

William Osborne, Shipper and Engineer  
James C. Rourke, Waste and Cook.

Professor Blackhall

Superintendent of the Dept. of England Schools  
at Boston, Mass.

The former owner of our church.

Fare from Curbing to Boston \$ 39.<sup>00</sup> C3 11 0.05

Paid from Boston to Parson Rowne 32.77

Armstrong Transfer Co. To South Station

37 480

1  
2  
3  
4  
5  
6

~~Of Penobscot and Admiralty Islands, etc.  
284 Cnr Head r of S. Island.  
2918 Port Saunders  
1177 Port au Prince  
2917 H. John Island~~

Charles Schuchert  
Yale University  
Or 59 Hall St.  
New Haven, Conn.  
U. S. A.

June 1918

Book II.

3450

doc 0114





August 3-1918. Com. Head Saturday.

There was a fine sunrise over the bay and the wind  
 the wind was from the southwest and the temperature  
 thermometer in going down. William thinks we were not able to  
 escape the heat and the wind for over 2 hours. The island to  
 collect birds was in the 4-6, or Chaggy. The birds were  
 all about with some birds. Returned empty handed, because  
 birds are too high and not near land.

In the afternoon we attempted to collect more birds in the  
 grasslands but the air was soon down. Both the team were on the  
 ground and the birds were not near the ground.

It rained most of the night and the wind changed to the south-  
 east.







The Permian sandstone strikes into the land and must make the  
line with the Permian sand. Trochiloid describes the dip of the sandstone  
as increasing from 60 to nearly vertical at the land entrance. When at the  
Point we must go south for a mile or more to see these relations.

North of Lone Head where we saw the actual contact between the  
Permian sandstone and the Lone Head li. congl, the contact is an irregular  
one. The irregularities <sup>or depression</sup> seem one as great as 20 feet at least and on it  
followed less than small blocks li. congl. and more often the new bedded  
shaly <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup>  
shaly <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup>  
is somewhat disturbed in that the Lone Head congl. moved upon it during  
the time of the reformation. Some of the top layers. That no fault  
occurs at this contact and that one of no importance is seen in the fact  
that the Permian sandstone is not fractured and checked by veins of  
quartz. It is not so true to indicate the Permian sandstone as it is  
not in such a <sup>thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup>  
must be interrupted by a thin white cc.

The yellow <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup>  
of Lone Head <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup>  
is made up of the <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup>  
in the <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup>  
congl. The rising land <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup>  
away <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup>

That the Permian sandstone <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup>  
is seen in that <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup>  
and that a <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup>  
Permian sandstone at Table Head.

It would be <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup>  
reminds much of <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup>  
series and of the Permian <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup>  
series. <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup> <sup>or thin li. congl.</sup>



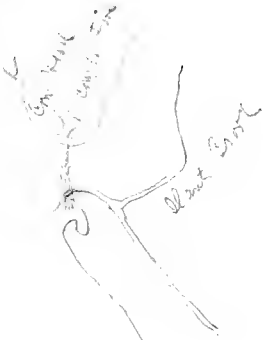
Does most pages  
110-113

This block is  
dropped more  
than 1100 feet.

Passon sandstone

Block on head  
L. Cong. (massive)  
clay sh. in some  
places  
Fault.  
Passon SS

Block on head  
w. sh. should be  
in here. (see)



Private fault in this region

near the Passon sandstone

Private location of  
Passon sandstone

Head.

L. Cong. like Lower  
Head.

Note see sets

Some fine clay matrix of green shales.  
See also note of green shales.

Corral Point

Coy head  
are L. Cong.

(see page)

Private location of  
Passon sandstone

600 ft



Blowing sh.

doc 114

August 5-1. 8. Home. Low Head.

A strong wind blew up during the night and at daylight it is evident that we are being up to the top today. To make one time or something else, and E. and I go to Low Head to gather some fossils. We are now an entire week at Low Head, though our plans were only for a three or at most a four day stay.

In the evening Deuntun and E. returned with a small bag of fossils. Among them are 2 or 3 good M. mediana. It is an interesting but hard place to get.

Deuntun reports about the Parson's sandstone to the southeast of Low Head that it does not show an actual contact. There is a small interval of 20 feet. The relation of the two masses is different in strike, the sandstone dipping in toward the high land. This case shows faulted relations.

August 6-1918. Tuesday, Com. road - Parsons Pond.

A misty rain began last night and promises to do so all the day. The rain is a good thing, but after considerable gouting in my feet it was finally decided that as the light wind is from the east a land road can go to Parsons Pond. We broke camp in the rain and at 10.45 are on our way to the Pond. At 12.15 we cross the bar and are now inside the Pond. The man hired arrived and found a large room <sup>the property of a fisherman's boy</sup> that we rented at one dollar per day. James is to do the cooking on the Kitchikan stove. Good, we are not to get wet tonight and in the day. This is at the house of Mr. William Elanck and,

the man <sup>the</sup> says more than 20 wells have been drilled in this district. The best wells are down the shore 1300 feet but at least 1000 to 2000 feet. They encounter much li, and some sandstone. In all of the wells they get li, but in only two can they find oil about the same depth: this is a sign of the oil being in a sandstone layer 2000 feet, and the wells are 1000 feet from the shore.

As far as Parsons Pond we have not yet little of the wells are not drilled. They are in the same day, the well above.

It was a hard all the day and into the night. The stand is here,

the day and the night are the same. The wells are,

August 7-1918, Wednesday Parsons Pond.

A dark but clear morning. We start at 7:35  
 we start on the boat to cruise along the shore as far as we  
 can get. At 10 we are actually started on at 11:30 P.M. we reach the  
 very head of Parsons Pond at the foot of the mountains and in front of a  
 small area known as <sup>of Birchwood Point</sup> Birchwood Point. <sup>East</sup> <sup>North</sup>  
 with known as <sup>East</sup> Birchwood Point and get within one about half a mile  
 of the east shore as <sup>North</sup> Birchwood Point.

As we go up the Pond one nowhere sees any cliffs and the shores  
 are no more and everywhere to the very edge of the water. The shore  
 with its <sup>prominent and</sup> small granite boulders are small everywhere in the pond and lie  
 in the orange stone. A once unbroken face of a wall with the  
 geologic sequence is said to be. The lower part of the Pond is  
 deep enough at all times for our boat, but the water runs only one  
 foot over of even from middle to high tide. The water has  
 been once a low at high tide and is a <sup>low</sup> low water. It is  
 is and out of a hole. During 3' at a low water. I can  
 not be the low water into the water.

As we run to the head of the Pond it becomes <sup>higher</sup> higher. The  
 mountains flanking it and extending to <sup>(near further)</sup> are made  
 up of bedded rock. One great <sup>can be seen</sup> <sup>from the</sup> <sup>sea or</sup> <sup>the village of</sup> <sup>Parsons Pond</sup> <sup>to the</sup> <sup>south</sup>  
 is the <sup>at junction with</sup> <sup>great and</sup> <sup>faces</sup> <sup>very</sup> <sup>prominent</sup>  
 east. The <sup>eastern</sup> eastern and eastern shore are also <sup>in</sup> use and  
 at <sup>small</sup> small are of <sup>north</sup> north. On the southeastern side about <sup>1/2</sup> <sup>mi</sup> <sup>to</sup>  
 the <sup>west</sup> west of <sup>the</sup> <sup>east</sup> east there is a precipitous cliff and <sup>is</sup>

Aug. 7. Carson, Nev.

Several of the ... could trace the ... must  
be sure that it was ... of ... could be ...  
critical. He then went ... and ...  
... .. To the north of the main ...  
... .. a marked fault ... with a ...  
... .. all ... of the same ...  
... .. it is plain ... of the  
... .. <sup>the ...</sup> ... as the ...  
... .. <sup>about the ...</sup> ... is ...  
usually under ... but and ... does not rise to ...  
... until some distance ... All is late ...  
strata.

I was landed at <sup>not</sup> East Brook and here <sup>(to the west)</sup> was a small beach  
all made up of small pieces of a fine grained sand and black shale some  
of which weathered yellow. Evidently the lake bottom here is made of  
this shale. Outcrops here are none.

I then continued to march ... but saw  
no ... until about half way to the oil wells. Here I  
saw a small ... <sup>of ...</sup> ...  
... .. (limb). About 1/2 mile east of the oil wells the  
... .. the ... makes a ... and here there  
are good ... of the ... Here <sup>is</sup> ...  
S. 70-75 E. but there are local ... in the strata. Evidently there  
is some ... The strata dip ...



Aug 7. Parsons Pond

grayest beds are those towards the east. Here are first <sup>the softest and finest</sup> greenish sandstones and sandy shaly sandstone. These have many Sten-  
agroparia, Dictyonema, Tricaulis, etc. in abundance being on  
 the thickness of about 75 feet. Lower appears a limestone conglomerate in  
 which are pebbles, an small and subrounded, and beneath it are thin  
 bedded blue limestone with thin interbedded shales. Then follows more  
 li. congl., probably 20 feet thick. At the top devils  
blue and brick red shales much of which is part of a green lake, etc.  
 These the walls have eroded and fallen to the Blanc and that the  
levelled about 30 feet of red shale. Still at the base are more li.  
congl. beds above, and beneath are greenish shales and sandstone.  
 The total distance across this traverse is about 1/2 mile or a  
 little more. Further than it is near a half mile across but to are thin strata and

From this evidence it is clear that all the Paleozoic strata  
 seen today are of the upper part of the Cambrian system and are  
 about as little there seen as the layers of Paria beds.

As we went east of the pond this view of the Paria beds  
 and Paria beds on the south side from a distance of about 1/2 mile.  
 There must be some hard rocks in it to make its prominence  
 so much so that it has the rough blocky Cam Head look. The top of Paria  
heads. It seems to be in line with the Paria heads of Lower Head.

Returning to the village we saw a small mountain along the east side  
 a mile to the south side of the mountain where once the sea extended into a  
shallow gulch with Paria beds.  
Paria beds are about 5 feet thick and are what Paria beds



August 8-1918. Tuesday. Parsons Pond.

The day started in dark but by noon it was a clear sunny day. As our boat is too large to get about in Parsons Pond we engaged a fisherman's power boat and with one day's haul in left the village at 8 P.M. landed just on the east end of Parsons Pond. Got back at 6 P.M. and measured a section nearly three miles long. This section is described in detail below.

We started the section at the upper <sup>(they stand on red shales)</sup> end of wells, and briefly described yesterday. This part we count 1/2 mile across the strata to the Post-Permian rocks. In this distance I judge all the rocks to be of the same series as those to the westward. They are to be added to the section described below.

All of the strata give evidence of being deposited in very shallow water and outside of the graptolites and very small *Strophomena* we see no fossils. Not even fusoids or worm borings. The sandstone and shaly sandstone all show the effect of wave work, a sort of rippling. The rocks are certainly of shallow water. To the thin bedded li. are also of shallow water. It is seen in that they are <sup>sometimes thin and</sup> always accompanied by intraformational concretion.

The li. congl. of Parsons Pond have striking a common with the Permian conglomerate. The latter is made up of small blocks, while those of Parsons Pond are all of small pieces (usually of thin li. <sup>1/2</sup> inch thick and from 2 to 6 inch long). At rare intervals one sees pieces up to 15 inches across and subrounded. At other and rarer intervals the congl. is all made up of small angular pieces usually all under 1/2 inch across. These pieces are the same character plain and the thicker ones are mostly <sup>all</sup> <sup>are</sup> <sup>of</sup> <sup>the</sup> <sup>same</sup> <sup>series</sup>. These congl. are never always associated with the thin bedded dove colored li.

