

Aug. 14. 1872.

Francis Jelis Esq. C.E.

Sir

Having been requested to examine deposits of iron ore at Brookfield near Truro, & at Blanchard's Settlement on the East River of Pictou; I hereby leave to present the following statements concerning them.

Iron ore at Brookfield. The ore occurs on the farm of Mrs Nelson about 2½ miles from Brookfield Station on the Nova Scotia Railway. A Tram-road, or branch railway to the ore might easily be constructed & following the valley of the "Brookfield Brook".

The ore is found on the North side of a gully ^{which runs} ~~running~~ up from the main valley of the brook just east of ~~near~~ Mrs Nelson's house. It is chiefly in loose masses ranging from quite small fragments to blocks several feet in diameter, & is scattered over an area several hundred yards long. The largest block observed measured four feet in length. These stone-stones are angular, & not water worn & cannot be far from the outcrop of the lode.

A short distance West from Nelsons house a small ridge running nearly East & West shows the outcrop of a lode composed of Barytes & limonite in parallel strings. The average proportions being about half of each mineral.

This lode dips steeply into the hill to the North East.

It is of considerable thickness but much covered with debris & the walls are not now visible.

This is very probably the outcrop of an inferior part of the lode which has yielded the richer shode-stones found further to the East

The enclosing rock of the deposit is a hard ferruginous laminated sandstone, but is visible only in a few places from the thickness of the drift material with which the district is covered

The shode-stones of good are nearly confined to the slope of the hill on the North side of the gully. Some appear on the crest & a few are found in the fields to the North. This seems to indicate the close proximity of the lode & that it might be discovered by trenching the hill at a small expense.

I was informed that many of the best samples of ore had been removed both as mineralogical specimens & for practical trials. At one time six barrels were collected & sent to England. Mr Nelson has better specimens in his possession than are now to be found on the ground.

The ore as seen in the loose pieces is a nearly pure limonite, generally compact & amorphous, but in part in radiating masses with botryoidal & stalactitic forms. Nearly all the fragments show barytes, but generally in very small quantity & in well characterized crystals.

Iron ore at Blanchard Settlement East River
Pictou County.

The deposit occurs as a bed in hard altered sandstones & slates of Upper Silurian age.

The ore is oolitic, composed of specular iron with some silicious matter & very compact.

The outcrop ^{of the bed can} ~~be~~ be clearly traced for a distance of 1069 feet from the old barn opposite James Mc'Donalds', with a general course of $N. 27^{\circ} E.$ It occurs again at John Mc'Donalds' house bearing $S 37^{\circ} W$ from the barn & 924 feet distant. The space between the exposure at the barn, & this most southern exposure is thickly covered with alluvial matter & no rock is visible, but the ore is no doubt continuous.

The ~~deposit~~ ^{deposit} can thus be ~~traced~~ ^{followed} with a pretty uniform course of outcrop for at least 2000 feet, & would doubtless be discovered both south & north of its present termination or removal of the surface material.

The precise thickness of the bed of ore is difficult to determine, & it seems subject to considerable ^{variation.} ~~variation.~~ At one place the outcrop is nearly 100 feet in breadth, including however some intercalated layers of grey rock. It seems probable that an average thickness of nearly 40 feet of good ore could be counted on. Many thousand tons ~~could~~ ^{might} be extracted by simple quarrying, & such operations would soon determine the best part of the deposit on which to commence regular mining.

The average direction of ~~the~~ dip of the ore & enclosing rocks S 60° E at an angle of about 60°. The area is high & could ~~be~~ for a long time be cleared of water by natural drainage.

Though uniform in direction on the whole, there are several small faults which have thrown short lengths of the ore more or less out of line. About $\frac{1}{2}$ mile N.E. from the furthest North exposure of the bed on on the regular line of strike, the ore is found in place in the woods. This portion has evidently been thrown back ^{to the E} ~~out of line~~ by a more considerable dislocation. Its extent in length or thickness cannot at present be determined on account of the thick growth of trees & moss, but the ore presents the same appearance & is quite equal in quality to that from other parts of the area.

