

Halifax,
8 May 1863

My dear Sir,

I received your kind note of the 14th ult. and I should have replied to it sooner, but I waited in hopes of getting from Smith & Kay, his menials of the strata sunk soon the several shafts at the Terra Nova Mines, but as he has not done so, I send the specimens with my plan, and the following remarks.

On the north side of Little Bay in Newfoundland is situated Coachman's Cove, where the rock on the shore was a dark green Serpentine, with a large quartz vein on the Point, which had the appearance from the way of forming an Anticlinal axis. Beyond the Serpentine inland the about 100 Yards, the rock was much contorted with deep grooved markings and cleavage bearing N. 55. E. containing

many small crystals of iron pyrites, much decomposed, as well as small quartz veins, and which I took to be a species of galena. The ridges of this rock bore S E and N W, with steep walls on the west side.

We next landed at Duck Island $3\frac{1}{2}$ miles further up the Bay, and found on the SW side the rocks were a kind of bastard granite.

A cupreous vein about 8 inches wide in quartz bore S 80 E with a dip of 77 to the North. The quantity of Ore was very small. The Island is only $\frac{1}{4}$ mile in diam.; we walked round and saw other veins in the cliffs, but no ore in them.

Veins of Green and White Marble from 4 to 6 inches wide are on the main land to the west of Duck Island, I was told, but we had not time to visit the place.

We anchored at the head of the Bay, 8 miles from Coachman's Cove; and landed at Burret Point, where the side of the hill appeared to be composed of granite; but I could not trace it through the thick, mossy woods.

A Band of Serpentine showed at the edge of the Sideway grooved in the direction of the shore S. 80 E.

We crossed the Rattling Brook, which came down the side of the mountain in a succession of falls over loose boulders of greenstone? rocks. The same kind of rocks shewed all along the shore to the mouth of the river, with a general strike of S. 80 E. At some distance up the river a band of slate crosses; but the stratification is not generally visible being covered over by the boulders and loose stones in the river. At a mile from the shore

the river divides into two branches the SW and NW Brooks, as shewn on the accompanying plan, and at this point Mr. Smith & May discovered the Coffee Lode, and which is the place where the Terra Nova Mine is situated.

The Lode was traced for a distance of 250 feet obliquely across the mouth of the N.W. brook with an average width of 40 feet as shewn by the part colored Red on the plan. The South wall had a general strike of S 85 W by magnet. I made the magnetic variation 29 west. The Lode has a general dip of 80 degrees or 6 to 1 to the south.

The Lode has been split by a Horse as shown on the Plan, and only a thin vein of ore is seen beyond No 4 shaft: the Horse contains a good deal of broken ore mixed with Calc spar and has quite died out at the end of the 10 Fathom level: the shaft is now down 109 feet and the Lode continues to look compact and improving in quality. It was poor at surface only yielding $1\frac{5}{8}$ per cent at surface and $5\frac{1}{2}$ per cent at 50 feet down. A band about 5 ft wide near the north wall is much the richer in quality. Where the Lode disappears under the north bank of the stream there is a thick deposit of ferruginous breccia composed of angular pieces of slate pyrites quartz &c cemented together, into which an Adit has been driven about 20 ft but no solid rock discovered. Some salts scraped off the Adit wall gave by analysis

Protoxide of Iron	
"	Nickel about 2 feet
"	Cobalt " 2 ft
"	Manganese
"	Potassium
"	Magnesium (a trace)
Sesquioxide	Aluminium
Acid	Sulphuric
No	Copper

Near the Bridge the debris has not been affected by any disorganizing action, and is of a clayey nature so that it has been used for puddling purposes I have marked it "Trien" on the plan.

The shafts were sunk in the order in which they are numbered, and samples are sent from each shaft: the Drift from No 2 shaft was in serpentine rock all the way: it made a great deal of water at the face which drowned out the workmen, who thought they were close upon the Lode; but I am inclined to think that the "obscure Spew" by the road side, and near the Agent's house (30ft above the river) ^(a Caunter?) indicate the line of the Lode. The small patches of Ore down the stream were not proved to be a solid lode, but might be drift, though the miners thought it solid.

Dams have been put upon both the SW & NW brooks so as to divert the streams, and enable the miners to obtain a considerable quantity of Ore out of the brook.

