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North shore Lake Huron, Canada: [specimens] 4390-4499, 6500-6575. No. 4 1883-08

Irving, Roland Duer, 1847-1888

[s.l.]: [s.n.], 1883-08

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U. S. GEOLOGICAL SURVEY

FIELD NOTE BOOK

No. 4.

Aug. 1883.

North Shore Lake Huron

Canada.

{ 4390 - 4499
6500 - 6575 }

R. D. Irving.

Survey of the Pre-Cambrian Rocks of the N. W. States.

INSTRUCTIONS.

1. Devote at least two pages of this note book to one section. On the left hand page place a map of as much of the section as has *actually been seen*. Denote rivers, lakes, marshes, etc., by the usual topographical signs. Denote the ledges of rock, when no structure is made out, by cross-hatching, making the cross-hatching cover as nearly as possible the areas occupied by the exposures. If the rock is a massive one, but still more or less plainly bedded, use the same sign with a dip arrow and figure attached, showing the amount and inclination of the dip. Denote slaty or other very plainly bedded rocks by lines running in the direction of the strike, with figures and a dip arrow attached as before. To each exposure on the face of the map attach the number of the specimen representing it. In mapping the section count each of the smaller spaces as 100 paces, each of the spaces between the red lines as 500 paces, and four of these large spaces as one mile, or 2,000 paces. Usually the southeast corner will be placed at the first red line above the bottom of the page and at the right hand side. If, however, for any reason, it is desirable to show portions of an adjoining section, the southeast corner may be shifted up or down one space, or the map may be turned around and the north placed at the left hand side of the page.

2. On the right hand page place the notes descriptive of the exposures. Begin in each case with the number of the specimen, after which give in order the position of the ledges as reckoned in paces from the southeast corner of the section, and the dip and strike when observable, for instance: 4025; 250 N., 300 W.; *Strike, N. 6° E.; Dip, 50° E.* Then follow with as full a description of the exposure as possible. Very often the notes for one section will cover more than one page in which case pass to the next right hand page, *repeating the map on each left hand page* as long as the notes, with regard to one section, continue.

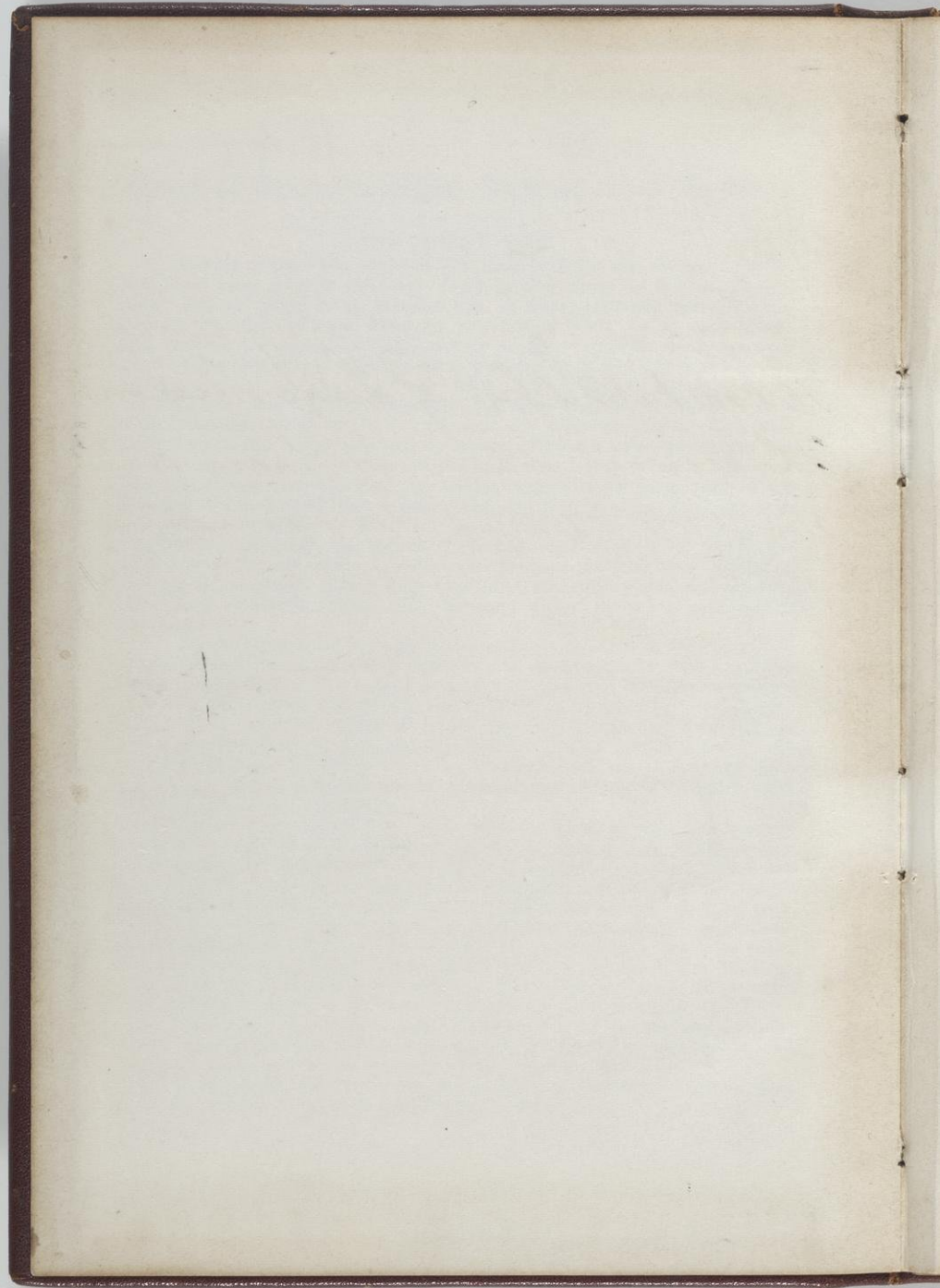
3. Collect a specimen from each separate ledge of rock, or whenever there is a change of rock on any one ledge. In case of trips made on foot or in canoes, for long distances, neighboring ledges, unquestionably of one kind of rock, need not be sampled, the position and extent of the ledge being marked on the map, with the note that it is of a rock identical with specimen so-and-so. Under the same conditions small sized samples will be allowed, but in all other cases *large sized trimmed specimens*, with chips for slicing, must be selected in accordance with § 3, chapter IV, p. 44, Regulations of the U. S. Geological Survey. All specimens are to have numbers painted on them, in white on a black background, in camp.

4. On the last twenty-five pages of the book give, as may seem desirable, a general account of the examination of the region mapped in the previous pages, correlation of observations, etc., etc.

