

A geologist however much diverted to his more immediate objects, and however intently his eyes and thoughts may be directed downwards into the earth, is not, any more than other travellers, blind to the interesting objects of art or nature that may be present on the surface. Indeed his peculiar pursuits in many ways direct his attention to the great general features of the country which he may be exploring; and also afford him the means of elucidating the natural causes to which its configuration and scenery and the character and pursuits of its people may be attributable.

It is not unusual with geological surveyors to make long digressions into these general topics, in their official reports. This I have always thought to be improper. It tends to bury the especial & economical object of a survey amid a mass of irrelevant or only very slightly connected matter, and gives rise to an impression that a show of elaborateness and finish without real utility has been the object of the reporter. Yet these incidental matters are not altogether worthless. They may include much interesting general infor-

forbation or interesting illustration of
Scientific principles and their publica-
tion may tend to make distant little
known beyond their immediate vicinity
objects of more extended interest. In
the present condition of the Province all
these results must be valuable; more espe-
cially the last of them. The ~~west~~ inhabi-
tants of the Western parts of Nova Scotia
know little of those of the East, and the
East knows little of the West; hence there
is a want of sympathy & union a want
of harmony and a fancied difference of
interest very injurious to the interests of
the Country. Such reasons as these
and not anything peculiarly remarkable
in the district itself have induced me
to spend a little time in preparing for
publication the miscellaneous items of in-
formation furnished by my notes on the
~~Shale district of Cape~~ part of Cape Breton
which I was employed to examine in the
Summer of 1848. I shall also take the
opportunity of giving occasional notices
of the useful minerals of the district ~~as~~
for the benefit of those who may
not have access to my report

Caribou Cove

I arrived at the Strait of Causeau on the commencement of the violent rains which closed the warm weather of last summer at least in the Eastern part of the Province. After a day's drive amid torrents of rain I was hospitably received by J. G. McKeen Esq of Plaster Cove and here ~~to~~ I was detained for three days by incessant wet weather, during which however I managed to collect a little information respecting the ^{structure} geology of the neighbourhood of Plaster Cove.

At the close of the storm I found that all the difficulties of swollen streams and broken bridges awaited me. Fortunately however there were of small moment in the first part of my work the exploration of the Coast sections of Caribou Cove.

Having procured a boat and two men, ~~as soon as the weather permitted~~ and a supply of digging tools and provisions I set out as soon as the weather permitted for Caribou or as it is sometimes and I believe more properly called Caribacou Cove. On the way we landed at several places and noted down the arrangement of the various beds of rock seen on the South side of the Strait of Causeau. These all belong to the Lower or Older division.

of the Carboniferous system. They very much resemble the strata of corresponding age in the Eastern part of Scotland and present few points of interest to a geologist and no useful minerals except some coarse sandstones and an unimportant bed of limestone, except in so far as their arrangement gives information respecting the general structure of the coal-field to which they belong. On arriving at Bear Island point, at the southern extremity of the strait we found that in the open bay there was still a strong breeze and heavy sea, and after an ineffectual struggle against wind & wave my boatmen found it impossible to round the headland. We therefore walked across the narrow point to Fisherman's Cove a pretty little inlet indentation in the extremity of the projecting land which separates the strait from Carbon bay. Here we found a fisherman the head of the only family resident in the little Cove who told us that we could not possibly take our boat round the point at present but advised us to drag it over a low part of the point into the Cove. He pointed out to us a ~~whaling boat~~ ^{just} a whale-boat just entering the Cove which he told us was bound to Carbon but had been detained three days and was just

returning from an unsuccessful attempt to pass Flat head the only intervening point. We waited till the whale-boat reached the shore and then with the aid of two men who were in it carried our boat across the point and launched it in the quiet waters of the Cove. Finding the distance to Caribou Cove to be only three miles we left part of our luggage and proceeded on foot intending to send for the boat when the weather should become moderate. In this we were joined by our new acquaintance of the whale boat, and after a disagreeable scramble ~~over~~ along a wet and overgrown foot path, and experiencing some difficulty in crossing the mouth of a large brook we arrived in the better part of time to have a preliminary glance at some of the most important points on the shores of the Cove before sunset.

In a geological point of view I was much disappointed by the appearance of Caribou Cove. The greater part of its shores presented only low banks of boulder clay, the debris of the rocks further inland. The coal measures were thus in great part concealed and the rocks that appeared showed in their vertical or shattered strata that great difficulties might be expected

In attempting to understand their arrangement, The bed of coal of which I had heard so much was buried under the Boulder clay and after having its outcrop dissected I found that its contents were not likely to be of much value. So soon as I had ascertained these facts & and that no other coal seam appeared in the vicinity I determined to spend at Cariz on some no more time than was absolutely necessary and to search in the other parts of the coal-field for more promising localities.