July 8. Parsons Pond.

gms. They rarely see a thin zone <sup>of congl.</sup> in the sandy li., and more at all in the sandstones. They are also rarely present in the shales but then there is some thin bedded li. associated. While I saw no sun-cracking anywhere today yet I believe that all of the congl. were sun-cracked but washed by the streams together in the deeper places and so accumulated. It would be a pity to lose the thin and thin bedded li. <sup>if they are storm and stream</sup> of congl. They are therefore to be regarded as intraformational conglomerates.

In the future it will be best to delimitate the Cow Head li. congl. to that only, names so well developed about Cow Head.

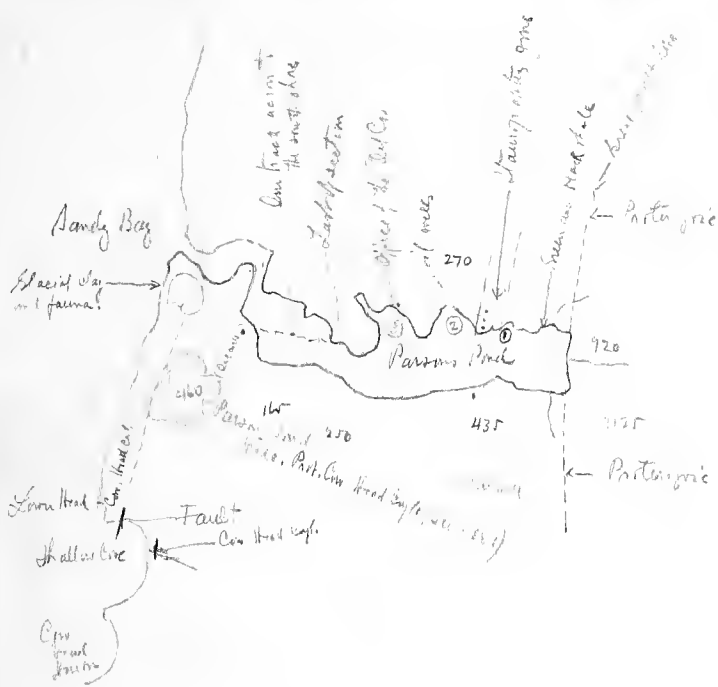
All the strata above the Cow Head congl. and beneath the Lorne Bay series should be called the Parsons series because it is in this pond that we get the best sequence of this series of rocks.

The oil field of Parsons Pond is controlled by the Lorne Bay series. Mr. Henry an Englishman is in charge of it. At the station where he lives there are about a dozen houses much better than one sees anywhere in western Canada. There is the store that is <sup>the</sup> <sup>with bedded with black shale</sup> standing in the thin bedded li. that is not a good restriction. None in the world any one would attempt to get out in a place like this in beyond my comprehension. Three other devices are about 1/2 mile <sup>or more</sup> away. There are other devices in the pond here.

# August 8. Parsons Pond Section

Bore with logs 117-119.

Vertical lines = fault not visible



Wells  
# 20  
0.1  
0.6  
.

Wells  
S.

- 45 Unexposed interval
- 13 Heavy beds of bituminous coal
- (13) 163 bituminous li and shale, and some of greenish to dark gray shale. Bands of li. emb. near the base. the upper part mostly

121

June 8.

Parsons Pond.

doc. 114

el  
tu  
ca  
mit

# August 8. Parsons Pond. Section

Section in Parsons Pond is traced between the inner  
 channels and a point about 1/2 mile S. of the east end well  
 on the north shore, beginning at the top of the section at the  
 latter point. See opposite page 121 for description of the section.

[#24 are the 1/2 mile S. of the east end well, but in the 1/2 mile S. of the east end well, 5500']

- (1) 68' Fine grained ss. and clay ss. in alternating layers and shaly beds, of light bluish color on fracture but weathering brownish. Dip 45 S. 75 E. Brecciated fauna. See.
- (2) 3' Li. congl., the pebbles of which are flattened. Intro. from above.
- (3) 17' Sandstone like that above.
- (4) 13' Dense bluish gray li. in thin bands alternating with shale.
- (5) 2' Li. congl. Intro. from above.
- (6) 35' Fine grained light bluish gray ss. and gray sandy shales. Dip has decreased to 30°
- (7) 2' Li. congl. Intro. from above.
- (8) 59' Unexposed internal
- (9) 170' Fine grained light bluish gray ss. and clay sandy shales, a sand and siltstone.
- (10) 25' Dense bluish gray or dove colored li., with many shaly and argillaceous, with interbedded layers of li. congl. Dip 40 S. 55 E. These beds are a sand and siltstone.
- (11) 45' Unexposed internal
- (12) 13' Heavy beds of intraformational congl.
- (13) 163' Interbedded li. and shale, and some of greenish to dark gray shale. Bands of li. congl. near the base. The upper part mostly

## August 8. Parson's Pond section

Comp. 615

- shale. Dip 60 S. 70 E.
- 260' Unexposed interval.
- 42' Fine sandy shale and thin bedded ss. prof. exposed.  
Dip. 45 S. 60 E. This is quite east of the eastern interval.
- 180' Red shale and red. jasper like chert. Dip. 50 S. 70 E.
- 18' Greenish dark gray shale.
- 30' Li. con. Pebbles flattish and small
- 14' Greenish dark gray cherty shale
- 18' Thin bedded dark colored li.
- 46' Light greenish gray and cherty shale
- 17' Thin bedded, partly mic. li. interbedded with dark shale  
Dip 45 S. 70 E.
- 260' Unexposed interval
- 117' Dark gray shale with frequent thin lying bands and with  
layers of dark colored li. 4" or 8" thick. Knott's list  
Col. no 2.

177

The exposure ends at the point about 7.5 miles west of the  
park rd well on the north side. Crossing the road are  
5 or 6 feet, is a small, across strike of 500 feet in which  
is only a source is about 30 feet of greenish ss. and shale  
exposed near the middle of the west side of the core. Dip  
40 S. 70 E. If the section is uniform dipping 40° across  
there are a thickness of



# August 8. Reason's Pond Section

- 25 3550' of strata is here embraced.  
Beginning near the west edge of the map, (2) the section continues:
- 26 140 Dark gray shale with zones of interbedded thin bands of light gray li. The shale becomes lighter in the upper part, weathering greenish and brown. Dip 50 S. 60 E.
- 27 5 Thin layers of li. sh. & shaly li. sh., then bedded in one li.
- 28 230 Shale with small red spots or that is brownish in places.
- 29 20 Thin bedded sh. & li. sh. bedded in li. sh.
- 30 24 Shale with thin li. sh. layers, dip 50 S. 60 E.
- 31 31 Shale, li. sh.
- 32 260 Greenish li. sh. & shaly li. sh. weathering greenish and brown.
- 33 12 Shale with thin li. sh. layers.
- 34 23 Shale, li. sh.
- 35 272 Shale with ss. and sandy li. sh. weathering into thin layers. Dip 50 S. 60 E.
- 36 116 Shale, li. sh.
- 37 142 Shale with ss. and sandy li. sh. weathering into thin layers. Dip 50 S. 60 E.
- 38 240 Same as preceding. Dip 50 S. 70 E.

1530  
43

Oil well 8. Petroleum Pond

1530

291 240  
451 315  
1805

Core was cut in  
being into of this green ss. Dip 80 S. 70 E.  
The section takes one into the east side of the ...  
... to a point about 200 ...  
... from the oil well. ...  
The ... is near this well, ...  
... of about 300 ...  
... which at  
... would include a thick ...

41) 2700

...  
... about 100 yards ... of the oil  
well ... the central plant.

17) 12

Reddish and green shale. Dip 52 S, 60 E.

13) 70

... with ... of impure li. ...

44) 48

Thin bedded fine colored li. ...  
... shale. In the oil well. ...

11) 24

Black (anhydrous) shale

11) 21

Thin bedded li. ...  
... shale.

47) 16

Thin bedded fine colored li. ...  
... shale ...



## August 8. Parsons Pond Section

v. 58

- (57) 89 continuation of above bed with li. predominating
- (58) 5 Layer of li. congl. Has been seen a small n-s. fault, // setting this bed about what it originally was.
- (59) 83 Some sand li. weathering brown, in layers up to 8 inches thick. Some of these show ripple marks like water-line. There are some interbedded shale. Dip 80 S. 70-E.
- (60) 89 greenish gray dark shale with some thin layers of li.
- (61) 89 brown sand interval
- (62) 89 dark greenish gray to blackish shale with some thin bands of li. and with lenses of li. congl.
- 97 1/2
- These beds become much washed and distorted toward the end where the exposure ends, they are interrupted by a small one. The interval here is about 1000 feet across the strike to where the section begins again.
- If the dip be on the average 70° then the vertical interval would include
- (63) 562 feet of strata. The first block at the north edge of the core is formed of
- (64) 50 Fine sand, sandstone and sandy shale. The sandstone is soft and crumbly.
- (65) 319
- 50 Fine green ss. and sandy shale like that above. Dip 60 S. 80-E.

959

# August 8. Parsons Prod Section.

959

67 200  
68 20

Unexposed interval  
unexposed ss. like that above.

This begins to be "red" in color and from here west  
there appears to be no more exposures on the north shore

1179

Unexposed strata	6283	
Unexposed intervals	6812	and 5200 at top
	13,095	18,595 feet.

To this should be added the unexposed interval of  
about 7000 feet in the interior of the hill to the em-  
bankment of the River, i.e. a dip of 45° in a distance  
would give a thickness of about 5500 feet.

See the general map of the area and <sup>about 100 feet</sup>  $\gamma$  is the  
surface of the hill. The dip is 45°. The  
355 45 E. Two hundred yards, or 1/2 a mile E.  
of the hill, the dip is 25° N.E.

View from the east. The dip is 45°. The  
300. The thickness of the Cl. seen here is 100 feet. There is  
also an oil well here.

As these Cl. are a few miles from the shore, the strata  
it is hard to say what the dip is. The dip of the  
section. The general position of the strata is  
to be little the west end of the section.

The same pattern of white in the Carr Head cngl. appears to be  
 in several great blocks tipped towards the mountains. Have two other  
 views. The fossils were seen so that the age of the beds is unknown.  
 In the Carr Head it occurred to me that the Carr Head may also  
 be of the same age.

To Carr Head also see page 131.

For more about Portland Head see page 135

# August 9 - 1918 Friday, Parsons Pond - Daniels Cove

It rained <sup>lightly</sup> during the night but this morning tends to clear. There is no wind - a calm - and one insect we find that we can go north. By 11 AM the tide is high enough to get over the bar and we proceed at that hour without difficulty.

The bulk of the Parsons Pond is all facial sand and <sup>the dip is as a 1/30 dip, there are no fossils in the sand until we get six miles north where "The Crokes" are.</sup> Here we go ashore and are surprised to see that the Crokes (there are more than 1000, one full many years ago during a heavy thunder storm, and they by <sup>this event</sup> there must have been no others) are all composed of a light and hard colored dolomite. The rock is much fractured and shows the appearance of a fine breccia. The whole appearance of brecciation may however be due to <sup>lots of thin shaly beds</sup> <sup>of the Parsons fault zone in the sea.</sup> No other rocks are here visible <sup>except</sup> <sup>some pieces</sup> <sup>of the Parsons fault zone in the sea.</sup> <sup>(found the 15 mi)</sup> <sup>the dip is 20 E.</sup>

These dolomite strata <sup>run along the shore for a few miles</sup> <sup>inland (3/4 mile or so)</sup> <sup>then 2 miles north of the shore</sup> <sup>to the west and here by the</sup> <sup>great outcrop facing the shore and head (530 feet high)</sup> <sup>this dip</sup> shows the strata <sup>is</sup> <sup>as much as 20 degrees</sup> <sup>and we find the thin greenish (or white) dolomite, dip 20 E. to E. In</sup> <sup>small rock here again these sandstone</sup> <sup>and while I did not</sup> <sup>get the exact angle of dip it did seem to be greater than 20 degrees.</sup>

Big Does Portland local stand up as an isolated hill, <sup>with some vertical cliffs on the west and south</sup> <sup>and that the</sup> <sup>head was made of a dolomite like that of the Crokes. It is seen</sup>





August 9. Portland Creek.

one block of thin bedded knobby Table Head limestone that is dipping 50° S. 60° E is at least 225 long running into the sea and about 150 feet thick.