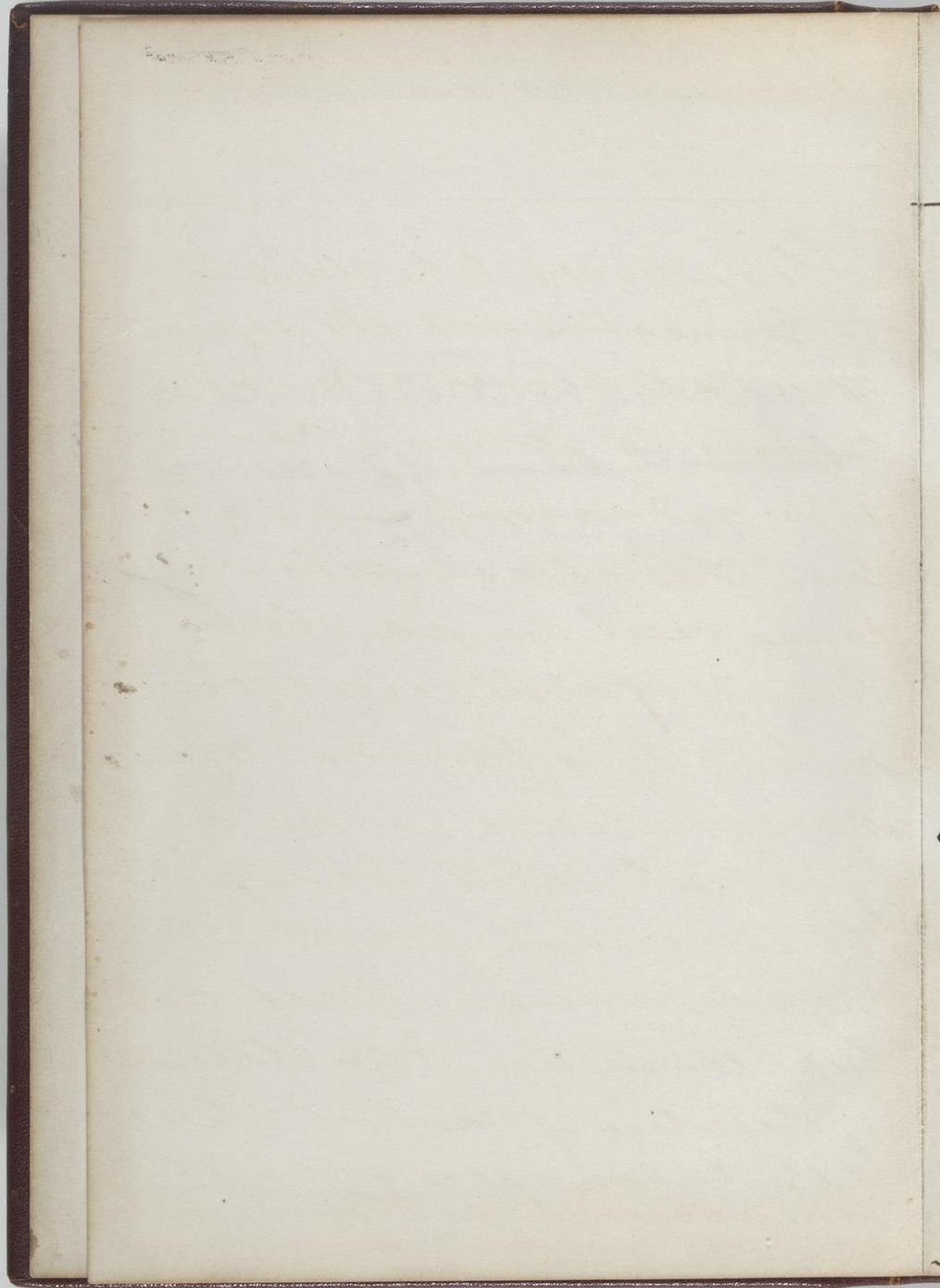
5. Forward this note book, as soon as filled, as registered mail matter, to R. D. IRVING, U. S. Geologist, Madison, Wisconsin.

#4

North Shore of Lake Huron.



Notes taken by R. D. Irving on
the north shore of Lake Hur-
on. August 1883.



For further notes on the Original
Baronian. See note book No
by C. R. Vanhise

These notes are to be studied
in connection with the reports
of the Geol. Survey of Canada -
especially "Geology of Canada"
1863. and accompanying at-
las. The object of the trip
having been simply the ac-

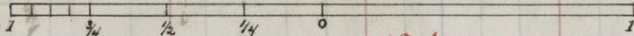
quiring of sufficient familiarity
with the type formation to make
it possible to use it as a
type with which to compare
the American formations,
the notes are only brief, and
supplementary to the statements
of the Geology of Canada, which
in the main were found to be
very accurate and trustworthy
R. D. Irving

Sec.

T.

R.

Statute Miles



North



Aug 3rd
1883

"Upper Slate Conglom. 3f"
Hallarys River. Squirrel
Island Channel.

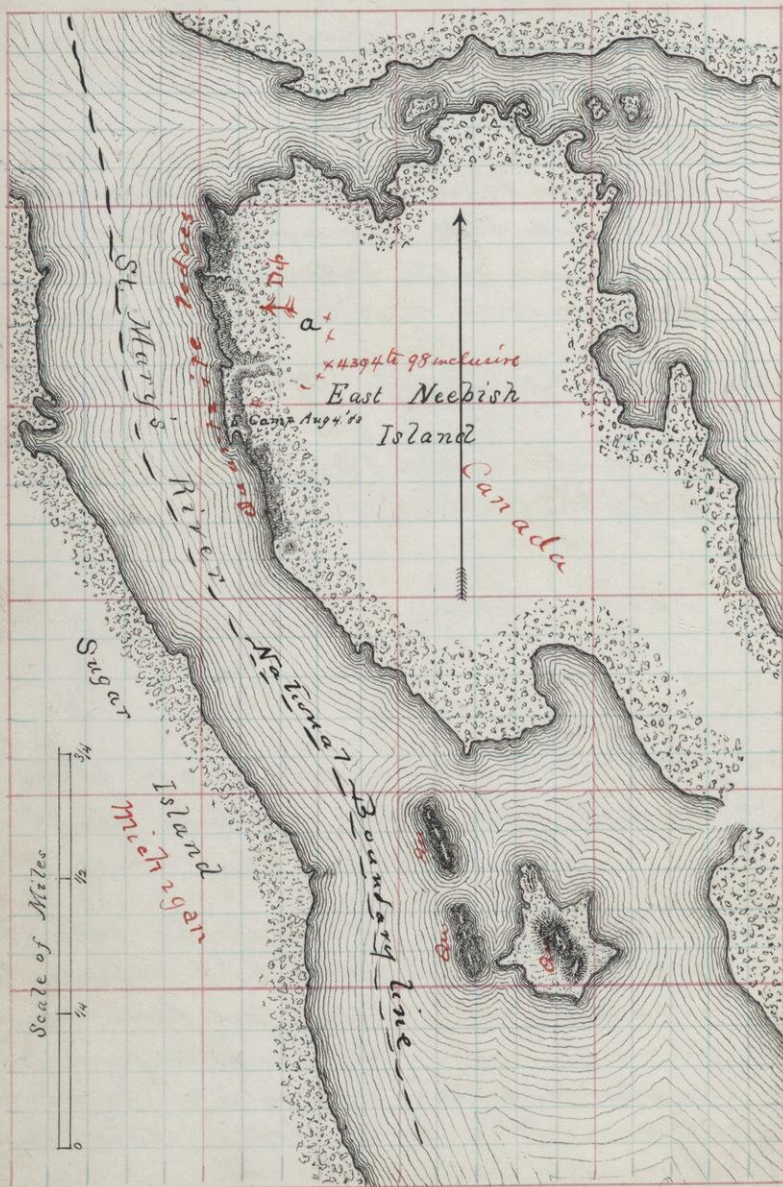
- 4390 Greenstone from foot of cliff on high bluff opp. Squirrel Island Channel. Canada side. From point marked "97" on Logan's map, below named. Compare with my "orthoceras gabbro"
- 4391 From near top of above cliff
No structure visible except a pointage into the hill.
- 4392 Calcete vein; fragment from tatus gabbro cliff.
- 4393 Fragment of coarser rock than usual from tatus gabbro cliff.