The cause which renders the coal of Caribou some of little value is not the frequent ~~in local~~ occurrence. The vegetable matter of which coal is composed has been accumulated in situations where beds of sand silt and clay have been deposited both prior & subsequently to the vegetable accumulations. These localities have been the swamps lakes or estuaries of a part period of the earth's history. It thus naturally happens that coal contains a ~~very~~ proportion more or less large of earthy matter and its value of course in great part depends on the degree in which it may in this way be adulterated. A good variety of coal may contain as little as 1 per cent of ash or earthy matter and from this there is a gradual passage through coals of various

degrees of purity down to Bituminous Shale in which the earthy matter greatly exceeds the coal the latter being only in sufficient quantity to enable the mineral to flame and become red. By persons unacquainted with the true characters of Coal bituminous shale is often mistaken for it. The bed of Carbon Cove contains a very intimate mixture of layers of coal & bituminous shale, and as might be expected from such an association the coal itself is very impure. Although however the contents of this bed are not of sufficiently good quality for a foreign market they might be used in the vicinity of the bed. In some Coal districts in Great Britain the poorer people use bituminous shale for fuel and it is also quarried for this purpose. In like manner, the coal & shale of Carbon would form an indifferent article of domestic use, and would perhaps be worth the expense of extraction in a cheap way from the bed. It will not however be found to be adapted to the use of smiths and this must be a great drawback ~~to its~~ from its use in the country.

According to all generally received views of the origin of coal its beds must when they were formed have been in a horizontal

position or nearly so. At Carbon cone however the bed of coal and the shales and sandstones associated with it are almost precisely vertical. That they have not always been so is testified by the fossils remains which they contain. In the shales we find scattered over the surfaces of many layers fragments of plants just as they would be deposited on a muddy shore and on the sandstones there are ~~rust~~ worm tracks, the impressions made by aquatic worms on the surfaces of soft beds of sand now indurated into hard stone and standing upon their edges. The position of these beds is thus a proof of the great disturbances which they have experienced since the period of their deposition. Unequal elevations or depressions and consequent flexures and fractures of the beds are the agencies by which this and other similar disturbances must in general be referred.

The settlement of Carbon extends pretty continuously around the bottom of the cone and stretches in a straggling manner towards the mouth of Inhabitant R. Its people are of various origin but are almost exclusively fishermen agriculture being

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very little attended to. The soil near the shore though rather heavy is of good quality but in the rear of the lots it becomes stony rising up to a large tract of "barrens". On the surface of which fragments of the hard flint and grits associated with the Coal Measures are thickly scattered sometimes to the almost entire exclusion of soil. At the time of my visit many parts of these barrens were ~~was~~ covered by the Sheep berry (Viburnum Lentago) loaded with its tartish berries little valued by man but affording food to many wild animals. In ~~at~~ other places there were thickets of young trees and some spots in which ~~there was~~ a white moss or lichen perhaps covered the hard stones. This barren tract was formerly covered with a luxuriant forest of pine which can thrive even in the poorest soils; but more than twenty years ago it was devastated by fires which destroyed an immense quantity of valuable timber leaving only a very scanty supply for the wants of the present settlers.

I spent the greater part of a day in traversing these barrens in search of a bed of coal said to have been seen on the bank of a stream named

Little River. My guide however proved unable to point out the precise locality and the swollen state of the stream prevented me from exploring its banks in a satisfactory manner. The only alleviation to this disappointment was that I ascertained that the place of which we were in search was more accessible from the opposite side or from the road leading from Ship Harbour to Inhabitant's R. I determined therefore ~~to make its exploration a subsequent part of my~~ examine it when on my way to the exploration of the Cather River but as the place is more nearly connected with Caribou Cove I may notice the results of this second visit here.

Little River is a small stream issuing from two tame though pretty little lakes fed by tributary brooks. The country at its head is low and slightly undulating like that near its mouth, and its banks are generally low & uninteresting though with here and there some of those pretty spots which occur on every rivulet. On my second visit ~~to~~ to the banks of the stream I availed myself of the guidance of an old soldier

settled near the river and who
 has displayed his Mechanical
 Skill in the Construction of a
 windmill which is the most
 conspicuous object on the road
 between Stuffs Harbour and the
 Inhabitant River. This old
 man I found was the dis-
 coverer of the coal of which
 I had heard and he had
 found it under circumstances
 which might have baffled men
 of much greater pretensions. He
 saw pieces of coal in the bed
 of the river and attempting to trace
 them to their source found that
 they ceased at a spot where a
 dam of drift logs lay across the
 stream and had caused it to
 cut more deeply than usual into
 its bed. Here he concluded the
 coal must be but as nothing
 appeared in the low clay bank
 he searched for it in the strata
 of intervale ~~near the~~ bordering the
 river and discovered it in the
 bottom of a little trench cut by the
 stream during a freshet. With
 Mr Phelps of the windmill and
 a man to assist us in digging
 had another tramp over the Car-
 bon

ton barrels. The approach to Little R. in this direction however proved much more agreeable than that from Caribou cone. On reaching the spot we found only a hole filled with water and mud; but by the use of a wooden scoop which my guide said he had learned to use when working at canals in England the "mine" was speedily drained and I had the satisfaction of seeing the best bed of coal that I had found in the district. After examining the coal and its accompaniments as far as time would permit we loaded ourselves with the mineral and returned to the road well pleased with the day's work. I was obliged however to spend two more days in this neighbourhood before leaving the district.