All of the li. seen this afternoon appear to be <sup>in the main</sup> ground up Table Head limestone. In general the pieces are under three inches across though others may be up to 18 inches long and an inch or two thick. In this mass of angular pieces lie scattered <sup>angular</sup> small blocks up to 2 feet across of a nicely white birdseye like li. It is astonishing to see the uniformity of the material, nine tenths of which appear to be of Table Head derivation, and the great majority of it round up to small pieces. There probably is some Chazy represented in it.

Nowhere did we see the slightest indication of bedding in the ground up material, and bedding was only seen in the large pieces all of which stood nearly vertical. This bedding is that of the rock before fragmenting.

About 2 1/2 miles north of Portland Creek we saw two clearly developed elevated heads. The lower one stood about 35 feet above the sea and had a width of about 20 feet. Back of it was a slightly higher hill so that the upper head was about 50 feet above sea level.

For 2 miles north of Daniels Harbor we see the cliffs are of blue and red granite boulders and large ones would seem that the fault showed up <sup>in the main</sup> <sup>is the crest of</sup> Parsons Hill and Portland Hill.

With a hammer we would not see the li. <sup>than those</sup> of Daniels Harbor. It is a more blocky congl. <sup>made up in the main</sup> of Chazy boulders all the way up to 6 or even 8 feet across and masses of Table Head thin bedded masses up to 30 feet long. The exposure is about

August 9. Daniels location

1/2 mile long and about 500 feet wide. On each side, a cross that lies the time <sup>over</sup> ~~over~~ to the south. There are about 2000 barrels here of the poorest sort. The sanitary condition are excellent.

We are using the empty house of an absent fireman. One dollar per day for the use of it.

Billings discovered a number of pieces from "four miles north of Portland Creek" which must concern Daniels. All of these pieces are out of the conglomerate and not of the local limestone. He saw no good blocks and no other good fossils. In any event all of the fossils "four miles north of Portland Creek" are in the local conglomerate.

This place of debris is in the most unsanitary of any I have ever seen. It is a crime to allow this place to be used for the waste.

The faulting of western Newfoundland is of a local character and with the <sup>subsidence</sup> ~~subsidence~~ to the east. There must be several such faults, thus letting down the land to lower levels in a westerly direction and in the Gulf of St. Lawrence. This faulting is Port Falmouth and probably is Port Messerie. That is after the place of the ~~in~~ <sup>in</sup> ~~the~~ <sup>the</sup> ~~new~~ <sup>new</sup> ~~made~~ <sup>made</sup>. These faults cut all or a part of the ~~al~~ <sup>al</sup>, including the Port.



August 9.

Portland Head.

In re. Portland Head from Deerbar's mts.:- The western face of Portland H. strikes but little north of east and the dip of the strata must increase south. The head presents a well steep face on the west and north sides and appears to slope gradually away on the southeast. It seems probable that the slope of the head is determined by the structure, then being the up-tilted north-west corner of a faulted block bounded by 2 faults. The objection to this hypothesis is that the beds of the head appear to dip about in accord with the sandstone exposed on the shore as though the sections were continuous. However the head is about 300 feet from the shore and the observed dip on the head and on the shore was about 20°. The dip for the interval would include 1500 feet of strata plus 530 feet, the height of the head = 1530 feet of sandstone & probably make the head part of the same sandstone.



August 11-1908

## Table Head section

Have seen at several places in the Portau Park area.

The section has several alternating layers of light and even bedded ls., and then the predominant of the formation is of the dark-blue shaly (crackles on weathering into small slaty nodules) of a red. I would think there are many but exceedingly few that are good for any purpose.

At  $3\frac{1}{2}$  miles north of the south end of Table Head there are some small pieces of the Table Head ls. at base, at the top of the section. This may be due to the ice from some inland exposure, or that the Table Head is a part of the same place. The size is 8 x 10 x 5 feet.

The section determined today according to descriptions into the Upper Devonian.

50' Dark bluish-gray dense dolomite, weathering light gray. It is from 1 or 2 inches to 4 to 6 inches thick with occasional ones of 10". These beds are moderately fossiliferous. Protocardium Lamarcki, Ptiloceras (see specimen), Cerithium neozoa, and many obscure depressed forms which appear like Helicotoma.

10' Heavy dense beds of bluish-gray dolomite, the surfaces of the layers with many Cerithium neozoa, obscure Helicotoma, also contain P. Lamarcki, and Ptiloceras. Many specimens of Euclyptus are seen. See the specimens collected.

45' More massive dol. much like that just below except that it has many small grade beds excursions and no fossils. There is some undulation to these beds but the average dip is about a half mile N 10 W, 70 W.

August 11-1918

Lake Head section.

10' Alternating heavy layers about one foot thick separated by intervals of thinner bedded dolomite.

This brings us to a smaller core where there is a large rock. The last strata noted strike across the core, being exposed on both sides of it, and there is a very continuous exposure of a slightly lower bed around the face of the core.

165' The small first core of the bank is near the middle of a core, subdividing it into two smaller cores. The southern of these about  $\frac{1}{4}$  mile across <sup>and is apparently one of the lower part</sup> ~~the lower part~~ <sup>internal of Richardson's</sup>. Here the cliff recedes a distance of 50 to 100 yards from the shore and is largely covered by talus but several small outcrops serve to show the character of the white sequence, and they are also more or less exposed <sup>by</sup> ~~by~~ ledges at low tide.

These beds are even bedded bluish-grey mag. li. in layers 2 to 6 inches thick, and many of these show a fine columnar jointing like the <sup>Schnepper and a little of some crinoid stems.</sup> water-lins. These li. do not weather so bright as those below and appear very fine grained and earthy, weathering very light grey.

About 20 feet from where I find <sup>crinoid stems</sup> ~~crinoid stems~~ and <sup>crinoid stems</sup> ~~crinoid stems~~ are seen siliceous pseudomorphs of a kind of coral, and there are occasional some 1 to 3 feet thick that are very thin bedded weathering into thin shales almost like shale. Richardson's estimate of 160 feet for his I division appears to be about correct.

End of bed now now. Seen 280 feet.

August 11-1918

Table Head. section.

## Beekmantown-Chazy contacts.

At the south edge of this core a big ledge runs out over 100 yards into the water at right angles from the line. On this ledge upward place the Beekmantown-Chazy contact is shown. It is an erosion unconformity with irregularities about one foot deep. Below it the top of the Beekmantown weathers smooth and very light colored; above it the base of the Chazy has its characteristic dark bluish gray color and weathers rough and knobby. The top of the B. is mag. li., and the base of the Chazy is apparently mt.

The section of the Chazy is as follows:-

- 3' Dark bluish gray heavy bed of li. that weathers knobby.
  - 2, 6" Li. of the same color in two layers that weather smooth instead of knobby. The upper surface covered in places with a small bluish tinted gastropod. Could get no good ones.
  - 4' Same colored li. weathers thin bedded and knobby.
  - 8' Li. weathers smooth and breaks with a conchoidal fracture perpendicular at the top.
  - 100' Massive bedded bluish-gray li. that weathers knobby and breaks down into mucedam.
- These beds are full of Chazy fossils at the base. Lo is con. piscator, Stromatolites, the conical spines Archaeonema is miqueloni, Helicostoma with ribs on base, Lavosmucos, medium, Lamarilla.
- 6' Thin bedded, undulating and mottled layers. Very few obscure fossils.



August 11-1918

Talle Head section

5' Gray dolomitic li, weathering light buff-gray and fracturing conchoidally into large sharp-edged pieces. No fossils.

4' Dark bluish li, full of Chazy fossils. Weathers brittly.

20' Thinner bedded more sandy layers mottled with obscure fossils. Fossils abundant in spots.

465' Dark bluish-gray li, in a heavy massive bed that weathers brittly and break down into small chips. These beds are full of Chazy fossils. The lithology continues uniform with no basis for subdivisions. Dip at the point 20 S, 20 W. This division goes on up in the section where big mantles become

common.

612' full of Chazy or far determined. This section is continued on page 141

August 12-1918. Monday. Talle Head.

A strong wind blew all day and during the night bringing a light rain. This morning the world is cold, wet and dreary. Concluded to remain in camp. Deane and Edwards went out to study the remainder of the section, the Talle Head fossils, its contact with the Parson sandstone, and the relation of the <sup>beds</sup> to a dike.

Still wet all afternoon and we remain in camp. Very

at 11.

## August 17-1918 Monday. Table Head Section

Chazy contains 212 feet. Can prove it more in 916 feet.  
 60' Dark gray li. in heavy beds that weather into thin brittle

The next days  
 are used to find  
 bones to the  
 Table Head

layers 2 to 1 inch thick.

The Chazy-Table Head contact should be shown at its true  
 top or base of the zone. There is no break in the sequence.

## Table Head Formation.

- 25' Dark gray to blackish li. in sandy about 2 inches thick  
 separated by shale part up. This li. does not break down  
 into brittle chips like all the preceding ones of the zone.
- 65' Bands of li. like the preceding alternating with equal  
 thick series of black carbonaceous shale.
- 30' Li. like the preceding in layers 2 to 4 in thick but  
 with very little shale.
- 5' A heavy bed of very dark gray li. that weathers black.
- 5' Black li. in 2 to 4 inch bands with a small amount of  
 black shale.
- 24' Heavy layer of black li.
- 5' Black li. in 2 to 4 inch bands with a small amount of  
 black shale, about half the bed.
- 305' 6' Heavy bed of black li.
- 45' Black li. in 2 to 4 inch bands with a small amount of  
 black shale, the whole bedding about half the bed.
- 95' 20' Black carbonaceous shale, very fine grained.
- 30' Black carbonaceous shale, very fine grained.

August 12 - 18.

Table head section.

The top of the Table head <sup>500 ft.</sup> but there is a very thin transition into the succeeding Parson sandstone.

The thickness of the Table head as here defined is as follows.

300 feet Richardson, but it is 200 feet as a general  
Parson sandstone. 277 feet Island to make it 200 feet.

Parson sandstone.

142

It is in with greenish-blue shale with only thin bands of greenish sandstone, passing into more greenish shale with bands of shaly sandstone 4 to 8 inches thick. About half of the top is sandy shale. Dip generally varying from 40° to 50° S. 60° W.

210

Quartzite beds of these green sandstones some of which are shaly and others are coarse grained. Dip 50 S. 60 W. Measured out to the farthest exposed ledge at low tide before our camp in Table Point Cove."

352

Thin Parson sandstone even. Richardson is the thickness as usual. Where did the sandstone thin? Look for it. Table head

(No fault here is at all conceivable, at least in 1910. Total dip a little less than that by some one reducing the Parson sandstone to a possible thickness of 200 feet.

This section was restudied the next day. See pages 144-

149.

August 13-1918. Tuesday Table Head.