This greenstone is one of the interstratified layers of Logan's "3f" "Upper Slate Conglomerate". Allas geol. Surv. Canada plate III. See Vanuxem's book for notes on slates of this vicinity. I saw none adjacent to the greenstone of this bluff.

Sec.

T.

R.



See also escape pp 18

Aug 4
1883.

"White Quartzite 3i"

2

East Keewik Island.
St Mary's River.

4394 Pebbly quartzite included in the quartzite series of Keewik Island. Note the crystalline facets of deposited quartz. The pebbly phase is not a usual one, and is present chiefly in the lower layers.

4395 Show the more usual phases
4396 of the Keewik quartzite. 4398
4397 includes only chips for slicing.
4398 Dip 25° to 28° W. determined on a number of large surfaces.

On Keewik island and on the islands and mainland in the vicinity there is a great show of Quartzite, "3i" of Logan's Scheme, rising into broad hills of bare and beautifully "arche-mountain" rock. The glaciation is the finest I have yet seen. The "arche-mountain" surfaces are polished as smooth as glass, and striated about N-S. magnetic. The dip shows finely, not only in great bedding surfaces, but

Sec.

T.

R.

See map opp p. 2.

"White Quartzite 32"
East Keeweenaw. Cont.

3

in the general contour of the hill, the layers succeeding each other in this way, the

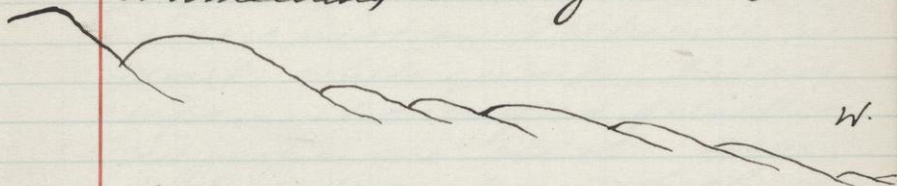
E



W

Strike being about 15° W. of the magnetic north.

Logan (Geol Canada) speaks of difficulty in determining dip among these great ledges. To me it seems very well and strongly marked. The whole hill rests on Keeweenaw island is a succession of dip surfaces facing west or something south of west. Thus:-



W.

The top of the island is some 300 feet or more (estimated) above the river. Besides the several main rises of which the hill is made, the dip may easily be made out from thinner layers and from small areas.

~~Sec.~~~~T.~~~~R.~~

See map opp. p. 2.

East Needbit Continued

This quartzite, all tends to be very distinctly arenaceous, and though much indurated is entirely without the peculiar appearance of the Rib Hill (Wis) quartzite, i. e. always shows indications of clastic origin. For the most part it is white or slightly tinged with cream color. Through most of the thickness examined pebbles were not seen - but in some of the lower layers seen become somewhat plenty, and even aggregate here and there, into beds made up almost wholly of small pebbles. The pebbles are mostly white quartz, but not infrequent ones of red felsite or red jasper are visible. Hard is the rock composed wholly of small pebbles.

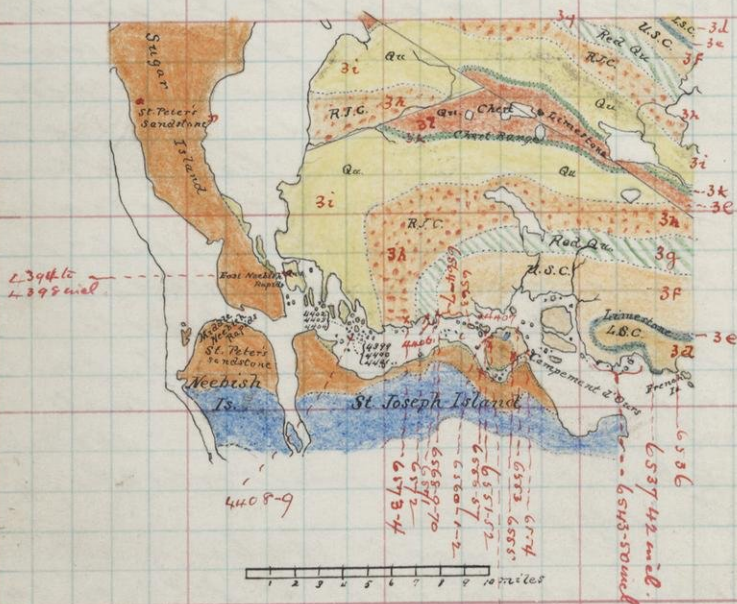
Fragments of this quartzite were seen in several places carrying specular iron - but this association was not observed in rock seen in "Silo".

Sec.

T.

R.

From Logans Map. Plate III.
Atlas Geology of Canada.



"St. Peter's Sandstone" = the Lake Superior S.S.

6558-59

Aug 6
1883

"White Quartrite 32" 5
Quartrite Islands below Keetich

4399] Quartrite specimens from
4400] different islands of this
4401] group. It is all of the
same general character, but is
at times very pebbly, the common
pebbles being of white quartz.

4402] Specimens of "greenstone". Taken
4403] from three different islets,
4404] apparently lying in a nar-
row belt among the quartrite
islands. Presumably they in-
dicate a dike, but possibly
a bed. The direction of the belt
indicated is about S.S.E. Logans
map has "97" marked approx-
imately in this vicinity.

Aug 7
1893
H405

Upper slate Conglom. 3 ft
Tarbot Township

6.