The principal bed of coal ~~that I saw at Little R.~~ seen at Little R. is not of large dimensions, being only four feet in thickness and the measures are like those of Caribou cone very much disturbed the coal itself being in a vertical position. The coal is of very beautiful appearance

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and of good quality, resembling in many respects the best Albion mine's coal. A particular account of its composition and qualities will be found in my report. Though not quite so acceptable as if on the shore of the Bay these coal-measures are at so small a distance from the harbours of Carbon Cove & R. R. that their produce could be shipped with very little expense and there can be no doubt that notwithstanding the difficulties likely to be connected with their vertical position they must ultimately be worked. The coal of Little River though scarcely equal as a fuel for domestic fires to that of Sydney, will be found much superior to that for Smith's use and may be expected to bring a price equal to that of Pictou coal. The profit or loss

* The perpendicular position of the beds is by no means an insurmountable obstacle. It merely requires a mode of working different from that usually employed in coal mines. Vertical beds are however more likely to be affected by faults & fractures than those which approach the horizontal position.

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That might result from any attempt to
open these measures cannot in present
circumstances be estimated with any de-
gree of accuracy; and would indeed de-
pend very much on the prudence and
skill of the management. I would
however recommend the subject to the
attention of the people of Arichat who
as well as the inhabitants of the district
itself would be ~~to~~ benefited by the opening
of these ~~mines~~ mines, and some of whom
are I believe the proprietors of the ground
in which the coal occurs,

Among this district is apt to
be perplexed by the variety of names
given to the same place. Little R.
has in some charts the name ~~as humble~~ ^{as humble} ~~the name~~
appellation of Durham inlet and
in others it is called Moose Creek.
Carbon Cove is otherwise written Carab-
acon and is also marked in
charts Sea Coal Bay. Carabacon
appears to be its original name and
I would have preferred it were it
not that I found that the inhabi-
tants of the district probably for
the sake of euphony generally prefer
the shorter appellation. I found one
person who maintained that Caribon
is the original name and that Carab-
acon is merely an abbreviation the final
al

"Con" being according to him a contraction for Cone. Several other cases of this kind occur in the district, originating usually in the circumstance that Mariners and Marine Surveyors have bestowed names irrespective of those of the aborigines & early settlers. Any one who would make a selection ~~from~~ of the best of these names and endeavor to introduce them into general use would confer a permanent benefit on many such places as good old names are often supplanted by others vastly inferior ~~to them or~~

Like most other bays Carbon Cone is in fine weather not deficient in quiet beauty. It greatly wants however some elevated ground as there is not even a distant hill to relieve the monotony of its rather level shores. The same remark applies to the whole Bay of Inhabitants of which Carbon Cone forms the western part. The Eastern part of the Bay is however diversified by several low wooded islands and the estuary of the R. M. Inhabitants has a fine appearance when compared with most other parts of the Coast. The appearance of the Country bordering the shore suffers much from the want of attention to agriculture.

improvement. The more adventurous
life of the fisherman and the more
speedy return for his labour have
stronger attractions for the young men
of these coasts and prevent them from
directing their attention to the culti-
vation of the soil. Hence a traveller far
removed from the agricultural districts of
Nova Scotia is surprised to see large
clearings without fields of grain gardens or
orchards, and to find settlers of 10 or
20 years' standing with scarcely any ground
under tillage. Connected with the small
advancement of agriculture is the want
of roads. In summer the water is the
great thoroughfare and it is especially ne-
cessary to ~~supply~~ ^{serve} this purpose
to a fishing population in a country whose
principal town is inland. The winter
ice tracks deposited here of the ap-
pearance "sleep roads" are sufficient
when the snow is on the ground. It is
but a short time since this was the con-
dition of the whole of Cape Breton and
the character of its country still bears
testimony to the comparative difficulty of
land communication. Though Carleton
Place and the Bay of Inhabitants are at
present destitute of good roads I was glad
to learn that a new road had been pro-
posed which will pass through these settlements and

ing from the ferry at Causeway to Ariz
Chat & Sydney. This road is an illus-
tration though perhaps not the best that
might be found in the Southern part
of C. Breton of the rule which appears
to be adopted followed here that a line of
road shall be surveyed in a scientific
manner before operations are com-
menced on it. This is an admirable
practice which will ultimately prevent
the waste of great sums of money
which would otherwise be expended in
changing & improving the line. And it
is well deserving of imitation in other
parts of the Province. Unfortunately
however on the roads thus well plan-
ned the finish is by no means equal
to the design; a consequence of the small
amount of money expended in their forma-
tion though I fear this is much af-
fected by the practice of "eating" the
road money beforehand, introduced the
~~late~~ deficient crops of late years, and
also by the misbehaviour of the contractors
and workmen.