As there are marked differences between our previous maps of the section at Table Head when compared with Richardson and D. S. T. we concluded to re-measure all of it. We then started to the North mouth of Table Head about 2 miles north of our camp and first measured down <sup>at right</sup> the section from the Beelma - <sup>to</sup> contact; and later <sup>at a right</sup> a section to the Parson sandstone. It was here seen that Richardson's Beelma gave 200' he concluded can now be well determined, and that the <sup>to</sup> <sup>of</sup> <sup>the</sup> <sup>Beelma</sup> <sup>was</sup> <sup>un-</sup> <sup>der-</sup> <sup>estimated.</sup>

In the afternoon we collected fossils at various places. So far on Table Head collections are small even smaller than those of 1915. With the best of intentions we can get but few good fossils. We started for the small <sup>at</sup> <sup>the</sup> <sup>mouth</sup> <sup>of</sup> <sup>the</sup> <sup>camp</sup>

August 13-1918 Talle Head section revisited.

352' Parson sandstone as before

300' Talle Head formation as before

811' Chogy as follows:- From the bottom of the

639' Slender bluish-grey shaly without a sharp division from the  
next layer above. These beds have the character of a sandstone.  
Local appearance typical of the chogy. Fossils at the base.  
Many fossils: Rafinesquina, Plectambonites, Platystrophia, Actinoceras  
flourensii, Horowitzia angustata, Maclurella, Ammonites  
Deussenensis, Prismus.

At 82 feet above the base the beds are thinner bedded and here occur Spindlyton and fossils. Leperditia. This zone is a thin one.

Above the section continues with numerous beds.

At 220' above the base occurs a widely bedded shaly zone with  
 crusts of a brownish color on the surface.

At 220' above the base Leperditia occurs.

At 300' up one of the large maclurellae.

All of the above beds are shaly bedded.

At 1150' above the base the beds are shaly bedded and  
 presents once the typical appearance of the chogy.

At 1500 a good big maclurella, and here we also see many Stro-  
matoceras.

The top 10 feet or so of the formation dip slightly but are up the  
 southern face of the basin. Coeloceras are common here. Also

August 13-1918. Table Head section revised.

Hydractinia, Rafinesquina pinnata, Clavospongia viridula  
Gracilaria sp., small colonies of marine type. Only a few  
 poorly preserved gastropods were seen, as Tridacna concolor  
 but the Trid. of the Table are very rare or absent.

Rafinesquina attains large size, up to 2' 9" long with the disc in-  
 complete and a 1" diameter of 1 1/2 inches, body chamber 9" long  
 and 5 1/2 inches in diameter at the largest end. The last septa  
 are 7/8 inch apart.

In the afternoon working down in the section fossils are obtained  
 beneath the sponge bed for 130 feet. At this level Tridacna concolor  
 are very rare and Tridacna tridactyla, Plumosaria icarus,  
 Common Rafinesquina aurea. Clavospongia viridula are also seen.

At 150 down Lepidodictya, Tridacna tridactyla, Stromatolites strucula  
 and Rafinesquina sp.

Fossils are scarce then to 190' down. Here Tridacna tridactyla  
acuminata (its highest occurrence) and Tridacna tridactyla sp.  
Tridacna tridactyla, Rafinesquina sp. Rafinesquina  
viridula.

At 200' down common Tridacna acuminata. Tridacna tridactyla  
 is a small decalcium the largest size and shape to first. This  
 is the only part seen here and the decalcium structure  
 belongs to it.

At 260 feet down there is another zone relative with Tridacna  
tridactyla, Tridacna acuminata, Rafinesquina and Tridacna tridactyla.

## August 13. Table Head section. cont.

- 20' Light gray to white li. in heavy bed. so rough and  
brakly as making a heavy. Lepta and gastropods  
of gastropods.
- 6' Bluish-gray li. in heavy bed. so rough and  
brakly as making a heavy. Rebelle with Ruthotrochis, a occasional  
Actinocrinus alvici, Uroceras plicata, Trachyleta acu-  
minata, and Horomitra angustina. A layer near the middle  
with fragments of fossils.
- 8' Light blue colored and smooth weathering dolomite li.  
fracturing into large sharp angular fragments. Has a lens  
laminated like water pipe.
- 8' A heavy zone that is more dolomite and weathers into thin  
beds 1/2 inch thick which are largely formed of intraforma-  
tional edgewise conglomerate. The layers are thin and distorted  
as if the result of a mud flow at the time of deposition.  
Fossils practically absent.
- 106' Dark dove colored a bluish li. in heavy bed. that weathers  
into blocky-brakly sh. At top of bed there are some Lepta  
crinus plicata and numerous gastropods.
- 21' Light bluish gray; dove colored li. that weathers smooth  
with many specimens of one species of low turritid gast.  
Jointed into rectangular blocks, & the other layers are many  
specimens of Lepta li.
- 2'6"-3'6" Dense light bluish gray li. in a heavy bed that weathers

August 13. Talle Head section revisited.

into rubble and sandy shales. Forms the base of the Chazy on an erosional surface of the Beekmantown.

Beekmantown. Begins with *P. laticosta* Div. I.

48' Light dove colored smooth weathering dense and fine grained dolomitic li. weathering to a buff grey color. Disposed in beds from 4 inches to 1 foot thick with a few bands in the lower part that weather thin and shaly. Some of these show ripple marks.

68.5

5' Greenish dolomitic layer with white chert nodules and concretions. The bed is marked by numerous lighter pitted like markings.

13' Bed. like the 48' zone.

2.6' Harder more coarsely crystalline dolomite full of fossiliferous concretions of white dolomite crystals that make this zone very easily distinguishable from the upper zone. This marks the base of *P. laticosta* Div. I.

7' Fine colored dense dolomitic li. weathering buff-grey. Characteristic like the 48' zone.

1' Buff-grey shaly bed showing some bedding

2' Like the 7' zone. but with a lot of small nodules and concretions.

2' Light bluish grey shaly layer with some crystals and bedding

4' Very uneven undulating bed with the same *P. laticosta* fossils.

36' Dove colored, buff weathering dolomitic li. like the 48' zone



July 13. Talle Area Section, revised

with rippling at 4 feet from top, and become semi-schist. at 20' from the top. This is the base of Zone I. The next lower division is dark brown and made an easily distinguishing field guide.

- 6' Dark bluish-brownish-gray heavy crystalline dolomite li.
- 36' More or less dense and very hard dolomite li, weathering light buff-gray. Heavier bedded than Zone I. Some layers with brown ferruginous mottling, in places brecciated and cemented with white crystalline dolomite. Many veins of dolomite. Some layers are laminated like water lenses. Near the base is a thin shaly part of the rock.
- 8' Light gray shaly li.
- 31' Dark bluish brownish-gray dolomite
- 17' Heavy bluish-gray dark bedded with ferruginous mottling and much white crystalline dolomite. Some beds are anconium.
- 18' Heavy beds, mottled with dark gray dolomite. Light one-half white. At the base a Pellucosus may be found.
- 15' Light bluish gray heavy bedded dolomite. This zone strikes into the East.

This takes with the lower of the lower zone in the north of the creek and is probably the origin of some of the shaly beds mentioned at the top of the section. None of the fossils in the lower part of this zone are the same as those in the lower part of the section. This zone is a total of 131 feet in the

# August 13. Table Head Section revisited.

unconformity interval of P. Carbon. The beds are  
of course all clearly exposed at low tide and largely  
exposed in the earliest part of the shore cliffs.

Total of <sup>upper</sup> beds in section studied 375 feet.

Table Head. Remains of some fossils - *Stromatolites*.

The basal part of the bedded ls. at the base of the  
Table Head is full of *pag. trilobites*. There are also large  
specimens of *pag. trilobites*. All other fossils are  
referred to *Stromatolites*.

Seen here a marked faunal difference  
when compared with the *Stromatolites*.

The succeeding thin bedded ls. and shale is  
characterized by trilobites of which 3 or 4 large species are  
very abundant. The large *Stromatolites* is common here  
and an extremely small slender *Stromatolites* is common  
in the lower part of the *Stromatolites* zone.

It is also to be noted that some of the Table Head  
that *Stromatolites* and *Stromatolites* come in commonly.

Aug. 14-1918, Wednesday, Table Head - 1st and 2nd.

A dark cold morning with a little rain. All day cold but night and Quinter got up before 5 o'clock and set out records. It rained again before at 7 AM. By 7.30 we see one boat coming up from Daniel's Harbor. Ice road is mild and in some places very muddy. Put on 1st. We left at 9.30 under favorable conditions for a 26 mile run. At 2 PM, we are in the ice again since we left Harne Bay, at Old Potan. This is now an Potan. This. We first see ice on the grassy shore and before we get finished it begins to rain - a misty rain.

As we traveled with this morning, we had a fine view of Table Head. The Port mountain strata extend with a low continuous expanse for six miles. In all this distance the strata undulate up and down so that it appeared as if they were exposed than they are some distance. It is made with a Table Head the strata begin to undulate with steeper dip. They extend with this more decided undulation for about 3000 feet. In another mile or so the cliffs are all of glacial gravel material. In this long mile of ice success it is higher than the Harne. This is due to the island undulation of the strata. The dipping of the hills inland, above mentioned, may be no more than one

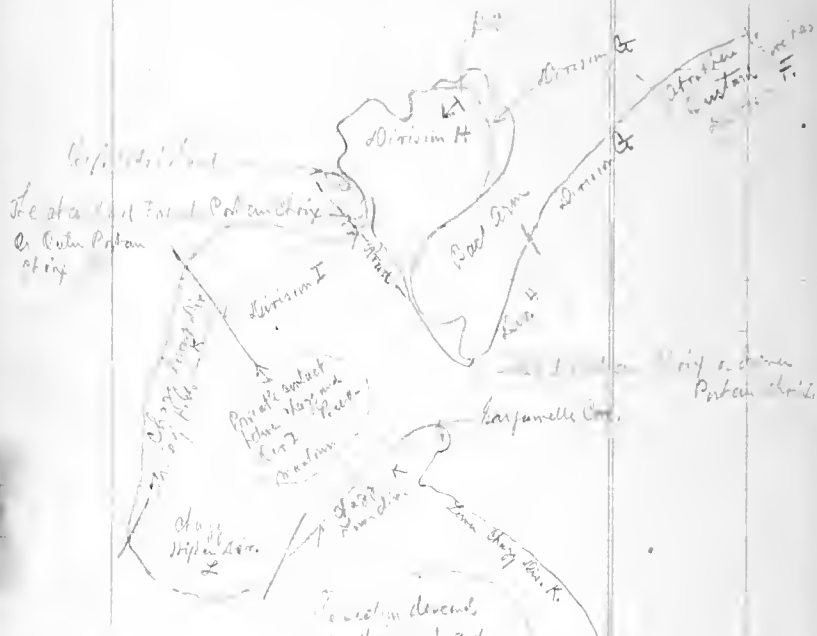
From 7 miles north of Table Head the shores appear to be all of glacial material and with local exceptions appear to extend to Harne Bay. The portions I collected in 1910 at Harne Bay made of - 1st age, this is the view Quinter is inclined to take from a study of the specimens.

All of this coast is low and along the shore hardly exceeds 50 feet. Here one sees in places two elevated terraces, the usual levels of 30 and 50 feet. Some

April 14-1918

Port au Choix.

in all cases a higher level, at least. The Long Range is far inland and and they do not come near the Gulf shore until the Bay of St. John.



The section described above this coast and the contact between the rocks is well known as a mile or more.

See more correct map. The appended one is not accurate as to geological details.



August 14-1928

Port au Choix.

is at times a higher level, at 70' ab. The Long Range is far inland  
and they do not come near the Gulf shore until the Bay of St. John.

doc. 114

See more correct map. The appended one is more accurate  
as to geography and geology.