"Slate from ledges on line
between townships of Tarbot
and Johnson - Lot 1, concession
1." From Mr MacLennan of
MacLennan's Landing. north
Shore Lake Huron. Note similar-
ity to Animikie Slates. From
Logan's "Upper Sl. Conglom."

Sec.

T.

R.

See map opp. page 5.

Aug 7 "Red Quartzite 39" Logan 7

1883

McClelland's Landing

1.5h. Lake Huron.

4406 Red quartzite from McClelland's
landing. Logan's "39"

Sec.

T.

R.

See map opp. page 5.

Aug 7
1883

"Upper Plate Conglom. 3 ft" 8
Point
Island north of Campement D'ours

4407 slaty quartile from above
island. Belongs to Lagers
"3 ft" upper slate Conglomerate.

Sec.

—T.

—R.

See map opp. p. 5.

"White Quartzite 32"

9

Aug 7
1883

Quartzite Islands S.E. of Mac-
brish Rapids

4408

4409

Realty quartzite from above
islands. (Logan's 32)

Aug 7
1883

Lower Slate Conglom. 3d.

10

Palladeau Islands

4410

Slate from one of Palladeau
Islands on which camped.
Aug 7th. Highly Glaciated
Dip N.N.S.

Striae and grooves N.N.S.
Logan's "3d" "Lower Sl. Conglom."

~~Sec.~~

~~T.~~

~~R.~~

See map opp. p. 10.

Aug 8
1883

North Shore of Lake Huron
Laurentian area

HH 11 Banded gneiss, with intersecting
HH 12 granite veins.

HH 13 Granite or gneiss. Point at wh. camped
Aug 8 '83

HH 14 Greenstone dike cutting 4413 -
25' wide - N. 65° E

HH 15 Rock of same dike near trail

HH 16 Granite at contact with 4415.

HH 17 Granite near the contact

This contact is an irregular line.

Aug 9 1883

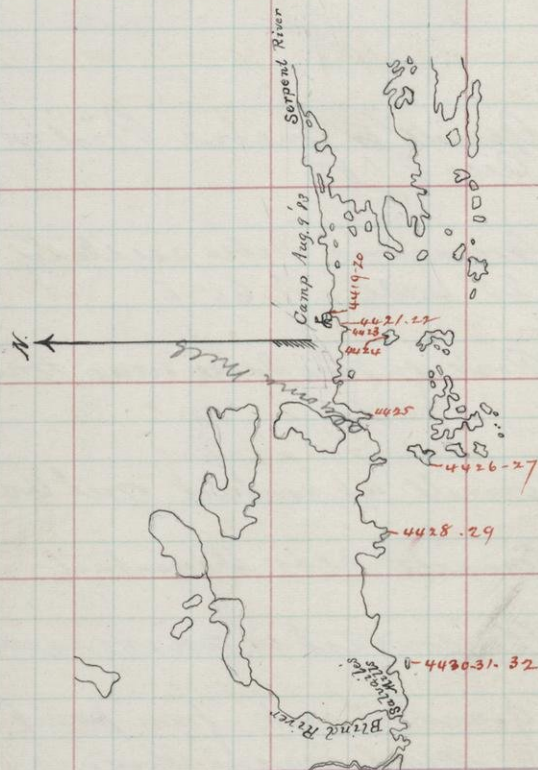
HH 18

Granitoid rock from point S. of mouth
of Mississauga River.

Sec.

T.

R.



Scale 6 miles to 1 inch

Aug 10
1883

12

Mouth of Serpent River Bay.

Mica schist appears to prevail all about the entrance to this bay.

HH 19 Mica schist from main land near mouth of bay - at camp of Aug 9th.

HH 20 A more quartzose belt than usual of the mica schist - following the schist structure, and hence suggesting that schist structure and bedding correspond.

The schist structure appears to be merely a close series of intersecting joints. Thus:



The numerous points and islands here all trend with the schist structure i.e. W.S.W. magnetic.

Magnificent & casual grooving cut the schist structure at a small angle. These grooves run S.W.-N.E. The whole

Sec.

T.

R.

See map opp. p. 12

Aug 10

Serpent River Bay. Cont. 13

1883

effect is a very striking one.

4421

Following this ledge along the beach, westward, we find a more quartzitic schist, a variation from the rest, with lighter color, and showing well the lamination due to sedimentary deposition. This is a layer, perhaps 70 to 100 feet wide, interstratified with the prevailing kind. It suggests the rocks of Glorvne Lake Minn.

4422

Fragment of a large gneiss boulder wh. we took at first to be pebbly - but a closer inspection showed that they are very large porphyritic feldspars rounded somewhat - orthoclase & co.

4423

Slica schist about 100 rods along beach from 4419. Relected because showing lamination so plainly. This comes out with especial prominence on the waterworn and glaciated surfaces.

Sec.

T.

R.

See map opposite p. 12

Aug 10
1883

Serpent River Bay. Cont.

14

4424 Granite from Island at mouth of Serpent River Bay. This island is wholly granite like specimen. The mainland and adjacent islands being all mica sch. it appears that we have here a "bas" or lens of granite. This granite is structureless. being traversed only by irregularly arranged joints.

4425 Mica Schist from mainland. Projecting point two miles west of a-bon island.

4426 Aquartz Schist from island at mouth Serpent River Bay. Evidently it is a phase of the prevailing mica sch. of the vicinity.

4427 From same place as 4426
This schist stands vertically, and trends N. 70° E. magnetic. It is glacially marked with fine grooves running N. 25° E. Magnetic.

Sec.

~~T.~~~~R.~~

See map opposite p. 17

Aug 10
1883

15

Islands on Shus Lake / Karon below
Blind River and mouth Serpent
River Bay

4428. Greenstone-like rock from small rocky islet $\frac{1}{4}$ mile off shore, and six miles east mouth of Blind River. This rock may be schistose - but it is so completely rubbed down by glacial action that no structure is visible.

4429 A finer-grained phase of 4428. Nothing was seen to indicate relation of this rock to adjoining rock masses of the coast.

4430 } Three phases of a rock somewhat similar
4431 } to the last, from small glaciated islands
4432 } one and one half miles east of mouth
of Blind River.

The glacial grooves are unusually fine here.

~~Sec.~~~~T.~~~~R.~~

See map opposite page 10.

Aug 11

1883.

16

Point west, $\frac{1}{4}$ mile, of Blind River

HH 33 Boulder. Selected because it looks as if it might be a case of very leucocratic gneiss. from camp of Aug 10th

HH 34 } Represent the rock in place at this
HH 35 } point. It appears to be a quartzite. It stands vertically with distinct bedding, and trends as have the mica schists - all along from Serpent River Bay. Logan makes the Laurentian as coming in here. So he is probably right. and should not the mica schist of Serp. River Bay be also marked as Laurentian. However this may be the rock is a quartzite, and not a gneiss. There is a very distinct laminaration of finer and darker lines, and often a very pronounced false bedding is visible. Dip - 90°. Trend S. N. E. This rock continues west somewhere HH 18 was taken. See p.