The bridge crossing the river had
been swept away by the freshets of August
and when I visited this place we were
obliged to have our horse & vehicle ferried
over the stream - whose banks bore many
evidences of the destruction wrought by the

pass through these settlements and connect them with Ship Harbour on the one hand and the present main road to Archat on the other. Though here as in many other parts of the province a survey may give only a distant prospect of a practicable highway, it is pleasant to think that at least in a few years the inhabitants of this comparatively neglected district will have regular means of intercourse with the great world bringing them the news of the day and more frequent visits of the schoolmaster and the preacher - as well as affording a stimulus to agricultural improvement.

The Inhabitant R. is the principal stream of the district and is in many respects a fine river though much inferior in magnitude to many of the rivers of Nova Scotia proper. Its mouth has a much better appearance than the other parts of the Bay and its estuary is a long and winding highway navigable for small vessels to the distance of miles above its mouth.

Below the head of the highway the river is crossed by the main road leading

waters in the ~~the~~ intervals farther up the
 the river. On the Eastern side of the river
 a road leads upward to its sources and
 thence across the country to the western side
 of the island. It is a good line but in
 a very incomplete state and at this
 time nearly all the small bridges cross-
 ing the tributary brooks having been de-
 stroyed or injured it was scarcely practicable
 above the bridge the river flows
 through a fine alluvial valley in many
 parts well cultivated and yielding abund-
 ant crops. A pretty agricultural settlement
 extends along the banks of the river and
 the upland soil seems everywhere good
 though the crops were somewhat later than
 in N. Scotia. The valley of the river
 becomes more beautiful as we ascend
 it and the principal sources of the stream
 are in fine wooded hills which after
 the barrenness of the coast scenery no
 doubt appeared much more beautiful
 than they really are. They form part
 of a broad band of hilly country which
 is the back-line of the Western half
 of Cape Breton and which at this place
 separates the sources of the Inhabitants
 from the plains of ~~Port Hood & other~~
~~Long point & Port Hood.~~
 This band of hills whenever I had an
 opportunity of examining it consists of

Hearty Trap compact felspar and other
rocks known to be of ~~that class~~ like
the ~~the~~ lavas of modern volcanoes ~~are~~
the products of igneous fusion, with baked
and altered sedimentary strata. It is to
the outpouring of these ~~ancient~~ ancient mas-
ses of melted rock and the accompanying
disturbance & elevation of rocks of aqueous
origin that these and most other hills &
mountains are due.

Rocks of the ~~Carboniferous~~ Carboniferous
system occupy the whole country in the Hearty
of the Inhabitant A, but ~~it is only~~ no coal
has been discovered nearer its mouth than
nine miles above the bridge. Here however
it was confidently stated that a large deposit
of coal occurred. In this case as in
many others I found the reports became
less confident and favourable as I ap-
proached the locality ~~and~~ and actual
inspection showed them to have a very narrow
foundation in fact. I was pleased
to see at this place coal measure, bed
& which had been but little disturbed, being
inclined at an angle of only 10° ~~but~~ and
it is not improbable that ~~when~~ when
more fully explored they may be found
to contain useful beds of coal. At
present however the only indication of
that mineral acceptable to the geologist
is a thick bed of black shale in-
cluding a thin and valueless seam

of impure coal.

Though fed by many small brooks the *Wharfedale* has only one large branch, the "North West arm". This is a pretty clear stream taking its rise in a small lake near the start of Curseum and joining the main river ^{at} a short distance above the bridge. This stream is interesting to a geologist as showing in its upper part an excellent section of the lower Carboniferous rocks which here consist of a great series of beds of sandstone and shale of various colours and granites with beds of puddingstone or conglomerate and limestone. In one part of its banks I found a curious little deposit of peat, underlying a thick bed of clay with large stones & boulders similar to that which covers many parts of this Province. This bed of peat is much hardened by pressure and the roots and branches of trees included in it and which are in good preservation are much flattened from the same cause. The occurrence of peat in this manner seems to have occurred in many cases. Curried reports that coal had been

found on this stream. It is however
a comparatively recent deposit and
of too small extent to be of economical
importance. It affords however no
bad illustration of the origin of coal
since under the pressure of about 20
feet of clay this bed of vegetable matter
has made at least one step to-
wards conversion into a coal bed.

