amazed to see that the boat had already started, with its foresail up, going straight towards the Pointe du Nez, where the tide made a high white wall of foam . . . I trembled for the boat and climbed higher up, so as to see better how it would pass that wall of water . . . At this moment the boat entered the tide and immediately rose up almost perpendicularly. An instant after we saw its keel shining in the sun, and a few seconds afterwards boat and all had totally disappeared in the waves and nothing reappeared.

The boat's remains were picked up in the Channel by the Portsmouth trader, *Two Brothers*, and its sternpost was washed ashore on Brecqhou; but the three bodies were never found and a memorial tablet in the church carries the Apocalyptic prophecy, 'La mer rendra ses morts'. The experience was so traumatic for Cachemaille, his subsequent terror of the sea so great, that he never again left Sark for the remaining thirty-eight years of his life.

Mining losses

Ernest Le Pelley, who inherited the fief on his brother's death, watched the mining venture stagger from one disaster to the next. Ore raised from the eight galleries of the four shafts, one extending 200ft under the seabed, contained too little metal; promising veins dwindled and died, and new injections of capital were needed to instal more powerful pumps, as water seeped menacingly into the workings. At times of storm, the miners could hear boulders rolling on the seabed, far above their crouching heads. To raise more money, Le Pelley took a £4,000 mortgage on his fief from wealthy Guernseyman, Jean Allaire. A piecework bonus was introduced to spur the miners to

ever greater efforts, but Sark's 'Hope' was fast proving a mirage.

Finally seawater burst through a collapsing gallery ceiling, drowning ten miners and flooding the only profitable part of the workings. An oft-repeated story claims that, on the same day in 1845, a cutter carrying ore worth between £10,000 and £12,000 struck a rock off Guernsey, sinking with all hands and its uninsured cargo. The name of the cutter is never given, however, and there is no reference to the wreck in the 1845 files of two Guernsey papers, *The Comet* and *The Star*, though others are reported.

A Guernsey authority on local shipping history, Eric W. Sharp, says, 'I have no record of any wreck of a Sark ore boat other than the schooner *Horatio*, that hit the Black Rock off St Sampson's while on her way to Bristol on 8 January 1841. She was got off, repaired at St Sampson's and proceeded.' Even today many Sark people believe it was this apparently mythical wreck, not the flooded gallery and cumulative burden of debt, that killed off a doomed enterprise.

Reduced operations went on as most of the Cornishmen left Sark, either to return home or seek their fortunes in America. One who stayed was Thomas Remphrey, four of whose descendants still live in Sark. Wild nights at the tavern opened for miners by a Guernseyman called Taylor were over. By 1847, the mine workings were deserted, Ernest Le Pelley and many of his fellow shareholders ruined. More than £30,000 had been lost in this futile flirtation with industrial capitalism.

Ernest died a broken man two years later, aged forty-seven. His son, Peter Carey Le Pelley, could not meet interest payments on the mortgaged fief. In 1852 Jean Allaire's daughter, Marie, widow of Thomas Guérin Collings, foreclosed and paid less than £1,400 to become Dame of Sark, after the mortgage and its overdue interest had been deducted from an agreed purchase price of £6,000. Like the de Carterets, whose tenure lasted thirty-three years longer, the Le Pelleys ended their seignory of Sark in financial ruin.

"Sark" (1977)

Ken Hawkes

The Islands Series

La

COUPÉE, Sark, C.I.

TMH (1868), 78: Kaolin

Ixer & Stanley (1983) MM 4I 539-45

La Coupée, midway between PORT ES
SÉES [q.v.] & SARK'S HOPE LODGE [q.v.].

Galena has inclusions of tetrahedrite

HAVRE GOSSLIN, Sark, C.I.

TMH(1868), 78 : Potstone

PORT ÈS SÉES, Sark, C.I.

On SW coast of Great Sark.

Mourant & Warren (1934) Rep Trans Soc Guern. 12 73-88
"Argentinean pynite"

Le POT, Sark, C.I.

See also SARK'S HOPE M

Ixer e Stanley (1983) MM 47 539-45

Le Pot silver lode, ~ 400 m NE of SARK'S
HOPE M.

Cu-rich ore examined: no silver-bearing
minerals found.

Mourant e Warren (1934) R.T.S. Guern 12 73-88.

Pyrrargyrite

SARK MINE, Sark, C.I.

TMH (1868) 78: In syenite: galena; anglesite;
cerussite; silver; cerargyrite; malachite;
azurite; calcite; chlorite; haematite;
hornblende; pyrite; rose quartz;
sulphur.

SARK'S HOPE MINE, Sark, C.I. (I)

See also LE POT

TMH(1868), 78: galena; cerussite; cerargyrite; pyrite

A C Bishop, A J Ciddle & A M Clark MM(1977)41 59-63
"Plumbian tennantite from Sark, Channel Is."

A spec from Sark's Hope mine, Little Sark, ex Sir A.R., Coll 1843 by mine manager, is
aggreg of fine-grained gromite & quartz
→ 2cm cemented loosely by anglesite &
scorodite, & contains ~~grey~~ grey plumbian
tennantite.

Thin section shows also pyrite quartz,
haematite, chalcopyrite, sphalerite, (?) galena,
covellite.

"The Rocks of Sark," Ch. 1s." Wes Gibbons (1975) Pub
Manch Tech. Supplies (Jersey); 53-61.

RA. Ixere C Stanley M.M (1983) 47 532-45. "Silver
mineralis'n at Sark's Hope mine, Sark, Ch. Islands"

On Little Sark; lode cut a foliated hornbl. granite; outcrop workings mostly obscured by veg. Said to be 0.4-2.5 m wide, >600 m long, orient $028-037^\circ$, $65-85^\circ$ dip to NW. Some ore coll. ex poorly exposed, & weathered, SW end of vein, but most samples from tips, esp. of Le Pelley's Shaft at NE end.

Host rock h'bl granite, cut by qtz-epidote veinlets & alth adjacent to vein to quartz, sericite, chlorite & calcite. Brecciated frags of this in "the ore,

SARK'S HOPE MINE, Sark, C.I. (II)

[Iyer & Stanley, 1983]

cemented by pyrite, haem-gtz, & galena.
Primary ore mostly pyrite & galena. In some spec's
chalcopryite & tethed-tennantite common. Subord.
sphalerite & marcasite. Minor bravoite, enargite,
pyrargyrite, pearceite, polybasite, acanthite,
pyrrhotite, arsenopyrite. Gangue: haematite,
quartz, calcite, illite. Sec'y: - chalcocite,
covellite, blaubleibender covellite, "limonite",
malachite, azurite, cerussite, anglesite
Details, paragenesis.

Zoning, based on Henwood (1871) Trans. R. geol Soc. Corn
8, 530-9, & Prince (1846), Trans R. geol Soc Corn 6

SW part of lode

Surface. Ag < 1%. Cerussite,
↑ { limon, pyr, minor galena,
↓ { angles, cerargyrite.

50 metres

↑ { galena, minor pyrarg, acanth,
↓ { ceruss, angles, leadhillite,
↓ { azurite, malachite

120 metres

NE part

Ag 10%. cerargyrite
qtz, minor "black Ag ore"
azurite, malachite

"Earthy black Ag ore", qtz,
minor acanthite, chalcop,
tet'hed, pyrite, pyrargyrite.

Mineral concentrates in Guernsey Mus, said to be from
"Sarks Hope M, 1840" show galena, sphal, boulangerite,
bournonite, cinnabar. Mourant & Warren (1934)
show boulangerite & bournon, & Ag appears in traces
in some of our analyses, so could be?