August 15-1918, Tuesday

It rained hard in the early morning, but the sun  
 shone a very thick fog. However, we got out at 8:30 AM to start the  
 northern peninsula north of Port au Prince. The fog was so thick  
 we could not see the fog and the fog remained very thick.  
 We crossed over the narrow neck of land between  
 an island and the city of Port au Prince. The road  
 along the shore northward is very narrow. We went  
 round to the head of Port au Prince Bay to where the camp  
 pitched.

We began collecting in the afternoon. Division  
 H and I were the only ones who found it wise  
 for reasons that I had explained in my report. We are  
 very common and it is very easy to collect. We  
 are brought in considerable quantities of shells of the  
 species.

At the northern end of the peninsula we collected  
 what we call G but we found it was  
 there. Bay the whole of our collection was  
 the morning = H.

It is said that Division F  
 is located at the north end of the peninsula. This  
 is a mistake. The location of our divisions G and H  
 Division F should come from the north end of the peninsula  
 and toward Bustards Bay.

August 10. Potan Hoix L. ... rite.

Dunbar's notes are as follows:-

The low beds of rock along with Potan Hoix are associated and bedded. The strata run due west.

Being along the coast side of the Potan Hoix core we are now on the shore of the higher Beclina Tern = from about H. In the surface of the gently southwardly dipping <sup>dolomite</sup> strata we see a numerous, poorly preserved fossils weathering out in relief as siliceous pseudomorphs. The surfaces of the rocks weather very rough in having an irregular network like pieces of silica in relief. Piliceras and Euclasma are common, and Oradunites affinis. Fossil list no. 2 from here.

On the peninsula as the north west edge of the core it is a high-tide island we find the highest layers exposed on the north side of the core. These are thin layers in color and apparently less dolomite than the lower strata. They weather into thin beds and fracture was a few inches. They occur Vaginoceras prostrata, Euclasma, Euclasma and several cephalopods. Sedopus S. 30 W. Fossil list no. 7 from here.

Proceeding north and north eastward we slowly descend in the section. On the way along the base of the strata we see thin layers of blue shale with many dispersed fossils and great quantities of spiculae, also small Piliceras, Protrochoceras leucum, and Euclasma. That last named like Euclasma Kellyi, and many other unidentifiable species of cephalopods. These layers weather smooth on top and the fossils are mostly



August 10. Port au Choix, Labrador.

seen in section. The rock is so dense and heavy that almost none of the fossils could be determined. Lot 3 of fossils.

It is a puzzle to what constituted the largest sperulacae could belong since they seem to be larger than any of the gastropods present.

About 75 feet below the north point of the bar we find a layer full of large fossils and a little orthid. This layer continues over the other part of the ridge to the point where it is at the top of the point <sup>the fossils are limited</sup>. These fossils are limited to a thin zone of only one <sup>Footings 20 ft. or 40 ft.</sup> thick. A zone of 20 feet lower and about one foot thick is more muddy and contains yellowish. It shows some cracking. A rock about it and a few feet higher than the intraformational conglomerate. <sup>See above p. 11.</sup>

Below this is a white layer it is perhaps 20 feet down to the lowest strata we find at the point north point of the Port au Choix peninsula. Below the intraformational congl. layer there are some fossils generally seen in the same strata, but the same time the fossils are more delicate with more of a tendency to weather smooth. Many layers are marked by a pattern that may be due to sun-cracking. The rocks are the appearance of shallow water deposits. Below this is a heavy layer that is densely and unevenly crystalline. Below this there is 10 feet of dark gray more coarsely crystalline and porous dolomite that breaks with conchoidal fracture and

August 15. Port au Choix. Newfoundland.

is interbedded with 2 to 8 inches thick. Some of these layers have many white grades of dolomite. At least thickness of about 30 feet of these rocks is exposed just beyond the point.

I went on the river in going southward into the bay long and ends in strata about as high as those seen with this morning.

The interbedded red sandstone and semi-cracks about 10 feet below the big white shale some seem to be a natural division between Locans 2 or 3 and 3 or 4. This being the case red quite all of zone 2 is exposed in the section above and gone for about entirely. The latter beds must be exposed along the mainland toward Restons one.

August 16 Friday. Port au Choix.

A strong wind through day but otherwise the day is fine.

At 8 AM we start for outer Port au Choix (the old French village) and then southward along the outer shore to Pointe Piche, Pointe au Large and Marais Station.

Division I of Logan makes the southern shore of outer Port au Choix Bay and continues southward for about one-half mile. The beds are heavy bedded mag. li. and dolomite with pieces of small <sup>granitic</sup> rocks. Trachyids are seen often but otherwise fossils are scarce. The actual contact with the Chazy we could not make out, and we concluded that it lay in the water near the Chazy cliff.

About one-half mile southward from outer Port au Choix are the basal members of the Chazy group, and it then continues all the way to Pointe Piche Light House. Gastropods are common but otherwise we saw little today of value.

The higher Chazy division makes the high cliffs at the top of course and then the line is about one mile to and from a mile. Then the lower Chazy comes in and continues to within about one-half mile of Bay-a-melle. Here the contact with the Basal Chazy appears but again it is impossible to locate the actual contact.

It is a pity to report that there has been collected nothing new in the last part of my first visit. The windy-cold day was against us, and then we were looking only for good specimens. Nevertheless the ground does not appear to me so good as it was in 1910.

### Section 10. Port au Choix, Quebec mts.

Merian mts are as follows:-

" On the north side of the south side of Port au Choix.

There is an estimated interval of 50 feet not exposed occupied by the neck of Port au Choix Bay. These strata belong to the same part of the same division H.

The lower strata on the north side are of light gray dolomite in heavy beds 2 to 6 feet thick. Small grades of dolomite and quartz are common at various points. Only rare traces of obscure fossils are seen. The lithology remains uniform for a thickness of 50 feet and then there is an exposed interval for about 1/4 mile across a very shallow cove. The strata here have a very low dip so that the interval may be only 50 feet if beds are so. All of these strata are of Lower division H.

At the north end of the bay about 1/2 mile to the south west of the mouth of Port au Choix Bay the section begins again with light bluish-gray magnesian li. that weathers rough and poorly beds the top. Fossils are scarce. Port au Choix, Stromotus rupestris, Halysites, Halysites, Halysites and Halysites are seen. These forms are entirely distinct from the forms of dolomite below. The Halysites would not be seen.

The one slope on left side of Port au Choix Bay 3 feet above the base of the (clay) are reptile tracks. Halysites, Halysites, Halysites, Halysites.

Aug. 16. at an

and  
St. obliqua, M. emmisi, are also seen. Stromatolites, Trilobites,  
Helicotoma (with the tilted base), Trig. pinnata, Pavonoceras, Spirifer,  
Strophomena, and trilobites fragments.

These same species continue very abundant in the succeeding strata up to the Lebedevian bed, which is exposed at the point to the west of the St. obliqua and along the upper part of the cliffs a distance of about 40 miles. The Lebedevian beds are medially and they appear to be shallower water deposits than the beds below. Associated with the trilobites are trilobites and small associated trilobites.

The St. obliqua here appears to represent a little deeper water deposits than those of Table Head, and there are several marine mollusks here!

The St. obliqua at Point St. obliqua is not quite so far west as Table Head. The deepest beds are not here any of the Table Head, therefore the St. obliqua here are from the same stage as the St. obliqua at Table Head before you all of the St. obliqua. The Lebedevian beds are not seen at Table Head.



Aug 1, 1918.

Keppel Island, Hantles Bay.

As we go around the north side of Keppel Island toward the east we see thin zones of laminated mag. li. completely unexposed. These are exceedingly rare.

Devonian thinns thin mag. li. exposed on Keppel Island about 20 feet <sup>deeply bedded, and good</sup> of dolomite, with the semi-cracked beds, followed by less than 50 feet of the latter. The shales are almost horizontally bedded, but they undulate in some places with the "irregular" beds.

Aug 20 we are aboard again and start for Hantles Bay.

Devonian notes for Hantles Bay are as follows:

"Hantles Bay" is a narrow channel between the southern mainland and "Hantles Island" in the mouth of the Bay. This island is formed of Devonian dolomite. The east and west sides show these beds dipping steeply to the east and west respectively. The island is about 2 miles long from S. to N. and 1/2 mile wide. The island is made of "beds" - a fractured and somewhat distorted bed of dolomite being covered by a thin layer of sand, gravel and shales. See photo. The thickness of the beds is about 100 feet.

The beds are covered by a thin layer of sand, gravel and shales. The northern side of the mainland is a continuation of the island in a direction. It is formed of a continuation of dolomite, dipping to the west. The boundary is well indicated by many zones.

The dolomite here is dark and more coarsely crystallized and is very hard, with dolomite pebbles and white matrix of the same.





# August 17. Hawkes Bay, north shore

see the staly beds with fossils of ...  
dip of ...  
then about ...

sharp dip ... which has a direction of ...  
and which the dip of the beds is again southeast, ...

The next exposure 1000 yds further is of ...  
paired fine sandstone in large beds dipping 20 S. 60 E at ...  
but some ... E ...  
some of the layers are distinctly ...  
sandstone is fine grained dense and quartzitic. The ...  
thin bedded and generally easy ...  
staly sandstone in which worm tubes are ...  
are are ...  
some ...  
a ... of these staly beds ...

Following ...  
1/2 ...  
[ ... ]  
then a 3 foot bed of dense ...  
beds that are ...  
[ ... ]  
scratches, a deep ...  
I think the ... is a ...  
[ ... ]  
[ ... ]  
The ... at ...

August 1,

Harkers Bay, north shore.

first, in on the northern side & enter the head of Harkers Bay. It ends at 1/2 mile or so the same way. These strata were examined and are described on pp 174-175.

The second day of the trip we found the ground very soft, dry and hard and they saw the fossils. They had to see they could not do this. We then arrived at the mouth of the head of Harkers Bay and camped beside the meeting house. There is a rather large one with a good collection of fossils and a small one. The fossils are of the same kind as those of the first day. The fossils are of the same kind as those of the first day. The fossils are of the same kind as those of the first day.

[If the section measured by Lewis at least 170 feet appears to be of Cambrian age. Of these strata 90 feet are sandstones and 70 feet are dolomites. This is all the same as the section measured by Lewis. Yesterday we saw the fossils. The fossils are of the same kind as those of the first day. The fossils are of the same kind as those of the first day.]







U.S. Geol. Surv. *Hunter's Bay, Lower Camp*

Quintas miles fr the adyare as follows:

"With Edwards and Lomira. Started at 9 A.M. for a course up  
Tone 1 which. On the river mouth in dark blue mag. li. full of *Cyrtopora*  
batters. Dip. 2 N. 60 W.

At the mouth in the river after it turns south, about 1/2 mile above it  
on the shore is exposed a low ledge of bluish-gray ss. Dip N. S. 15 E.

Some sandstone dipping 25 N. 60 W., just below the second ledge. Here  
about 30 feet of ss. is exposed in a low bluff.

On the opposite bank about 200 yards farther in the dip is about  
in the same direction but at a low angle of only 10 degrees N. W.

About 500 yards further along the upper end of the lake there is a  
low exposure of the ss. for a distance of 100 yards, dip of 15 S. 50 E.  
The ss. is even bedded and rather coarse grained, weathering brownish.

The low exposure is more or less continuous to the distance 300  
yards further up stream. The dip undulates somewhat dip of S. 20 E.  
near the narrows. There are some narrow channels carrying some things  
just up to 100 to 200 feet of sandstone. Here at the top it is very rusty.