Between A Inholes and the others
 of St Peter - The camp has the same
 views with the other parts of the district
 of low and undulating coast - and traces
 of low lands with the edges of beach
 marbles here other fragments of
 murex - rather extensive patches of
 fertile soil - with flint & broken shells
 murex - are the principal features which
 strike the eye in the sand.

The others of St Peter the name
 correctly but what alone marks the
 two sides of the singular island - Must
 after the murex comes near the
 Inholes by planes, almost the whole
 of every traveler. The clear notes of
 the Brans in Lake & of St Peter Bay
 are here only objects distant for
 ever at, and but as seen for the
 spot are not immediately sheets of water -
 But the great object in the coast here
 is the early summer morning from the South
 of the others - when purple clouds press
 upon & in curved currents are seen
 up winding also the others there & land
 camp and great holes into the rest of the

Bay. On the summit of this hill is
the remains of an old French Post
occupied during the Policy days of James
Adams. A American celebration and
from the spot and other parts on the summit
they command the view of the North and South
with no parents. The nucleus of this
hill is a mass of granite dipping from
that of Penn in containing a larger portion
of the granitic rock of Penn which gives it
great strength and causes it to act shy
with the surface. With this is a porous a dark
colored top ~~and~~ ^{also an} igneous rock and beds
of dark shale & light grey limestone probably
belonging to the lower part of the Cambrian
system but below and beneath of which
the Penn has a series of shaly cherts and
the latter apparently to a crystalline limestone
a marble. This indicates however is that
the summit of an ancient volcano like
where with rocks have been found exposed
from the interior of the Earth at some period subsequent
to the commencement of each series.

This is the nucleus is one of the principal
features of E. Breton. When I was the the first for
the Sun vessel Galvane was dipping their boats
across means of view. a timber & carbonaceous

proof what reminds me of the Canal so long
ago pirates — Perhaps the time when such a
military vessel be remembered has not arrived
but it is evident that a city professing such agree-
entime capitals and profits also to great immense
riches as the shores of the Bay. In must begin at
no very distant period when some small party for
came into the ocean. This people however
that the Canal establishments located here
may ultimately expand into a little Cape
Belmonte coast. Capital of only is an
enterprise for the productions of the great lake
and the sea coast. It has certainly some
ground not favorable for achieving such a
destiny, Large Portages than the one
the wharves of S. P. are not sufficient in
Cape Breton, in connection with the acquisition
habits of the People. When at R. G. G. G.
I saw a party who had brought a boat
across from the west Bay miles distant and
intended to descend the River with a
cargo of barrels for the supply of the
fishermen on the coast.

The Strait of Cansuam is a great natural canal presenting many points of interest in its origin scenery and uses. ~~The first of these must at once solicit the investigation of a geologist and~~ It is probable that few intelligent persons have sailed through the Strait without some hypothesis as to its causes having suggested itself to their minds. Has this long narrow trench been produced by a violent bending around of the land? or has it been worn by the ceaseless action of running water? — there are popular inquiries in relation to such breaks in the continuity of countries and they can be satisfactorily answered only on geological principles. Let us examine with this object the structure of its shores. At the Northern end of the Strait we find sloping shores low on the C Breton side and rather higher on that of Nova Scotia, and on the latter as well as some parts of the former we see the surface covered with large blocks of conglomerate and grit — some up from beds of these rocks lying beneath the surface or presenting their bare edges above it. On the Nova Scotia shore we soon reach the grant map of Cape Porcupine, a fine promontory about 500 feet in height and presenting to the water precipice of hard and solid rocks partly

in part clothed by stunted trees and
brushwood. The central and upper parts
of this map consist of granite a granite
rocks and ~~one of those which are of~~
hypogene origin that is have been cooled
down from a melted state at a great depth
beneath the surface and have been forced
upward through overlying strata which they
have altered hardened and disturbed. In
the case of Cape Porcupine these strata are
dark coloured slates whose bent and
shattered layers now repose against its sides
resting again on them and occupying the base
of the hill on both sides we find thick beds
of hard grey conglomerate or pudding stone
made up of pebbles of older rocks and
some of them apparently of the granite of
Porcupine itself. These conglomerates are
the oldest or lowest member of the great
Carboniferous series of strata and southward
of the Cape they extend in steep ledges
along a considerable part of the N. Section
side of the Strait. Hard ~~old~~ and weather
beaten though they are and older than
all our great deposits of coal, yet when
they were only beds of pebbles, washed
by the sea. The slates & ~~granite~~ of Cape
Porcupine were ancient and perhaps
worn = worn rocks. If we look from
Cape Porcupine across the Strait we see
there the continuation of these conglomerates

their edges projecting at Bulwer's or McMillan's
 point like a cyclopean pier a break-water and
 extending thence far into Cape Breton; but we
 find on the C Breton side of the Strait nothing
 corresponding to Cape Porcupine. It is true
 that at a short distance inland there are
 hills of the same structure forming a range that
 extends towards the sources of the Inhabitant's R.
 and Mabou, but they do not extend thence
 to the shore and the coast opposite Porcupine
 exhibits only sandstone limestone & gneiss
 belonging to the Carboniferous system. Cape Porcu-
 pine is thus the abrupt termination of the rocky
 range to which it belongs and which extends
 along the north side of Sydney county and is
 connected with the hills of Pictou County, there.