HH 36 From $\frac{1}{4}$ mile S. of HH 35

HH 37-8 From same point as HH 18

Is this quartzitic rock possibly a phase of gneiss?

Sec.

T.

R.

See map opp. page 10.

Aug 11

1883

Mississaugie River

17

4439 From east bank mississaugie
R. from just above forks.

4440 400 ft up stream from last point
also on east bank

4441 Rock at rapids of M. river $\frac{1}{2}$
mile above forks. a reddish
granite like rock 4440 ap.
presents to continue up stream
to 4441

Sec.

T.

R.

See map opp. p. 10.

Aug 11
1883

18

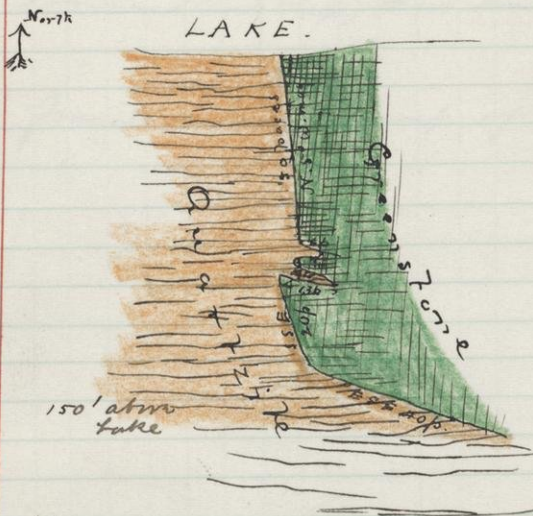
Musserague River Bay

HH42

Quartzite from large island on south side of this Bay. Exactly the same quartzite-like rock as has carried through from east of Blind river. It shows the same laminations or false bedding dip high to S.E. Strike S.W.

HHH3

Greenstone from large dike traversing HH42



The East wall of the dike was not seen, but it is over 100 feet in width. The nature of the contact, and the traversing of the bedding of the quartzite by a greenstone

Sec.

T.

R.

See map opp. p. 10-

Aug 11 Mississaugui R. Bay. Cont. ¹⁹
1863 make it certain that the culture
is truly interesting & eruptive.

4444 Granite from islands near mainland
west side mouth Miss. R. Bay

4445 Delas rock. Delas 3 feet wide inter-
secting 4444.

4446 Another delas in 4444 cutting 4445-
Omo. columnar.

Both delas are very irregular as
to course (and dip) and width.

4447 } Granite or gneiss, camp of Aug 11-12
4448 }

Sec.

T.

R.

see map opp. p. 10

Aug 12
1883

20

Laurentian Crn. N. Shore L. Heron
between Messinagui and Thersalon
Rivers.

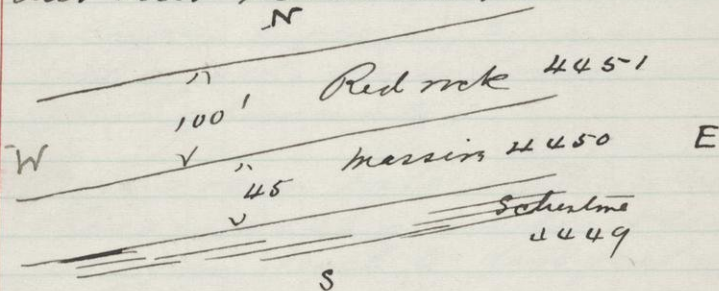
hunters run from west to east.

4449 Trends E.N.E. Somewhat schistose - dark colored.

4450 Same place as 4449 - 20 feet across
Strike - from massive

No distinct banding seen here. Sim-
ply alternences of schistose struc-
ture. This more marked in
some places than others.

Further examination brings
out this relation: -



4457 Interbanded with 4450 so. as indi-
cated above

The shore along here is a net work of
low islets of rounded rock, sometimes

Sec.

T.

R.

See map opp. p 10-

Aug 12

Laurentian Area - Cont.

21

1283

Within the lake south island on which above specimens were taken, several rocky islets of 4449 show that there is a considerable width with the belt of that rock.

4452

From islets south again of those just mentioned - so that this is the belt succeeding 4444 to south, i.e. underlying it 4452 is very highly porphyritic with large perphyritic outcrops, sometimes 1 inch to 2 inches across. These weather out very prominently making a bright red on a purplish & yellowish background. These are left standing in relief and the rock looks like a conglomerate.

4453

From a vein intersecting 4452 these reddish granitic veins are from 1 inch to ten feet in width and intersect 4452 in every direction, interlacing with one another and frequently branching.

4454

Three fragments fitting together

~~See.~~~~T.~~~~R.~~

See map opp p. 10

Aug 12 Laurentian area. cont. ^{enters} 22

1883

and representing the ¹nd ch
zone of the veins.

The veins are distinctly
coarser in middle than on
the sides.

4455 Iron islands East of 4452 cc -
Appears to belong to a more
fractured belt than any of the
above.

4456 } From different points near to
4457 } but East of 4455 - Do they
not belong to an Eastern
Continuation of the 4449
belt?

4458 Greenstone dike intersecting
4457. An irregular much
jointed dike, 1nd ch not seen.

4459 Greenstone dike cutting granite
on coast East of 4458 - This
dike is 50 feet wide and trends
E.W. It includes an east and
west zone of granite, 4 ft. each
wide, and 13 ft. long. Other
patches of granite are also in-
cluded.

4460 Iron junction of 4459 with wall
rock.

Sec.T.R.

see map opp. p. 10

Aug 12
1883

Laurentian Area. Cont. 23

4461 $1\frac{1}{2}$ mile E. of 4450.

The result of the afternoon's work is the establishment of the existence of distinct belts among these gneissic and granitic rocks -

~~See.~~

~~T.~~

~~R.~~

See map of p. 10.

Aug 13
1883

24

Lawrentian Area. Cont.