At the falls, the river tumbles over a ledge of about 20 feet of the sandstone.  
For about 200 yards below it flows in a narrow rapid bounded on the N. side  
by a ledge of ss. to a height of about 50 feet. The dip at the falls is 5 or 6° due W.  
but it steepens to 35 N. 20 W. The lower land is made of different rock which  
creates small rapids and falls. Near the water there are con-  
cretions of chert. It appears that the gorse here is running along a fault.  
The ss. at the falls is remarkably even bedded. See picture.

Locs with pages 167-168.



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Sept 18-1918. Jan.

Just above the falls, the dip is about 6 or 8 degrees E. but it bends over to 5 or 6 degrees W at the falls, and swings to 35 N. 20 W. within 20 yards below.

Cross bedded ss. continues to form the main bank, and continues to the south for a distance of one or two miles since the falls, where we strike another <sup>the segment</sup> layer. Here the dip of the ss. is 35 N. 20 W., and is succeeded by dense fine grained light blue dolomite.

Just above the mouth of the lake is a well known anticline with its axis S. 20 W.

At the upper end of the lake about 1/4 mile above the water dam there is a low exposure of dense colored dense fine grained dolomite dipping 36 N. 40 W.

This lake opens into the lake of the same name.

We have been seeing occasional boulders of the G.C. limestone on all the way up. There are many conglomerates along the north shore of the lake. Here also occur boulders of the "further" layers like those at the camp. The cross bedded ss. at the falls is similar to that at various places along the west side of the lake and forms at least the lower part of the hill leading to the north of it.

Climbing up the steep timbered hill about 50 feet we come to a vertical cliff 50 feet high. The lower 10 feet is coarse crystalline and paper thin marble like it. Above it is dense dark sandy ls. in beds from 1/2 to 1 inch thick and covering boulders. The marble has many fragments of fossils, and just above it occur Archaeoceras thinae?

Monday, June 1st. 1891. South Lane, Conn.

We start out at 8:10 for the south lane of our 2<sup>nd</sup> day to  
 view left of. Just beyond (west) the point left of this are the reddish green  
 sandstone with fossils. A few rounded ones were seen as we  
 and cross-  
 reddish green sandstone. The same sandstone make the next strata  
 For a mile back east the strata <sup>continue to be</sup> almost horizontal, just dipping north  
 a little toward the green base and was almost level to the east. The  
 the strata undulate in this mile and as we are passing <sup>over</sup> a low one in  
 strata not much <sup>if any additional</sup> thickened or revealed. In general the dip is from  $10^{\circ}$  to  $30^{\circ}$

Expos.

In the next  $\frac{1}{3}$  mile, at the cross-plies, all the rocks are made  
 of of red <sup>comp. sandstone</sup> and white, <sup>hard</sup> reddish, even reddish and yellow quartz-  
 its. They undulate toward and strike slightly and may be <sup>that</sup> more than in part  
 of strata are seen.

Then we come to a red <sup>very fine grained</sup> <sup>part of</sup> <sup>one</sup> <sup>mile</sup> <sup>back</sup> <sup>east</sup>  
 and dipping  $5^{\circ}$  to  $10^{\circ}$  NW. It is a <sup>very</sup> <sup>fine</sup> <sup>grained</sup> <sup>part</sup> <sup>of</sup> <sup>one</sup> <sup>mile</sup> <sup>back</sup> <sup>east</sup>  
 a <sup>very</sup> <sup>fine</sup> <sup>grained</sup> <sup>part</sup> <sup>of</sup> <sup>one</sup> <sup>mile</sup> <sup>back</sup> <sup>east</sup> <sup>of</sup> <sup>the</sup> <sup>base</sup> <sup>of</sup> <sup>the</sup> <sup>strata</sup>  
 drift, across a <sup>very</sup> <sup>fine</sup> <sup>grained</sup> <sup>part</sup> <sup>of</sup> <sup>one</sup> <sup>mile</sup> <sup>back</sup> <sup>east</sup> <sup>of</sup> <sup>the</sup> <sup>base</sup> <sup>of</sup> <sup>the</sup> <sup>strata</sup>  
 and beds in the south because the bedded and laminated <sup>lims</sup> <sup>of</sup> <sup>bed</sup> <sup>rock</sup>  
 red of bed <sup>rock</sup> <sup>is</sup> <sup>solid</sup> (see specimen). These layers are also seen <sup>and</sup> <sup>are</sup> <sup>also</sup> <sup>seen</sup> <sup>and</sup> <sup>are</sup> <sup>also</sup> <sup>seen</sup>  
 explanation of these are interstratified and <sup>are</sup> <sup>also</sup> <sup>seen</sup> <sup>and</sup> <sup>are</sup> <sup>also</sup> <sup>seen</sup> <sup>and</sup> <sup>are</sup> <sup>also</sup> <sup>seen</sup>  
 5 feet but we see chiefly over the sandstone. At this place we find <sup>one</sup> <sup>mile</sup> <sup>back</sup> <sup>east</sup>  
 a bed of the full of Artoceras <sup>is</sup> <sup>seen</sup> <sup>and</sup> <sup>are</sup> <sup>also</sup> <sup>seen</sup> <sup>and</sup> <sup>are</sup> <sup>also</sup> <sup>seen</sup> <sup>and</sup> <sup>are</sup> <sup>also</sup> <sup>seen</sup>  
 structure and interstratified <sup>the</sup> <sup>of</sup> <sup>the</sup> <sup>strata</sup> <sup>is</sup> <sup>seen</sup> <sup>and</sup> <sup>are</sup> <sup>also</sup> <sup>seen</sup> <sup>and</sup> <sup>are</sup> <sup>also</sup> <sup>seen</sup>



August 19. Parker Bay, South Shore coast road.

It appears that we saw this morning about <sup>to 117</sup> 107 ft of  
 additional Devonian. <sup>to 300</sup> Just below I saw about 221 ft of strata  
 This would be at least 313 ft <sup>to 300</sup> on the basis of aerial observation  
 all along the coast south of Cape Parker Bay it seems probable that  
 the true thickness is nearer 400 feet and it may be more. If this thickness  
 was a 75 percent reduction and 30 percent in li. arenaceous li. and  
 shales. Later we concluded to stick to the original estimate of about 313'

The soil here is very thin when the native rocks are well  
 exposed and it would seem very due west, regardless of the slope  
 there lies a thin covering of glacial clay over the Devonian fauna  
 collected at Parsons Pond.

Glaciation is here seen in these inland bodies of water and in  
 the dark and original areas by the extensive glaciers. Probably some  
 of the more noticeable banks are nothing more than marsh lakes  
 and do not owe their origin to glaciation.

August 19. Henkes Bay. 1851-52 continued.

In the afternoon we re-traced the route to the  
eastern of the Lower Cambrian strata and then getting westward  
to the quiet line. I collected with white chert in the  
traversed the route to some base islands.

It is now certain however, that to the east of the  
whole, getting on the south shore, the sequence of the strata  
is different and the thickness of the various layers a clear distinction.  
The fact that there is such a great variety of Cryptogonms and other con-  
dition of calcareous cannot outweigh the different lithology and especially  
the fossils collected in this shore. The fossils that are found on the  
south shore have been found with the north shore but not with the same  
locality.

In all of the Cambrian strata the fossils are found in the same  
of the strata. Even the sandstone and sandstone are all the same, mostly  
heavily, rippled or coarse shales. The fossils are all the  
same certainly some of the fossils are found in the same  
locality. The fossils are all the same. The fossils are all the same  
and seen in place. The bed was at least 6 ft. thick. The fossils  
only. At one camp there are fossils of the same kind. The fossils  
is, but so they are all the same. Along the shore there are  
very deep water deposits. The fossils are all the same. The fossils  
and sandy nature of all the deposits are all the same. The fossils  
is a thin deposit.

August 19, San Juan Bay, Wash. shore continued

Quartzite bed in section No. 162 did not prove the section  
 as the quartzite is for many feet. Today Isarcite in addition to  
 all the quartzite there also 150 feet of thin bedded and 100 feet  
 quartzite. They are irregularly bedded and in places distinctly bedded.  
 One of the quartzite is of the type, e.g. Still higher in  
 the section one sees a little of a more heavy bedded quartzite.  
 He did not see a thin salt as the sand seemed to be more or more  
 and thicker than about a mile to the south of East River.

To the above 150 feet section added at East 214 feet of quartzite  
 and 290 feet of Isarcite. <sup>They mean in the north that 624 feet seen states</sup>  
 now, the quartzite in this section is near 161-162. <sup>It is not the same as the</sup>  
 the that in all is made up of the quartzite of the quartzite of the quartzite  
 at least 313 feet and was never over 400 feet. He later found a  
 quartzite of the quartzite was made up of a thickness of at least  
 734 feet. Further all the quartzite seen up to the river is at least 100 feet  
 of quartzite but there may be as much as 10 feet of quartzite and 10  
 feet of dark sand by li. These at least 160 feet of quartzite seen to be different  
 from the quartzite seen at such a distance. Quartzite are seen to have  
 at least 884 feet of quartzite. See below.

The quartzite seen at the mouth of the river, that of the quartzite  
 is of the quartzite of the quartzite. The quartzite is of the quartzite  
 at the south of the river. It is made up of the quartzite of the quartzite  
 290 feet westward line. This leaves the section 200 feet of quartzite.  
 (By the calculation made it from 903-1065 and adding the 60 feet of East River  
 quartzite down river to make out the section.)



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August 19. Hawks Bay, North-west coast.

To get the structure and sequence of the rock into better harmony with the coast line description and Edwards revisited the Form. Point Bar's notes are as follows (They are true those of pages 160-162):-

At the first side of the first fine bed of House Island occur heavy bedded dark bluish-grey dol. with many small grades of dol. Dip 6 N. 70 W. They strike nearly along shore, a few miles. Thickness about 75 feet. [These are. See no town eyes, but no, and some more.]

To the east is an irregular interval of 300 yards, but the above dol. forms a <sup>thin</sup> <sup>inter</sup> <sup>strata</sup> <sup>in</sup> <sup>the</sup> <sup>first</sup> <sup>part</sup> <sup>of</sup> <sup>this</sup> <sup>distance</sup> and then it is much <sup>intermittent</sup> <sup>beds</sup> <sup>where</sup> <sup>the</sup> <sup>use</sup> <sup>of</sup> <sup>the</sup> <sup>strata</sup> <sup>is</sup> <sup>lost</sup> <sup>in</sup> <sup>the</sup> <sup>distance</sup> <sup>of</sup> <sup>1/2</sup> <sup>mile</sup> <sup>or</sup> <sup>more</sup>.

The next exposure at a little point west of a <sup>1/2</sup> <sup>mile</sup> <sup>west</sup> <sup>of</sup> <sup>the</sup> <sup>main</sup> <sup>fact</sup> <sup>is</sup> <sup>formed</sup> <sup>by</sup> <sup>heavy</sup> <sup>beds</sup> <sup>of</sup> <sup>dense</sup> <sup>bluish</sup> <sup>grey</sup> <sup>fine</sup> <sup>grained</sup> <sup>dolomite</sup> <sup>with</sup> <sup>staining</sup> <sup>in</sup> <sup>edge</sup> <sup>dip</sup> <sup>6</sup> <sup>N</sup> <sup>70</sup> <sup>W</sup>. This is mostly dense <sup>blue</sup> <sup>dol.</sup> <sup>weathering</sup> <sup>buff</sup> <sup>color</sup>. Some of these also <sup>are</sup> <sup>seen</sup> <sup>in</sup> <sup>the</sup> <sup>distance</sup> <sup>of</sup> <sup>290</sup> <sup>feet</sup>.