By the dam on the NW brook, the rock is vertical, strike S 80W, composed of schistose slate; then a band of "Killas" or more rhombic

fracture; then Asbestos³ and Serpentine rock
forming the North wall of the Lode

In the Brook above the dam are pieces of
 mica slate, granite and quartz, shewing that
the hills must be composed of those rocks

Similar pieces of rock were picked up in the
SW brook, and some large boulders of quartz
were stained with carbonate of Copper;
indicating that there may be other Lodes in
that direction

The hills in the neighbourhood range up
to 1000 ft. high. We ascended one to the north
called Mr. Ray's "Look out" - which by Aneroid
I made 730 ft. high. The rock appeared to be
Gneiss for about $\frac{2}{3}$ of the way up, in bands
running nearly east and west; then mica
Gneiss shewed with small quartz veins -

Another hill $\frac{1}{4}$ of a mile to the east was 770 ft.
high; the same gneiss rock and quartz veins
prevailed, and some granite boulders on
its summit they must have come from the
higher lands to the westward, which I after-
wards ascended, and found to be composed
of Granite, and 1100 ft. high; with a large

Lake surrounded by bog on the summit.
The rocks were too much covered with
vegetation to observe any strata. Rhodora,
Galium, Birch, Spruce, Willow, Blueberries,
Partridge & Hignon berries, Empetrum, and
a great variety of Mosses and Lichens.

Some quartz boulders 6 ft. in diameter were
found on the mountain side, but I could
not detect any gold or pyrites in them.

It was so late in the season, and several
squalls of snow prevented us from
walking over and exploring more of
the country.

I have also sent some samples of
Lead ore from Saanen; and rocks from
other places which I thought you might
like to have.

Campbell's Section is ideal: he has
not worked out any straight line
across the country. If so he would have
had to show Granite ridges: also the
Slates and "whin" or Felstone with
quartz veins alternate in their bands

His notes of Cape Breton have induced parties to take out rights of search; as no doubt more will be known about the Island and its resources by the end of this year. I cannot learn than any one has seen his native silver or other discoveries: he ought to bring specimens to verify his statements. I do not believe that Prof. Lesley is quite correct in the scheme of the Glace Bay Coal field, for I know of Coal seams that he has not referred to. So many Coal mines being opened will give facilities of studying the geology of that district. Opening the little Glace Bay for vessels has been a great success: they will have 17 ft. of water. If you publish any review of these Reports I shall be much obliged to you for a copy. I must also thank you for the Report of the Canada Gold field, and Devonian plants.

