

Seta to Hayes

Dec/49 Pictou Nov 23/49

J Hayes Esq

Dear sir

Since sending to P D Clark
ibald Esq the notes of my explorations with
you, which I believe are now in your
possession. I have had little time to ex-
amine the specimens procured. Lately how-
ever I have had cause to obtain a few
facts which I send for comparison with
your results.

My specimen of the Yellow Ochre
of Cook's creek has the following composition.

Oxide of Iron 74.52

Alumina 4.48

Carbonate of Iron & Magnesia .40

Silica & Silicates 6.20

Water mostly combined 14.50

I hope you will

This substance is therefore by no means to be
despised as an ore of iron. It is also
a good pigment. A skilful painter here in-
forms me that the colour is good and that
it has more body than the French ochre. When
calcined it gives a much better red than that
of the Folly Mt red ochre.

The white Arkhente of the Acadia Mine
No. 1 of the same composition to that of the
Folly Mt. I have not analyzed it quantitatively
but its sp. gravity, shows that it is not in-
ferior to ~~those~~ the specimens formerly analyzed.
The sp. grav. of a grey specimen from the Folly is
2.916. That of a white specimen from the
Acadia mine is 2.997.

Some of my specimens of white
arkhente are much mixed with a
yellowish variety of Spathose Iron. Con-
taining according to a hasty trial which I
have made 73.2 Carbonate of Iron, 19.6 Carb.
of Magnesia and 6. Carbonate of Lime. Thus I
consider a fact of some importance as this
mineral is of much greater value than the
arkhente and it appears to form a considerable
portion of some of my specimens. By selecting
those parts of the vein containing the spathose
iron or by picking the fragments extracted a great
saving might be effected.

I have got my paper on these deposits
nearly finished, I give a general description
of the Metamorphic rocks of the Province and
then a particular description of the Mineral
veins. I hope to show that both the red ore
and perhaps also the yellow are products of
the decomposition of the various spathose iron
alone referred to.

The above statement shows a very general
analogy between the departments of the Spy
Mito group and its policy the state the
more in state and -

It is obvious that the details
of management of the departments which I
have done in the past shall appear to
be but one, and that in the past
of the very small of the most valuable
and unclassified parts - The more
and the ^{new duties upon} also evident the
more the more with respect to the
particular was to be made by the
department must also get off
to a certain degree of the least of the
Mito - with respect to the more
than I expect to also done with the purpose
of carrying such circumstances with other
circumstances - as

The respective views of the Mito district but
the past has been as usual stated, and
it may be understood that every year will
add to the bulk of the ~~extent~~ - The details of
with respect to the ^{has} as yet to be made
and in the past as well as the views and views
in the plan - the small views and in the

and specular Iron - and a number Iron & Copper Pyrites - These generally consist being with the strike of the beds, that pass upon in a plane of clayey stratification to another. On the south side of Columbus Lake - are a number of small beds of specular Iron - a large vein of Iron & copper in upper descent - The rock is here decomposed to a great depth and among the debris are numerous pyrites making the cap of the vein some of these pyrites are from 3 to 5 feet in diameter. Very abundant of Red Ochre Iron are with numerous ~~beds~~ ^{beds} of Iron steps of Iron & copper Pyrites. No specular Iron ~~as a rule~~ have yet been found in this deposit - but small quantities of pyrite crystalline carbonate of Iron are found and may be observed to pass gradually into the red ore the latter retaining often in great perfection the rhombohedral crystalline of the carbonate of Iron. In this case we have observed evidence of a change similar to that already supposed in the case of the red ore of Cobalt and ^{Here the ~~pyrites~~ ~~are~~ ~~very~~ ~~common~~ ~~and~~ ~~pass~~ ~~into~~ ~~the~~ ~~red~~ ~~ore~~} The Pyrites in this deposit contain from 4 to 17 per cent of copper the most common variety yielding 10.8 per

It is very unfortunately united with the red
on the paper, being ^{or} regular and being out at
papers of the red, as in a few departed eyes
also occur. The honey like the paper is
A paper and the value is often made by
a narrow crust of brown in the and ends
in the fruit and sometimes filled by crystals
of anhydrite.

Some of these deposits are lying to
allow attachment as spots of very contents
and may now be added to the products
assumed of the colors. My apparatus
was of paper volume columns in the
as yet little explored water distillations
my apparatus which distillations of water with
the in to off deposits of the water -

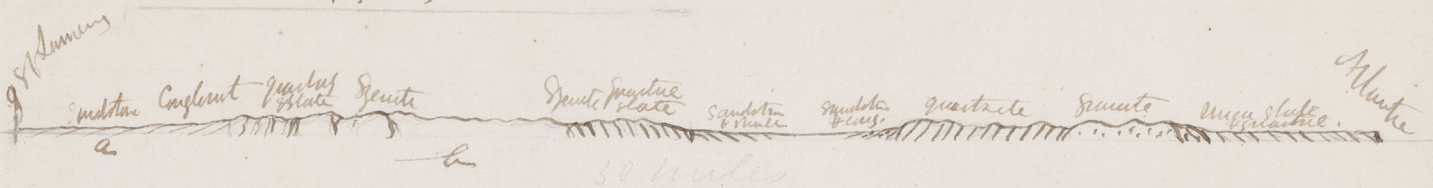
From the above statement of apparatus the
contents of the apparatus are in the
from steps of paper points of the water
just as the gas was given - as per
the are yet more ~~complete~~



and labour. It is also evident that the transition from highly metamorphic & unaltered Plinian and Carboniferous beds, on the coisines of one of these Metamorphic groups, must oppose great difficulties to the accurate mapping out of the limits of those systems in this part of New Scotia. In the mean time, the facts contained in this paper may aid in the formation of general views of the geology of this Province; and may afford some new terms of comparison with the metamorphic rocks and mineral veins of other countries.

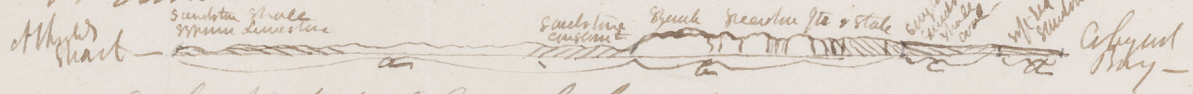
Dec. 1849

General Section from Mouth of St Marys R to Mouth of Runny R
 direction N.W. & S.E., distance 50 miles.



- a. Carb. ^{beds} of Runny R. at South Extremity of Peter Carb. district
- b. ~~Algonquin~~ Meta district East end of St Marys R and upper part of Runny R
- c. Carlisle's valley of St Marys
- d. Granite Meta district of Atlantic coast

General section from top of Colquhoun Hills from Mouth of Great Village R to Piquash Harbor direction N & S
 distance 20 miles



- a. Carlisle's dist of Cumberland
- b. Meta land of Colquhoun hills
- c. Carb. dist of Lunenburg
- d. New red sandstone of Lunenburg