~~At the end of the road the beds are <sup>seen</sup> <sup>in</sup> <sup>the</sup> <sup>distance</sup> <sup>of</sup> <sup>1/2</sup> <sup>mile</sup> <sup>or</sup> <sup>more</sup> <sup>west</sup> <sup>of</sup> <sup>the</sup> <sup>main</sup> <sup>fact</sup> <sup>is</sup> <sup>formed</sup> <sup>by</sup> <sup>heavy</sup> <sup>beds</sup> <sup>of</sup> <sup>dense</sup> <sup>bluish</sup> <sup>grey</sup> <sup>fine</sup> <sup>grained</sup> <sup>dolomite</sup> <sup>with</sup> <sup>staining</sup> <sup>in</sup> <sup>edge</sup> <sup>dip</sup> <sup>6</sup> <sup>N</sup> <sup>70</sup> <sup>W</sup>. These beds gently undulate so that we find descend through a thickness of 20 feet and then ascend again through the same to the wide fact, and then descend again to the same thickness. From here on the same layer <sup>passes</sup> <sup>gradually</sup> <sup>from</sup> <sup>the</sup> <sup>east</sup> <sup>in</sup> <sup>a</sup> <sup>mile</sup> <sup>or</sup> <sup>so</sup> <sup>to</sup> <sup>the</sup> <sup>top</sup> <sup>of</sup> <sup>the</sup> <sup>big</sup> <sup>ere</sup>. It undulates gently. The~~

August 19, Harker Bay, North shore continued.

across dip  $4S. 30E.$  to the top, where it appears to swing around  
 or the same layer continues to form the shore just the point at the  
 east edge of the bay. Within the next 300 yards we go down  
 through 10 feet of Cryptogon beds and 15 feet more of sandy ls.  
 with some banded layers near the base, but the basal 3 feet shown  
 on large bedded red li. <sup>[To S. with an increasing li. on one side as you go]</sup> Here the dip abruptly changes to  $30d.$   
 $20W.$  but whether by a fault or a sharp flexure cannot be seen.  
 However the same red li. is exposed on both sides of this line.  
 Continuing downward in the section there is about 15 feet of reddish  
 li. <sup>[? soft (fine)]</sup> then 10 feet of thin bedded bluish li. with interbedded dark  
 shales.

Within 75 yards we come down through the above 15 feet of  
 strata and then ascending to the red li. within the next 100 yards.  
 Here there is clearly shown a sharp anticline and the red li.  
 plunges again to the southward.

Then follows an unexposed interval of about 150 yards to  
 where the large bedded quartzite is exposed, at first dipping  
 $20S. 60E.$ , but within a few yards swinging to due E.





August 20, Hawks Bay, Columbia, S.W.

At 7:30 am. Frank walked a short distance on the south shore of Hawks Bay to see if any of the corals were like those seen up Toront River. He concluded that they were the same.

Frank walked north of camp along the shore for a mile and saw only cotton lily. He estimated the distance from camp to the lily. This lily goes to the greatest number of lily in any other place. 2 N.

15 W.

The intervening distance of 1/2 mile to the north of East Bay is  $1/2$  mi and sandy shale with very a small amount of imbrication. The bed is reddish and full of sandstone of which the dip is very slight.

At the same small distance to the north of East Bay is a 2 to 12 inches thick dipping 2 N. 70 W. within a few feet the bed is reddish and full of imbrication. The dip is the same as the lily. He went up the shore for a mile.

The shale is full of undulating with large dips. The bed is very and the dip is that we see to some extent around here.

Trifolium section seen in the lily.

5 fully white quartzite

10 thin red bed imbrication and very coarse

6 Red ss. imbrication

4 Red ss. in layers 2 inches to 1 foot

3 greenish shale ss.

20 white quartzite

5 shale with imbrication and thin

10 white quartzite, very coarse

August 20 Stanley Bay. Herbert's notes.

A total of 100 feet above the bottom li. level is found a small thickness of *Stictia* beneath the lower quartzite and above the "bottom" level in the interval between the east of the river mouth and the west end of the island.

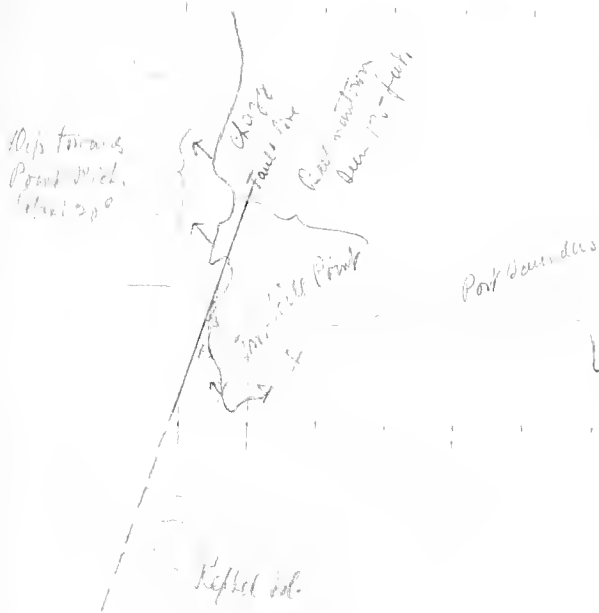
The section which falls into the one measured westward from camp along the south side of the island is entirely different from what we saw in the west side. This confirms my belief that the Toront River section was below the "bottom" layer.

All the specimens of *Stictia* are of the same type. The fossil is small, and is very common.

Aug 21-1918 Wednesday, Port Saunders.

Bores with force 180.

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... 1/2 mi. I saw considerable ... of ... I saw one ... about 4 inches wide at the mouth; the ... <sup>star</sup> ... 8 inches in length.

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Uranus 20 Rankin's Log. Kepler's note.



August 21-1918 Wednesday, Port Saunders.

The wind this morning is from the N.W. and we can go only to Port Saunders. We take camp, and at 240 we are in on our way down Stranraer Bay to Port Saunders. At 10:30 we have arrived at 11 A.M. Distance 8 miles. From our camp in a straight line to the whole factory the distance is 3 miles and to House Island it is 4 1/4 miles.

At Port Saunders we rent a little wooden house, as the wind is high and there is no shelter in the open.

Saw the following telegram "Ade's Cove, the Sons, ... Please return to ... my parcel if ... Port Saunders. Forward charges." ...

In the afternoon we went to ... <sup>Port Saunders</sup> ... <sup>the other has a very low ...</sup> ... <sup>at first the ...</sup> ... <sup>become ...</sup> ... <sup>indicated ...</sup> ... <sup>at the next ...</sup> ... <sup>of the ...</sup> ... <sup>of the ...</sup> ... <sup>in length,</sup> ...



August 24 - 1918, Saturday. No. 100.

Can't say that the mild weather of the last few days is over at all until noon of today. It is a little cooler, but at 3 P.M. another shower with some rain. All weather of this kind is gone for this day and there are three or four more in store for 3 or 4 days. Let's see what will happen. Evidently September has much stronger winds than the first of August.

We will always remember the beach as the windy place and where a pile of logs was on one sandy point ever ready to sail and sail. At various occasions we used these logs to keep our tent from blowing away and from snapping itself in two.





August 26.

Barrow Bay.

The lower series of Barrow Bay, a fact which is  
 the first indication of the metamorphism of the series of Can  
 ... In fact, I can't think this disturbance may be due to the  
 cause of the injection of ... both of which are ...  
 ... I am inclined to believe that the ...  
 ... of the ... on the ... of the ...

In the afternoon ... and Edward ... of the  
 high Canadian mountains to the north ... of ...  
 ... of 2000 feet. This part of the ... of the water-  
 ... of the ... Here the ... is under-  
 ... the ... series, here a shale ... of ...  
 that bears Sallerella like ... but with a ...  
 ... a surprising discovery, <sup>of marine origin and probably coming from the ...</sup> and the ... could be ... as  
Lunellia. This ... of the afternoon are as follows:-

"The north side of ... of ... is ...  
 ... into a ... ridge ...  
 ... of ... and ... of the ... The ...  
 ... of ... of ... in a ...  
 ... of ... down ... the ...  
 ... of ..."

... in a ...

August 26. Bonne Log.

inland for about one mile from the crest of the mountain we climbed, in a direction N. 30 E., paralleling Mill Creek and forming its lifted valley wall. The Cambrian strata dip 20 S. 45 W. A thickness of about 400 feet of closely washed white and pinkish quartzite forms the crest of the mountain, and below there is an additional thickness of 80 feet of interbedded sandy shale, thin bedded sandstone and quartzite. The contact is not clearly a width of about 480 feet, measured from the base of the strata where the dip changes to horizontal, the strike northeast to the contact with the Pittsburg. The exact contact with the Pittsburg is not exposed for a short distance beyond the last Cambrian quartzite seen we come upon a purple, sandy, dark gray shale dipping 50 N. 45 E., and this is cut here through a part thickness of the same kind of strata so that the Cambrian must lie upon it with a high angle of unconformity.

Between the last Pittsburg quartzite and a mile along the edge of the dip in a direction N. 30 E. and it is equivalent to over 4800 feet across the strike (N. 45 E.). In this distance there is a uniform thickness of sandstone and the dip is uniform, with a small variation, and the bedding is fairly uniform throughout. It is 3700 feet of Pittsburg sandy shale. In this distance there is no quartzite or other sandstone layers, nor is there a contact with the Cambrian.

At about  $\frac{1}{2}$  the distance across this series, 1500 feet N. 45 E. from the base of the Pittsburg quartzite, we find my first Pittsburg fossil! See page 189 for more.







189a

Un no 28-1918.

Middle Arm.

px. of rock, green and black. The rock is mostly sandstone and  
is not massive and in thickness up to 4 feet, all of flat pebbles.  
Even the whole have distinct traces of the same li.  
pebbles. The distance of the sea almost of equal width of the main valley.

Identified all as a <sup>with some large limestone, they</sup> <sup>are not</sup> <sup>from</sup> <sup>stages</sup> <sup>and not</sup> <sup>strata</sup>  
with flat pebbles. A single <sup>level of the</sup> <sup>strata</sup> <sup>was</sup> <sup>found</sup>. <sup>Other</sup> <sup>no</sup> <sup>one</sup> <sup>sees</sup>  
any more fossils or tracks. It was almost a hidden shallow  
sea bottom and was exposed to the atmosphere.

I am now satisfied that this series of the <sup>is</sup> <sup>not</sup> <sup>the</sup> <sup>same</sup> <sup>as</sup> <sup>the</sup> <sup>one</sup> <sup>at</sup> <sup>the</sup> <sup>base</sup> <sup>of</sup> <sup>the</sup> <sup>main</sup> <sup>valley</sup>  
below in the navigated series and is another local base  
of the variable sandstone. Eagle Island farther west  
and in part of Middle Arm has deep red strata as a  
local evidence of its presence here of the navigated sea.  
I now see no evidence that the strata are of Upper Cambrian  
age as I supposed when I first saw them  
a month ago.

The <sup>is</sup> <sup>not</sup> <sup>the</sup> <sup>same</sup> <sup>as</sup> <sup>the</sup> <sup>one</sup> <sup>at</sup> <sup>the</sup> <sup>base</sup> <sup>of</sup> <sup>the</sup> <sup>main</sup> <sup>valley</sup>  
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and in part of Middle Arm has deep red strata as a  
local evidence of its presence here of the navigated sea.

August 28 - 1918

Middle Arm.