There is here no evidence of a disruption
 or splitting apart of Cape Breton & Nova Scotia
 but there is proof of a want of continuity
 between the hilly districts of the two countries.
 The ~~eruptions~~ of igneous rock which formed
 the hills on the opposite sides of the Strait left here
 a space untroubled by their per eruptions
 and we may safely assert that had it
 not been so there would have been no
 Strait of Canseau. But then hills
~~have~~ There might however have been
 merely a valley a level tract of ground and
 not a straitway - the excavation of this last
 is due to another cause. The surface of
 Nova Scotia & C Breton is in most places

Covered by clay and payments of stone
which have been swept over the land by the
agency of water ^{via} at a comparatively modern
period! and there is good evidence that the pre-
valing course of these waters was from NW to SE.
If we look at a map which shows the
direction of the hilly ranges we may observe
that the ~~hilly range~~ ridge connected
with C Porcupine stretches to the S W
and ~~the~~ ^{then} corresponding elevations in C Beech
extend towards the N & NE — so that both
these elevated grounds would present to the channels
currents a great ^{dam in the form} of an angle having a narrow
breach — at the point of the short arm
to this point these currents must have
been directed with enormous force & scarping &
cutting away the solid rocks to make room for the present
stream — This process must have been
aided and ~~modified~~ ^{modified} by another circum-
stance. The strike or line of direction of
the beds of C Porcupine is nearly ~~parallel~~
~~with that of the short~~ the same with
that of the water also referred to — hence
this creek was especially forming for the
excavation of a narrow & deep channel
and — there was nothing to divert the
waters from their course. If thus ap-
pears that this remarkable passage is
irregularly cutting across the prevailing
direction of the rocks & shows out its

formation to a regular combination
of circumstances in the structure and
geological history of the district. We cannot
call it a ~~formation~~ combination more
it is a part of the work of time as soon
the sea its decree and knows the
end from the beginning.

Whether viewed from the water or from the
highly parts along its shores the Strait presents
many views of great beauty. The voyage entering
it from the S. seems to happen a noble path
that up the high land of C. Puget and
he might find himself entering the estuary of
some great river were it not the clearness of
the water & the absence of alluvial deposits.
The Strait of the Strait after C.D. ^{side} is low & of
little interest that in many places rising a few
feet, but the opposite shore of C.D. is high & bold.
Presently the terrace like edge of that land of
Clymene's - looking the small opening of Puget
Cove & Deep Creek like like deep ravines extend
inward in the rocky coast, & nearly with
middle of shore on rocky soil in point - here
the edge of shore in point. It is an irregular and
straggling plain and its site has little that
beauty but its good harbor and large area
the communities of its already long the beyond
of a town may note it a place of some
importance - and there is a point the

~~4~~ 15-

The probability of coral may be at some future
period added to its advantages as
coral means do occur at the distance
of two or 3 miles from the shore that
they are too deeply covered with imperforate
detritus to be explored without a considerable
expenditure of time & labor. The tide is low
at night. Accident may have been in the
course of time removed the broken trees
which they may possess.

From Shop the point is one of the prettiest views of the strand. Opposite is the Ware house a ware creek as it is called in the charts. The most pretty spot there is the shop this. On the same side a little further on we have a piece of the Strand, and the grandest of in the Strand, and opposite to it is the pretty modern building of Plaster cone - with its rocky point and with some looks - its well built up and rocky steps - and its beautiful view of the Strand what is not here well seen except when at the heart of the cone. The cone is directly the point spot in nature features on the side of the Strand - The summer evening when the dark shadows

of Porcupine is there for across
the Strait — and the setting sun throws
a golden light on its summit and the
fragments of its rugged sides and as it
rises gradually on the opposite side and when
very white this shade along the summit
into the pure spot that has a spotless
glacial few peaks, will be easy to see

Another very fine view is that
from the summit of Porcupine itself
So near the close of ~~this~~ my survey I ascend
this promontory with the ~~idea~~ ^{object} of obtaining
a general view of the district which
I had explored ~~that night~~ ^{and pay on} ~~the~~
idea of its general contour and of the down-
fall & connects of elevations & depressions depending
on the outcroppings of particular sets of strata.
The rugged ascent was well repaid by the
information thus obtained and also by the
leaving of the most panoramic view of
~~the~~ from the summit. Just on the
 brow of the Cape there is a bare plateau
of rock ~~covered~~ with a few bleached rem-
nants of spruce bushes and some clumps
of low grass, and it is from this spot in
some of the ~~in~~ its view that the great
bays ~~are seen~~ is very fine. The Strait