- 4462 Much red granite showing a gneissic tendency, shows along the coast for six miles west of 4447-8. 4462 is this gneissic rock. The specimen shows the parallel structure
- 4463 from short distance west of 4462 shows the E-W. gneissic structure very strongly. But the rock is much faulted and intercalated by granite veins
- 4464 granite vein cutting 4463
- 4465 Red gneiss ^{three} ~~ten~~ miles west of 4464. The same red gneiss with red veins as before. It evidently runs along distance along the coast
- 4466 Five miles further west - i.e. west of 4465. The gneissic banding is very marked, as before interlacing red granite veins intersect the gneiss in every direction. The veins range from less
- "Les Grandes Sables"

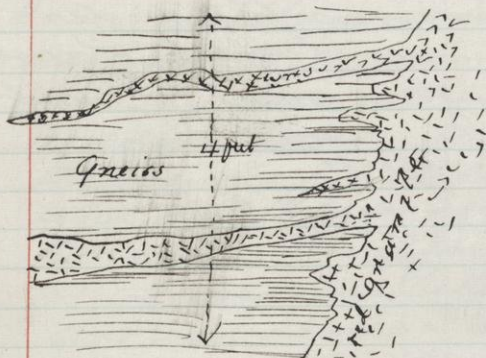
Sec.T.R.

see map opp. p. 10

Aug 13
1883

Laurentian Area Cont. 25
Les grandes Sables

than one inch to ten or more feet in width, often ramifying and running irregularly into the gneiss, thus: -



4468 Red granite veins intersecting
4466

4467 See next page

4469 Greenstone dike 22 inches wide running N.W. but with a curving course, and apparently sending off little veinlets into the gneiss. Intersects 4466 and 4468. See photog. neg. no 1883.

4490 is from one of the ^{black} veinlets supposed to branch from 4469. Possibly these veinlets may connect in depth

Sec.

T.

R.

see map opp. p 10

The following is the order
of the specimens from the Lauren-
tain area, from west to east

west

4451-52

4471-72

4466-7-8-9-70

4411-12

4465

4463-64

4462

4449-50-51

4452-53-54

4455

4456

4457-58

4459-60

4461

4467-68

4413-14-15-16-17

4444-5-6

4442-3

4418, 4437-38

4436

4434-35

East

Aug 13
1883.

Laurentian area. cont.

26

"Lesfrancs
Sables"

with the dikes 4469

The little red granite veins
above mentioned (4468) branching
from the larger ones often
traverse the gneissic lamina-
tion and again are parallel
with it. Are then all the
reddish bands parallel with
the gneissic structure intrusive?
and not part of the gneiss?
Consider carefully the con-
stant relation between gneiss
and red veins. Do gneiss ever
omit these veins?

4467

is one of the bands (very narrow)
spread in the gneiss, and parallel
with it. Is it part of the gneiss
or part of the intrusive granite?

4471

From a granite island about
200 feet below base of Huronian.
Two miles east of Thetford Point
There is also a gneissic phase
exposed on the same island.

4472

represents this gneissic phase.
4471 veins 4472 as before.
See also diagram, text page 29.

Sec.

T.

R.

See map opp. p. 10.

Aug 13
1883

27

Base of the Huronian Two
Miles E. of Thessalon Point.
Logans "3a"

The Base of the Huronian is found about ten miles East of Thessalon Point, on an island. composed of very striking and interesting conglomerate, - a boulder Conglomerate. This conglomerate then belongs in Logans "3a" or "grey Quartzite".

4473 Fragments broken from the boulders of the above conglomerate. The boulders are thickly rounded, largely subangular. often two feet in diameter, and from this down to small particles. The boulders are prevaillingly whitish granite and gneiss, gneissic pebbles being not at all infrequent. They are they whitish, rather than red dish boulders, as one might expect from the nature of the immediately underlying gneiss.

Some boulders of a greenish Crystalline rock are represented in 4473.

Sec.

T.

R.

• See map opp. p. 10

Aug 13

1883

28

Base of the Huronian Cont.

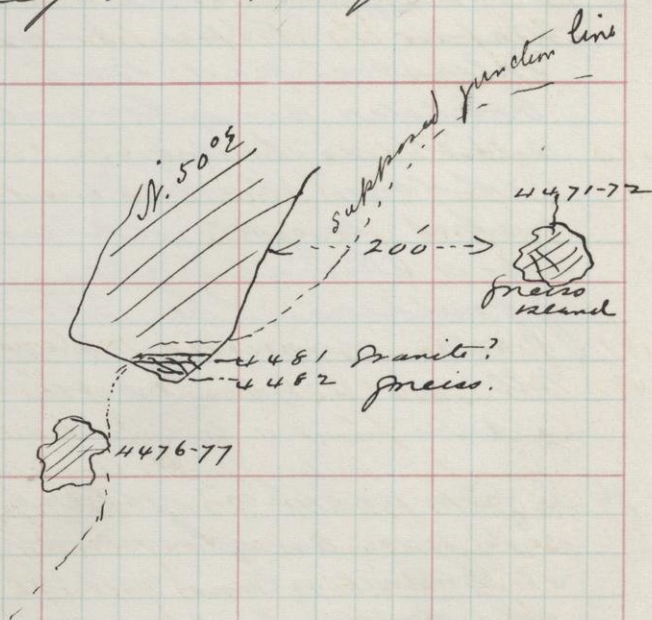
- 4474 From bands of non-conglomeratic quartzite - arenaceous - These bands are interstratified with the boulder conglomerate, and enable us to determine the bedding direction. Typically in what might otherwise look like a structureless heap of boulders. The strike is $N. 50^{\circ} E.$ magnetic - and dip $N. 40^{\circ}$ to 30° - nearer the latter figure
- 4475
- 4476 is from another of these interbedded iron-conglomeratic beds on a small island off the south point of the island.
- 4477 These interbedded layers show often fine particles or fragments of same nature as the large boulder, 4477 shows this; from same small island as 4476
- 4478 From the larger island. Showing
- 4479 matrix and larger pebbles together. Owing to nature of the matrix, and to subsequent quartz-infiltration, it

Sec.

T.

R.

Sec. 10 - map.



Pass of the Harrobian cont ²⁹

is often difficult to tell where a pebble begins and matrix ends - i.e. on a fresh fracture. On the weathered surface the distinction is always sharp.

4480 selected as showing the same thing as 4479 - Shows also the weathered surface of a pebble.

4481) granitic and gneissic material from
4482) the South East corner of the main island. There appears here to be a junction between the Conglomerate and the granite. But the appearances are somewhat confusing, and we did not stay long enough to unravel them. These rocks are undoubtedly in place here. See sketch opp page.

The contour of the Conglomerate island shows the N.W. dip very nicely. The East side is steep and precipitous, the West sloping. The structure is somewhat modified by the usual glaciation.

Sec.

T.

R.

See map opp. p. 10

Aug 14
1883

30

Pass of Huronian Cont.
Conglomerate Island Two
Miles S. Thessalon Point

Returned this a.m. to this island.

4483 Shows decomposed nature
of the conglomerate. Showing
it a little better than 4478-79-80
from same place

4484 Quartzite ("3a - Grey Quartzite")
from island 400 feet (est.)
west of conglomerate island.

10

~~Sec.~~

~~T.~~

~~R.~~

See map opp. p. 10

Aug 14

1883

31
"Chloritic Slates" "36" of Logan.

About the mouth of Thessalon R.