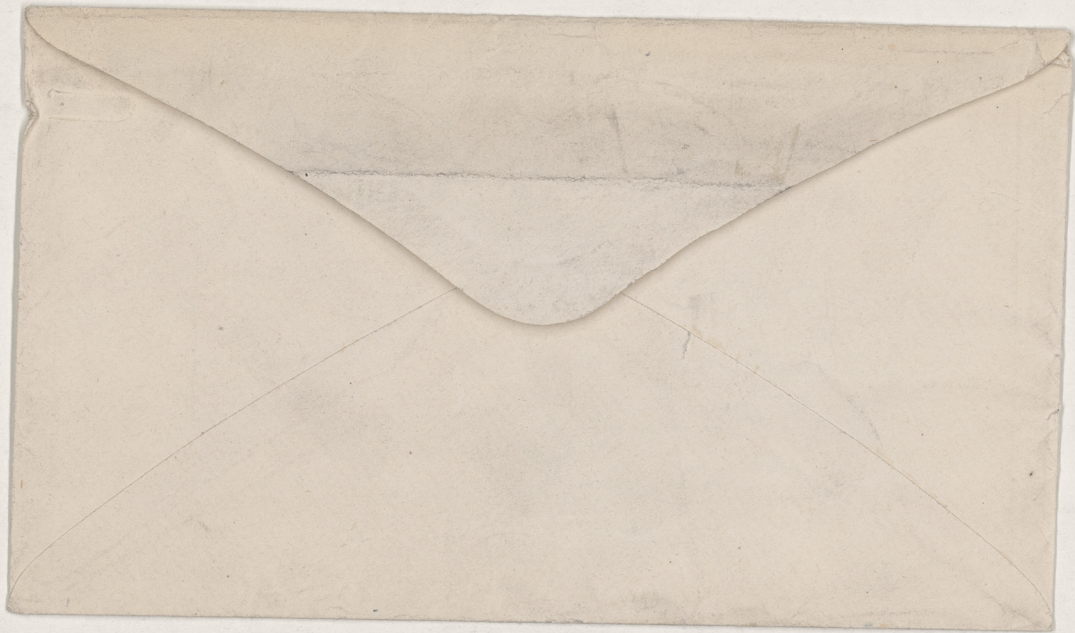
Dr. Dawson
McGill College

Yours very truly
Henry Poole

With Box specimens

D^r Dawson
McGill College

H. Pook's plan & Report
Ira Awa Miro



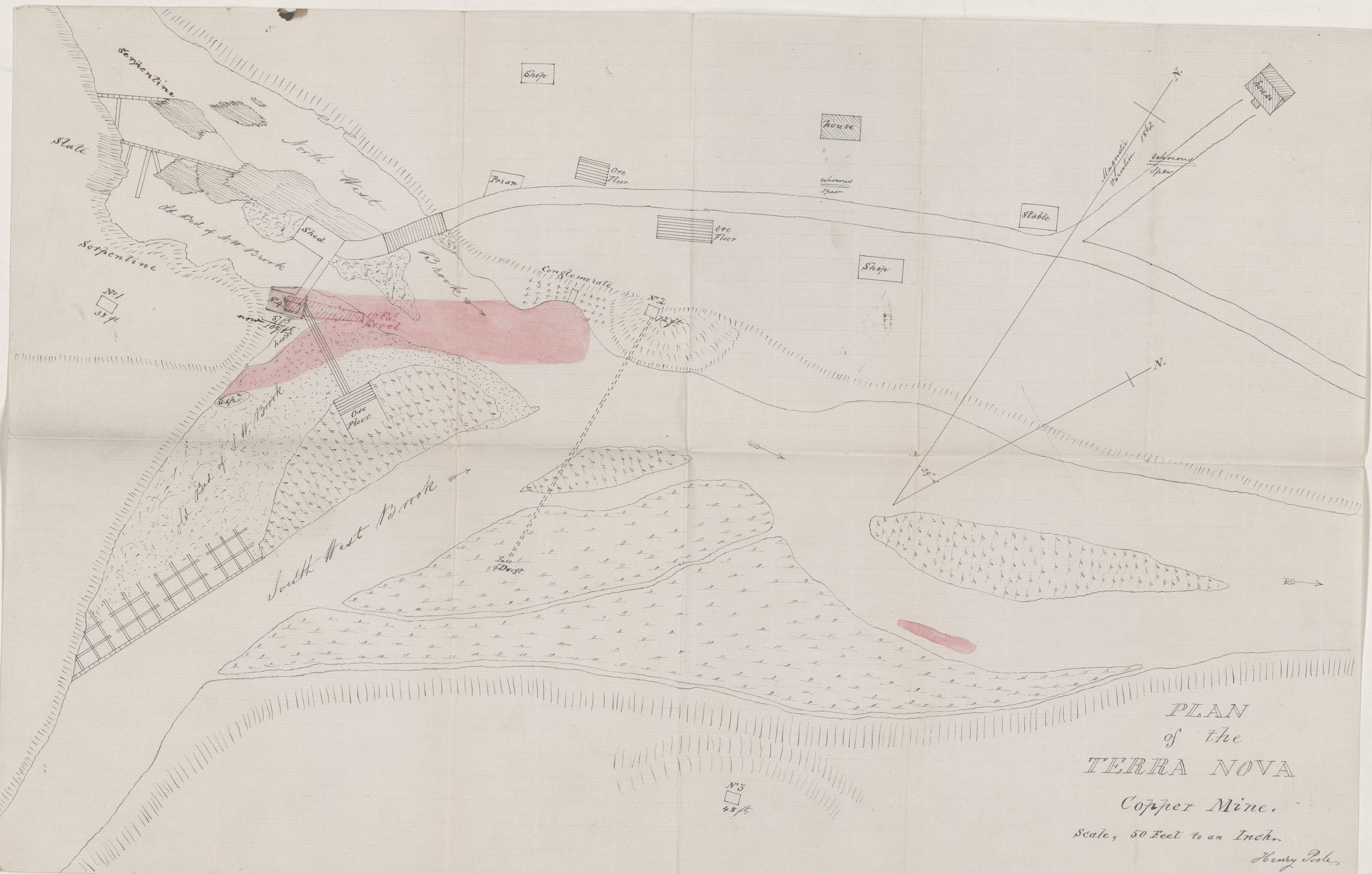
Texas-Nova Ore
Assays of Ore from the surface
shipped to Boston to be done
Arranged net 1 5/10 per Cent

15 Tons of Ore from
depth of 10 fathoms
Called Nov. Ore sold at New York
Yielded by Wet process 4%
1 Ton. No 2 or 2 " do 2%

An Assay Sample sent by
Mr. B. H. from 10 fathoms level
Assayed in N.Y. by Wet process
Sample No 1. Copper 3.3%
Sulphur 41.5%

Sample No 2. Copper 3.4%
Sulphur 41.5%

Assays of Ore from 10 fathoms
sent to Bristol England
Yielded about 4%



PLAN
of the
TERRA NOVA

Copper Mine.

Scale, 50 Feet to an Inch.

Henry Poole