I have caused several trenches & small openings to be made on different parts of the outcrop & the ore everywhere ~~exhibits~~^{exhibits} a uniform & very good appearance. In some places fossil shells occur in the mass of the ore still preserving their calcareous nature.

Aug. 14. 1872.

Amesbury by C.S.

20

Having been requested to examine
deposits of iron ore at Brookfield near
St. Albans and settlement on the East River
of Lake, I have to present the following
statements concerning them.

Iron ore at Brookfield. It occurs on
the farm of Mr. Nelson about 2 1/2 miles from
Brookfield station on the New York Railway.
A stream bed or sand railway to the ore
might easily be constructed following the valley
of the "Brookfield Brook".
It is a found on the West side of a hill
about 1/2 mile up from the lower valley of the brook
partly in the Nelson house. It is chiefly in
large masses composed of fine quartz
fragments to black sand but in disintegrated
is scattered over an area several hundred
yards long. The largest lumps observed measured
four feet in length. These lumps - there are
perhaps 2 or 3 - are water worn & consist of fine
from the outcrop of the bed.

A short distance West from Nelson house
 a small ridge running West East West
 shows the outcrop of a lime composed of Bangs
 & limestone in parallel things. The average proportion
 being about half of each mineral.
 This ridge dips West to the West East
 It is of considerable thickness but much covered
 with debris & the walls are not very visible.
 This is very probably the outcrop of an exposure
 part of the hill which has yielded the other
 strata found further to the East

The underlying rock of the deposit is a hard granular
 brownish sandstone, but is much cut up in
 few places from the thickness of the drift material
 with which the district is covered.
 The shale - stone of the outcrop is very compact &
 the slope of the hill on the West side of the hill
 some exposure on the crest. A few are found on
 the hills to the West. This shows a westward
 the thin bedding of the hill that it might be
 composed of thinning the hill at a small exposure
 I was surprised that many of the hill
 samples of the hill were common but as conglomerates
 specimens of the great at trials. At one time the
 fossils were collected. I think I found. The
 Nelson has better specimens in his possession than
 are now to be found in the present

The one seen in the lower part is a
very fine limestone, finally compact &
amorphous, but in part in radiating
with vertical tabular forms. Near the
top of the group there is a layer of
small fossils, but with characteristic
forms.

Lower part of Blackfoot
Section

The deposit occurs as a bed in part at the
base of the Blackfoot. It is a
thin, shaly, silty, sandy limestone
with some thin shaly partings. It is
found in the lower part of the Blackfoot,
a few feet above the base. It occurs
at the base of the Blackfoot, having
a thickness of 200 feet. The upper part
of the deposit is a thick, coarse
limestone. The rock is a reddish
color. It is a hard limestone.
The ~~rock~~ ^{bed} is ~~thin~~ ^{very} ~~shaly~~ ^{fine} with a ~~fine~~ ^{very} ~~uniform~~ ^{uniform}
course of outcrop for at least 200 feet. It
is a ~~thin~~ ^{very} ~~shaly~~ ^{fine} limestone. It is
part of the present ~~formation~~ ^{formation} in ~~the~~ ^{the}
of the surface material.

The precise thickness of the bed of ore is difficult to determine, but seems subject to considerable variation. It was found to average about 100 feet in width, including narrow zones intercalated layers of gray rock. It seems probable that an average thickness of nearly 40 feet of good ore could be counted on many thousands of acres. It is estimated by simple geometry, that the ore would be determined the best part of the deposit as which to commence regular mining.

The average thickness of the ore is about 50° E. The ore is up to 7 feet thick for a long time. It is classed of value by natural drainage.

Sharp uniform in direction on the whole, the ore several small faults which have been. Short length of the ore mass as far as it goes. About 2 miles N.E. from the faulted West exposure of the bed on the regular line of strike, there is found in place in the ore. This feature has existed for some time but is not of the same considerable thickness. It is situated in length or thickness of the ore. It is determined on account of the thickness of the ore, but the ore is found to be of some appearance as a fault line in fact. It that from other parts of the area.

Report a deposit of
iron ore at Brookfield
near Thors; + Blackhawk
Settlement on East River
at Pickens for
Francis Giles, C.S.

Aug/72

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