- 4485 Specimens taken in order from
4486 East coast, at short inter-
4487 vals, beginning at junction
4488 with Logan's "3a" a grey Quartzite
4489 and continuing westward
4490 to a point about $\frac{1}{2}$ mile
4491 East of mouth of Thessalon
4492 River.

- 4493 The general appearance
4494 of these rocks marks that of
4495 a succession of beds of serpentine
4496 greenstone. I could not see anything
4497 slaty about them - see specimens.
4498 The amygdaloid mentioned by

Logan as occurring near the base
of this succession I could not
find, though I searched diligently.
It probably is nothing like the
true amygdaloids of the Keweenaw
Series.

- 4499 From the east side of Thessalon Point, about
midway of its length.

6000 From island 2 miles N.W. from
Thessalon Point.

Sec.

T.

R.

See map opp. p. 10.

Aug 14
1883

32

"White Quartzite 3c" of Logan
West of Thessalon Point

6501 } Quartzite from islands $3\frac{1}{2}$ miles
6502 } N.W. Thessalon point. Flat northern
dip. White pebbles plenty.
Steep south side - flat northern
slope corralled

6503 Quartzite from mainland west
by west from above Island - West
of mouth of stream.

As along here the mainland Coast
shows very large and fine expo-
sures of this Quartzite, dipping
west flat - not more than
 10° . Bedding very distinct.
Suggests in places like outcrops
and not very heavy layers, some
greenish more modern rock.
beds usually 2 feet to 4 feet
thick; sometimes quite thin.

6504 $\frac{1}{2}$ mile west of 6503 on coast.
Exposures rise now in steps
inclining gently inland, to
a height of 75 feet (estimated).

6505 Quartzite from point $4\frac{1}{2}$ miles
N.W. by W from Thessalon point. Ruffs
of quartzite are continuous to
here from 6503, and still further

Aug. 14
1883

"White Quartzite 3c." cont. 33
West of Jerusalem Pond

cont.

At this point (6505) the exposures are peculiarly fine - see negative to 1883 for view where edges looking inland - or about N.W. The bedding here is still flatter than before and the quartzite is distinctly arenaceous. Lamination lines very distinct.

6506 Conglomerate occurring in thin seams below the bed of 6505

6507 Dike cutting 6505 - This dike is 30 feet wide running ESE. magnetic. A fine grained friable, after much staining with epidote - all through the thickness of the dike, whose nature is quite unmistakable, a distinct foliation structure (parallel walls roughly) may be seen - strongest near sides. The wall rock and contact are all finely exposed, and there can be no question that we have here not a true intersecting dike. The bedding of the wall rock is barely seen up to the dike.

~~Sec.~~~~T.~~~~R.~~

see map opp. p. 10

Aug 14
1883

34

White Quartzite 3c Cont.

West of Thessalon Point.

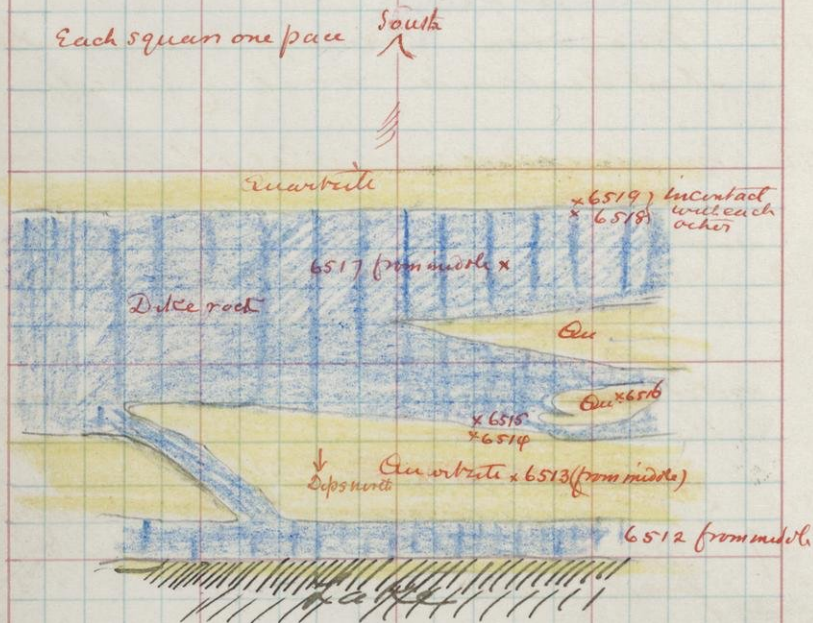
6508 A longer dike 150 feet wide
running parallel to 6507
intersecting 6505-

~~Sec.~~

T

R.

See map. opp. p. 10



Cut of section of dikes on inlet S. pond Bruce
line Bay. plan.

Aug 15

35

1883 "White Quartrite 3c" of Logan.

East side of Bruce Allen Bay

6509 Quartrite from mainland south side East point Bruce Allen Bay

6510 Greenstone forming rocky islet short distance west of 6509

6511 Greenstone composing islet off Eagle Point. Apparently dipping N.

6512 ^{another} Islet 150 feet south of 6511 - Dike rock. This islet is of quartrite and is completely mottled with dikes. Dike 6512 gets finer near the sides

6512 } Specimens of dike rock and Quartrite from
6513 } the west end of this islet, as per sp.
6514 } print and sketch.

6515

6516

6517

6518

6519

Columnar structure in the dikes

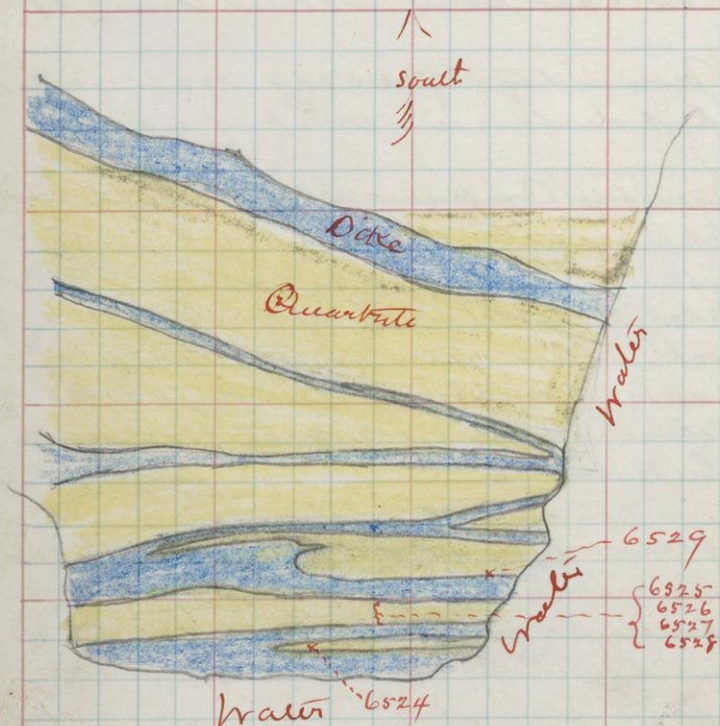
6520 Quartrite from same islet 10 feet from nearest dike wall.