appears almost at the feet of the stream
and he looks down upon the steep precipitous
the topmost must be very far beyond his feet. The
ice columns from end to end of the stream
they all its jagged points & sharp peaks
cross almost as far as a map - and it is
from this point alone that its real nature
as a phenomenon divides themselves - On the top
side of the stream ~~these~~ arise the chain of low hills
long very flimsy low - and stretch to the other
while the low point they appear to slope steeply
down into the waters of the gulf and then to
return to the same level for the plain of Port Howard
Mackinac - South of the the low range of
Cape by the R. G. hills the low hills extend to
like a wide shape of hills in the vicinity of the
Cape - by which extends - and far to the
of the sea the stream opening into Ched Bay
the of the low hills and the low of hills with its
numerous low hills and and in the dark
are seen the mountainous mass of the Mackinac
except the trees for some of the hills
in the G. G. hills seen with better
the R. G. hills -

The Base of Precipitous is encum-
bered by huge blocks of granite which have
fallen from its steep sides - When looks at the
Cape from the top side of the stream to the south.

that some of these were of many
whitewash and appeared to indicate
the presence of some other sort than the
dark cold granite which appeared
in the cliff - On coming to the beach, the
ground to be ^{at 18 ft} blocks of granite covered
with the white crumbly incrustations which
this in situ is permanently submerged - Then the
ground here was also high with water and
for a long time have lain in the bottom of
the shaft, and they have probably been
lifted to their present position by the ice a
little to the east many years ago & that
they are in situ in the bottom of the
shaft - This is a little patch of
sandy beach occupying a miniature cove with
a little willow & a few creepers on the shore
cliffs, and a few beds of the pretty lead
green - (Lithium mantles). This place I
was told has been a sort of money
digging in search of the private hidden
treasures whose existence is notorious to
beheld by the ignorant on so many coasts
other places on the coast have the same reputation
but this one appears to be to some
peculiarly of appearance & situated to the shore
of some uncertainty about the quantity of
of one of the various of minerals which stand here
been certain such common quantity and the wild prices
of minerals - & to this -

X 16

at Strait end as that other dunes, & in
the pine clumps so deep & straight where
may ex points of shelter & sanctuaries must
necessarily be a great help for ships & for
the all part of Gulf St. Lawrence. The Strait
of Shipps already great must increase
and it is likely that ~~instead~~ ^{with} forests
the whole of the shores instead of 500 or 600
miles do now 50 miles per day
may well be to count hundreds. If
the ships have an anchor and, that
of the boats. The trade & currents as
there have been anchorages in a Strait
across the bar into a great inland sea
like the Gulf are exceedingly rapid & irregular
these currents & whirlpools must greatly
cause much detentions to ships which will
be a matter of the aid of steam could be
procured. It is probable that even in
the a few small steam on the Strait
might be profitable besides especially as from
operations of commerce even in early ~~stages~~
ships shrouded at the entrances of the Strait
Another description is a steam
ferry - across the Strait. The want of a
better means of conveyance the boats is

after felt now and ^{as} the unit
a little sub less important and the
intercourse ~~between~~ ~~between~~ letters of S. & C.B.
I found no extent - letters were of course
the two countries will be improving themselves.

I arrived at the Throat of Caurean
 on the commencement of the violent
 rains which closed the warm weather
 of last summer at least in the E
 part of N.S. After a day's drive on
 the elements of rain I was hospitably
 received by Mr. McKen Esq of Planché C
 and here I was detained three days
 in a most wet weather. At the close
 of the storm I found that all
 the difficulties of broken bridges and
 swollen streams awaited me. Fortun-
 ately however these were of small im-
 portance in the first part of my work the
 exploration of the coast sections of our
 iron ore. On enquiring I found that
 though iron ore has been long settled
 and is distant only 3 miles from
 the most important ~~ports~~ only
 with the stream, and though the intervening
 country is level a heavy ~~is~~ - there
~~is no road to it~~ is no road to it
 whatever except a narrow perceptible path
 through deep woods of the name of a 'Deep'
 road because there are numerous trees
 and it is in winter. This also a narrow
 the has any luggage to carry to go by land there