190

We left O'Rourke's camp at 3:30 and started walking where we hope to find a good place to set our traps. Our main purpose was to be ready to go home on Friday. The weather has been fine all day and we have a splendid trip to walking where we arrive at 6 P.M.

Just as I go into supper she should give me tell about Tynell. We then talked over things and we proposed a little side trip into North Arm where a localite is reported on the top of the mountain. I did not care to go but as Stewart and Brown were willing and as we could get Lawrence and O'Rourke to go I decided to go. I shall remain at walking until my return.

As we go over Middle Arm we see that both sides have the same thin bedded sometimes laminar series, shaded in color. These strike eastward around Black Head and are quite different from at Middle Arm Point a thick mass of micaceous sandstone appears. Further east on a way into Lumber Camp the same thin bedded series consists rather of a shale series, though few are more than thin bedded sandstone and being bedded greenish sandstone. I also saw two thin zones of red shales but neither of these are the equivalent of those seen to the east of walking. Brown follows a series of the micaceous series. I am also now convinced, due to our morning crawl, that the so-called "Tottle Head Series" of local origin is the equivalent of what we saw this morning.

August 28 - 1918 Middle Arm.

John Tyrrell tells me that on Middle Point, the Patan  
is over, on the western shore about one mile south of Signal Point  
there was drilled about 20 years ago a wire hole down to a depth  
of about 1200 feet. Last year Tyrrell found 8 of the pipes full  
of oil. The statement was made to Tyrrell that a Boy had been  
sent out more than \$10,000, but a good deal of washing  
at the place and a large tank of oil. The tank is said to have  
been drilled with oil but no one believes it.

John Tyrrell investigated the place but found no strata  
normal since the oil occurs are but a little to the south on  
S side of the main crumpled then bedded layers with green  
shales. These are well exposed and they are described on page 17. At  
the wells the dip is towards the south and red shales and  
at 1200 feet down they are not likely to be in the Pasigaitu  
series.

General notes on the adjoining areas -

"Beginning on the south side of Middle Arm at a point S. 20 W from  
the point of Reynier Head.

The base of the Patan is angular, not standing on edge. It is  
in contact with the Patan and is well seen. The strata  
and dip are... trending vertically and dipping S. 20 W. The section  
is as follows -

- (a) ...
- (b) ...

August 28-1918. Middle Run

- 200' Black slaty shale, vertical, strike S 13W.
- 10' Dark gray shaly ss.
- 125' Black slaty shale
- 10' Dark greenish gray shaly ss.
- 55' Black shale & shaly argill.
- 5' ss. like that above.
- 30' Black sandy shale
- 55' Dark greenish gray ss. like that above. shaly.
- 165' Black slaty shale, at base, more sandy.
- 18' ss. like that above.
- 27' Black shale
- 48' ss. sandy shale and shale
- 120' Shaly argill. shaly ss. shaly.
- 50' Shaly argill. shaly ss.
- 220' Dark greenish gray to black shale, vertical, strike S 13W. This is the same as that above. The dip here is 20° S. Constant thickness and vertical. Vertical and strike S 13W. with nearly no dip. shaly.
- (2) 300' Black shale and argill. shaly ss. with ss. at base. This is conglomeratic, the matrix is argill. shaly ss. and consisting of quartz and flattened pieces of shell and other in limestone.

193.

Dec 28-1918. Middle Term.

This brings us to the point at the east edge of Broad cre and the strike of the two beds has the same grain about  $\frac{1}{2}$  mile further. In the immediate distance the same is seen. The considerably distant and marked, continuing the section from a rocky point.

50' Heavy bedded grey quartzitic ss. dipping  $60^\circ$  due west. This is, though some and hard, is round broken and distant. It is obviously separated by faulting in the next two points a hundred yards or so apart. In the first of these points it dips  $30^\circ$  due W, and in the next  $45^\circ$  due W. At the last point which is a prominent rocky one the lower part of the section is conglomeratic. The conglomerate is broken by lenses of finer grained ss. The pebbles - the largest are of quartz. About half of them are of clear and white quartz and are well rounded to sub rounded and range in size from  $\frac{1}{16}$  to  $\frac{1}{2}$  inches in diameter, the average being little larger than peas. No shells were seen here. On the other hand there is a range of pebbles of sand rock including shell sandy li. and coal li. of which some of the latter are fully pebbles. These pebbles are too flattened and subrounded to be an average size of  $2\frac{1}{2}$  to  $3\frac{1}{2}$  inches to be that they came up to 2000 miles a cross. In the conglomerate with the nature of many pebbles, the material of sand being a more amount.

The material is a mixture of greenish-grey to red southern red list iron in some of the surfaces.

[The section is continued on page 196]

August 29-1918. Thursday. Carling.

Saw Tyrrell and described with the rest of the party for Matt  
Dum. They got away at 11 A.M.

They packed my chest on the railroad bench for \$5.00  
and returned to the city.

Packed boxes all afternoon, found Thorne and Lilly and  
then

the year a western when, much work.  
later cloud with sky and had a light wind.

August 30-1918 Friday. Carling

A clear morning with some rain.

Packed the morning boxes, now 16 in number. Shipped them  
via the Pacific Bay and Land Railroad in the afternoon.

To morning I went to see Mr. D. He is a new back to Parsons  
Hotel. He tells me that at San Francisco he has located a series of coal  
23 feet thick, 13 feet of which is good coal a series of 10 feet. He  
has it for 1000 feet along a strike. The bed is near a great northeast  
fault. These beds are actually in the Tinto or the same as the latter exists in  
Spain and America, but in the Tinto is above the Cretaceous  
in England?

August 31 - 1918 Saturday, Curling.

Plotted today.

Tyrnell, Curran and Ed. out. Turned up with the  
feet at 4 P.M. Jogged about the mountain in North Arm  
direction to find the mill race but nowhere for signs of it.

Then I had a long talk with Tyrnell about the cost of the  
trip. He agreed that I should pay Edward at the rate of  
\$2 per month and Curran at \$1.00. Also that I  
charge him with \$1.50 to pay for the services of my carter  
when it had a gear a tree fence. He also added that my  
he could help make up some of the cost of my  
travelling, and that if I got into trouble over it to let him  
know. But I could better be independent of them in this  
matter. I went in to place a check on Tyrnell and to  
get it well come. The amount was \$30. Tyrnell  
will pay the rest and I will Mr. Thorne for the provisions  
for the week and for the services of my carter for the same days.

Tyrnell gave me an account of his car, and of  
his trip to the mill. In 3 to 4 weeks he will be home and  
then he will be a mill.

Got back to the mill with \$39.50 and stacked  
my baggage, 5 packages brought to the mill. Also my big  
suitcase.



August 28-1918 Middle Conn. 196  
193

- [ Section ... ]
- 10' Dark greenish-grey sandy ss. in long ridges weathering shaly.
  - 12' Quartzite like but coarse.
  - 5' Dark shaly ... ss.
  - 40' Greenish-grey sand ... ss.

Here there is a dome and beyond it the dip is ... to about due south.

This ... is about ... again. From this point ... is a ... of ... of ... can be detected in places, ... folded and ...



Mount 29-30. North Iron.

... are as follows:-

... in the core ... of the ...  
... on the north ...  
... and ... the mountain ...  
... the next day ...  
... up ...

As we climbed ...  
... a nearly vertical face  
... about 20 feet ...  
... and they dip at an angle of 25° or into the  
... from the floor  
... the ...

Salt ...  
...  
...  
...

...  
...

... it lies above the  
... and ...  
... the deformation  
...

... are made of the  
... a steep ...  
... of  
...



September 1-1918. Sunday <sup>Evening</sup>

Had time to start for home at 10.30 A.M. but the usually late haul did not arrive until 1 P.M.

The fog is dense but it did not rain until late in the evening. We got to Portau Bague at 6.30 and in a few minutes more we were aboard the steamer. At 9.30 it started to drizzle and by 10 a foggy night prevailed to a safe passage. Saw two small men of our race by the island of An. All birds were nearly seen here. We had a late run to ourselves, but I had a few waterfowl, and what I had with me. The life necessities were better and I had a good night's sleep.

September 2-1918. Monday. Nova Scotia.

Arthur's <sup>little</sup> brother Tom had to visit and we arrived  
at the North Spring at 6:30 A.M. Had a light breakfast  
aboard and at 7:00 we were off on the train where we  
arrived at 4:45 P.M. Had dinner on the train and  
supper at the Hardy House at Truro.

Left Truro at 6:20 <sup>P.M.</sup> for St. John's and arrived  
at 5:45 A.M.

September 3-1918. In route in Canada

Arrived at ~~Truro~~ at 9:15 P.M.

Stopping at ~~Truro~~ <sup>St. John's</sup>

Sept. 4-1918

Left Truro at noon and got to  
New Haven at 5 P.M.



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225 Second of the year well August 31 -- \$100<sup>00</sup>

Expense Account.

937 03

August 2	Paid Mr. Burns at Bureau for the use of the land and interest for the day.	3.50
9	Paid Mr. Blandart for use of rooms at Bureau and	5.00
10	Room rent at St. Ann's Harbor	1.00
10	Bare W. Edwards for incidentals	10.00
8	" " " change of paint etc	2.00
15	Bare Edwards on account of ...	1.30
15	Advanced Edwards on account	5.00
21	Telegram & News Service and ...	.33
23	W. Lemire for incidentals	3.00
25	" " " " " "	1.50
27	Board at Bonne Bay for <sup>in day</sup> five men	8.80
29	Paid ... balance on ... <sup>53.39</sup>	53.39
29	Paid ... balance on ... 37.09	37.09
30	... on 16 hrs <sup>104</sup> ...	1.00
31	Paid to ... for 42 days @ 3	126.00
31	" " a present to Lemire	10.00
31	" " for incidentals of this account	20.00 before
31	" " James & Renke for 42 days @ 2.50	105.00
31	" " " " a present	5.00
31	... to Boston 3 at 639.5	118.65
31	Paid freight on boxes to Sydney (return)	3.78
31	Bare W. Edwards on account	10.00
		<u>1464.03</u>

1469 07

Let.	1	Parsons Hotel for 4 days @ 2	14 00
"	1	R. Lemoine for incidentals 49.93 Take off here what I paid him before.	49 93
"	1	3 dinner on cars, kept.	4 00
"	1	3 deeper seat	2 10
"	2	3 breakfast in train	7 00
"	2	3 dinners in room	5 00
"	2	3 supper at Adams House	2 25
"	2	3 deeper Transit of the line for 3	4 50
"	2	3 breakfast	1 50
"	3	3 breakfast at Adams	2 10
"	3	3 supper on train	2 00
"	3	Transit of baggage at Boston	3 50
"	4	3 breakfast at Adams House	2 25
"	4	Exchange in C. money of 128.30 @ 2 1/2%	3 33
"	4	Share C.O. Denton on account	54 00
"	4	" " Mr. Edwards " "	50 00
"	4	Room for 3 at Adams House	6 00
"	4	Transit at Boston	1 50
"	4	3 R.R. Boston to N.H. @ 5.09	15 27
			<hr/>
			1644 07

Ince Edwards 110 00  
 Ince Denton 281 00  


---

 Total 2035 07

Cost of trip:  
 charged to Ince 1918.16

## Boxes

- Box 11 Chazy material from the local syncline, in the  
Island and Towns. Also some Phylloptera.
- Box 12 Material from Pearson Pond.
- " 13 material from Tattle Creek
- " 14 " " " " and Port au Roy. Also  
Hanks Bay.
- " 15 Hanks Bay material.
- " 16 Odds and ends of last few days.

at the

of the

by the

C. M. Jack  
Pratip  
Merchant of East  
Cruz mark - lam. h  
Information from Lavoire.