Sec.

T.

R.

See map opp. p. 10



Scale 1 pace to side of each square

Aug 15
1883

36

Quartzite 3c" Continued

East Side Bruce Idles Bay

- 6521 From north Edge of one of the dikes on the East mentioned islet - Not figured in sketch.
- 6522 From middle of dike 6521
- 6523 From south Edge same dike as 6521 and 22.
- 6524 From a quartzite beam embracing whole north between two contiguous dikes. See sketch opp page, by Mr Merriam - Same island as before
- This sketch shows six dikes in a row of 30 (thirty) feet. There are entirely north of those above mentioned, and are counted, in all, 15 dikes in 120 feet across the strike of the quartzite.
- 6525 } taken in order across at nearly inch
6526 } space of quartzite between two
6527 } dikes, 6525 and 28 being in contact
6528 } but the dikes on either side.
- 6529 Showing Contact of Quartzite and dike rock at above place.

~~See.~~

~~T.~~

~~R.~~

See map opp. p. 10

Aug 15-
1883

37

"Quarbitate 3c" Cont.

East Side Bruceellens Bay

- 6530 Greenstone (intersecting ^{or interbedded?}) from
East side B. mine Bay.
- 6531 Granitoid vein 6" wide. cutting
6530
- 6532 Greenstone shows in numerous
6533 low outcrops along here. Pre-
6534 sumably it is continuous and
partly an interbedded mass.
This just east of old Bruce
ellens.

Sec.

T.

R.

See map opp. p. 5.

Aug 15
1883

38

"Lower Slate Conglom. 3d"

near Bruce Elias

- 6535 Vanheia found numerous bone fragments of plate like this in the vicinity of the old Bruce Elias -

French Island Point

- 6536 Greenstone from this point -
Entirely interbedded

Sec.

T.

R.

See map opp. p. 5-

Aug 15th
1883

39

Limestone 3e" of Logan

One mile west of French Ids

- 6537 } All represent this limestone
6538 } and its peculiarities of
6539 } weathering. It runs along
6540 } in Cow Leiges just as Logan,
6541 } Camp shows it, and pre-
6542 } sents all the peculiarities
of appearance and weather-
ing as described forl. Can.
1863.

Sec.

T.

R.

See map opp. p 5.

Aug 15th
1883

40

Upper Plate Conglomerate 3rd

Between French Islands and
Campecheut d'Aurs

6543

6544

6545

6546

6547

6548

6549

6550

Specimens collected along
coast for some three miles
west from 6542 ac (Cementine)
The numbers do not ex-
press any geographical
order.

Sec:

~~T.~~

~~R.~~

See map opp. p. 5

"Upper Slate Englem 3f"

Aug 15
1883

Campement D'Ours Island
and vicinity

6551 } Island off n.w. corner of Camp-
6552 } ment D'Ours

Aug 16
1883

6553 North east side Campement
D'Ours

6554 East coast Campement D'Ours.

6555 Quartzite - S.E. side Camp-
ment D'Ours - near junction
with overlying Bradam sand-
stone.

6556 Quartzite from shore of
St Joseph Island, oppo-
site southwest side of Camp-
ment D'Ours

6557 A phase of 6556

Note that on Logans map
the rocks along here are
colored for "3f" quartzite.
But is not this a mistake
in coloring. Structurally, this
seems impossible.

~~Sec.~~~~T.~~~~R.~~

See map opp. p. 5

Aug 16
1883

"

42

Upper Slate Conglom. 3f"

Campement Dours cont.

- 6558 Quartzite on west side
Campement Dours
- 6559 Slate immediately overlying
6558.
- 6560 Slate Conglomerate west
side Campement Dours
- 6561 Prtsdam Sandstone over-
lying 6560 - lower layers
just above 6560
- 6562 Prtsdam Sandstone, as before
upper layers - from top
of hill W. side Campe-
ment Dours.
- 6563 Slate from small Is. N.W.
of Campement Dours.
- 6564 Specimens from 3f selected
6565 in order from east to west,
6566 from 6563, to junction
6567 with "39 Red Quartzite"
near McClennan's landing

Sec.T.R.

Recap opp. p. 5.

Aug 16th
1883

443

Quartzite 39" of Logan.

McClellan's Landing vicinity

6568 Greenstone from island east of point
point east of Mc Cl. Point. Appa-
rently a greenstone interbedded
in 39 - but possibly in 3F

6569 } Apscalears red, felspathic,
6570 } granite-porphyrus-like rock
from E of McClellan's Landing
about $\frac{2}{3}$ mile. Compare
with red rocks of Bifeon
Point and of Raccoon
Point in 3F

6571 Quartzite $\frac{1}{2}$ mile west of
6570

6572 Quartzite 39 from Mc
Clellan's Landing -

Sec.T.R.

See map opp. p. 5

See also Fairbairn - Note book
No. 1, for notes on
3h. in country east of Saint-
St. Merrill

Aug 16"
1883

Red Jasper Conglom. "3h"

444

West of Maclean's Landing

We searched carefully along shore through the space marked on Logan's map (see map op. p. 5 this book), for exposures of "3h", but could not find satisfactory or certain ones.

6573 is from a "rock mountain" islet off shore $\frac{1}{2}$ mile, which must belong to this layer. It barely rises to the water, showing only an outline square feet at surface. It is beautifully rounded. The rock shows small Jasper patches, but cannot be later as typical of the formation.

6574 A number of angular lens mar-
bles of 6574 were found on the
shore off 6573. Without much
doubt near home

6575 From a trailer on French
Id Point - Bruce mine here.
Though an erratic, it shows
some of the R.G.C. character,
that it was selected.

Photographic Negatives - Taken
on North Shore Lake Huron
August 1883

No. 25 Duplicated

View of Rounded quartzite ledges East Nee-
bish Id. looking Northwest. dip Exp. N.

No 26 Duplicated

Rounded quartzite ledge East Nebish
Lsd looking North

No. 27. Duplicated

View of same ledge as shown in No. 26
looking east of north

No. 28. Duplicated
Quartzite ledges East Nebish Isd.
looking North

No. 29 Duplicated

Glaciated mica schist Serpent River Bay
Lake Huron looking north p. 12

No. 30 Duplicated
Glaciated Greenstone North shore Lake
Huron looking north p. 15

No. 31 Duplicated

Dike in Laurentian gneiss north shore
Lake Huron looking west p. 25

No. 32. Duplicated

Great quartzite ledge $4\frac{1}{2}$ miles N. N. by N.
from Thessalon point looking north p. 32