The distance

As soon as the weather cleared
any signs of improvement - I set off
with a boat and two men. Finding
with slippy but previous day, and
examined in passing the Loc rocks which
appear in the south part of the Strait -
and what were likely to give important
hints the appearance of our course.
On or at Bear Island Point at the South
of the Strait we found that though the shelter
of the C.B. shore had prevented us from feeling its
effects of the wind - the ice still ashore were
and seen in the open bay, and after an un-
successful struggle against the wind & waves my
cousin found it impossible to round the headland.
We therefore walked across the point but finding
none a beautiful little indentation in the
coast of the N. side of the land which separates
the Strait from Carleton Cove. There we found
an old Eskimo who told us that the boat
could not pass take our boat to Carleton
at present but advised us to drag it over
a low part of the point onto the cove,
finding at the same time to a whole lot
just entering the cove and what like our
boat was bound to the cove but had

been detained three days and was just
returning from an unsuccessful attempt to
reach Flat Head the only intervening point.
We waited till the whole boat came to the
shore and then with the aid of the two
men in it carried our last baggage
across the point and landed here in the snow
water of the river. Finding the distance to our
Cave to be only 2 or 3 miles we left part of
our baggage and proceeded on foot. In this
we were joined by the new acquaintances of the
whole boat and after a disagreeable snow
over a wet and overgrown foot path and
experiencing some difficulty in crossing the mouth
of a large brook we arrived in the Cave cave
settlement in time to give a preliminary glance
to some of the more important points in its history
before sundown.

In a geological point of view I was much dis-
appointed by the appearance of the cave. The coast here
is very imperfect. The greater part of the shore
presenting only low banks of boulders - clay the debris
of the rocks further inland. The bed of the river
of which Flat Head would be
evidently of superior quality and in a
future position. This last circumstance
is however a evidence of very great dis-
turbance of the beds since all beds of
coral have been removed from the collocation.

a accumulation of pyroclastic material
apparently have been in a horizontal
position a heavy sand. In this instance
the shells accompany the coal have the
impression of fragments of pyroclastic
remains scattered over them by water when
they are deposited with the rest of the coal
found, and sandstones will appear mostly
massive the traces of ancient currents which
appear in the when it is unconsolidated beds
found. The hardening and elevation to the
present position of the beds affords
a most striking evidence of the violent changes
which the strata of the earth have undergone to
reach the land attaining its present condition.
All the rocks which appear in the strata are
and can come out in the water
fractures & disturbed and this circumstance
is evidence to their imperfect exposure for many
centuries to a geologist.

The bed of the coal extends for
centuries along the coast and shells
in a slightly more ~~to the west of the coast~~
city R & R exhibits. It is composed of
masses of sandstone but almost exclusively
pyroclastic the coal appearing being little
attended to. The sand near the shore though
rather heavy is of good quality but in
the case of the city it becomes very poor
of a pebbly nature a large part of the ~~material~~
~~found~~ burned ~~material~~ ~~is~~ ~~also~~

Conc

I shall conclude these rough sketches with a few remarks on the Mineral character of the district in ref to useful Minerals. It contains most of the Minerals found in the other Carboniferous districts of this Province - Gypsum is one of the most conspicuous of these. The great bed which gives name to Plaster is as a very fine deposit of this mineral. It forms a high & picturesque cliff jutting out into a little point at the head of the Creek. The greater part of this bed consists of anhydrous but and from that fine which is nearest to the Sea which of the Gypsum has been removed - but on the ^{whole} side of the cliff and near its summit a good trap of soft S.W. Gypsum might well be easily obtained - and if this water should be just taken few places will be more accessible than Plaster. Good S.W. Gypsum occurs at Car Cove Little R. & as far East as Glen Garry - ~~at~~ at these places also it can be charged with oil into barrels freely as at Plaster.

Limestone is another of the most important products of the district - It is found at several of the localities - and much at Plaster, Little R. and St. Peter's is very cheaply obtained - The use of this

limestone. I know of the way which
these ^{in great beds} ~~are~~ associated into
these rocks ^{for all purposes} ~~is~~ not so much alluding
to as it should be. Coarse. Thickly
textured are coming in for of hard
fly of its but I say no good for
a number of sup of ~~group~~ ^{group} for fine
stems — The greater part of ~~quartz~~
are much ~~undulating~~ ^{undulating} the heart to which
the same ~~quartz~~ ^{quartz} they have been ~~erected~~
erected —

Of interest that much I should be
sure which is the part of very of other
phenomena & in the ~~of~~ ^{of} ~~quartz~~ ^{quartz}
of clay craters is so abundant in
the Carl rocks ~~of~~ ^{of} the part
the ~~quartz~~ ^{quartz} appears to be very ~~deep~~
here. It could not however be safe
to ~~suppose~~ ^{suppose} the clay ~~quartz~~ ^{quartz} does not occur in
any with the Carl veins — Since
so little of it is yet exposed and this
thinks the ~~quartz~~ ^{quartz} appears to be ~~undulating~~
and in the ~~quartz~~ ^{quartz} the ~~quartz~~ ^{quartz} beds

My dears —

Could is the most important word
of the debate. It has been always
referred to and I am just by
here that I hope to live to see
it worked out ^{at least I do} that I have now
doubt that when this occurs of pushing
conducts — a great amount of the
movement there ~~is~~ ^{is} ~~the~~ ^{the} ~~subject~~ ^{subject} ~~could~~ ^{could} in
the present state of the ~~and~~ ^{and} ~~camp~~ ^{camp}
affairs to the present will be discussed