

Ontario. No. 387 1903

Hotchkiss, William Otis, 1878-1954

[s.l.]: [s.n.], 1903

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U. S. GEOLOGICAL SURVEY
FIELD SECTION BOOK

9-891

LAKE SUPERIOR DIVISION.

INSTRUCTIONS.

1. Ordinarily at least two pages of this book will be devoted 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 number attached, showing the direction and amount of the dip. Denote a shaly or other very plainly bedded ledge by right parallel lines, and a ledge having a secondary structure by wavy parallel lines running in the direction of the strike, with dip arrow and number attached as before. The greatest care must be taken to avoid confusing slaty or schistose structure with bedding, and in all cases where there is the least doubt about the true bedding direction, indicate it by a query. 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 spaces between the blue lines as 100 paces, and twenty of these spaces to one mile, or 2,000 paces. Usually the southeast corner will be placed at the bottom of the page, or at the first black 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 the map may be turned around and the north placed at the left-hand side of the page. The ruling of the left-hand pages is also arranged so that, if desirable, a larger or a smaller scale can be used, eight inches, two inches, one inch, or one-half inch to the mile. With the two-inch scale, the squares outlined in black represent sections, and those in red, quarter sections and "forties," while the space between the blue lines is 200 paces.

2. On the right-hand page place the notes descriptive of the exposures. Begin in each case with the number of the specimen, placing the number on the left-hand side of the red line, after which give in order on the right of the same red line the position of the ledges as reckoned in paces from the southeast corner of the section and the dip and strike when observable, the latter always being expressed from the north; for instance 4025, 250 N., 300 W., *Strike, N. 78° E., Dip 50° S.* Then follow with a full description of the ledge. When topographical maps are used for locations this paragraph applies only in part.

3. Collect a specimen from every ledge, or wherever there is a change of rock on any one ledge, taking care to get fresh material, unless for a special purpose the weathered surface is desired. In case of trips made on foot or in canoes, for long distances, neighboring ledges, unquestionably of one kind of rock, need not be specimened. The position and extent of the ledges not specimened should be marked on the map, with notes that each is of a rock identical with specimen so-and-so. Under the same conditions small-sized specimens, trimmed to a uniform size of $2 \times 2\frac{1}{2} \times \frac{1}{2}$ inches will be allowed, but in all other cases *large-sized specimens*, trimmed to a size of $3 \times 4 \times 1$ inches, must be selected, in accordance with section 3, chapter IV, p. 44, Regulations of the U. S. Geological Survey. Specimens should not be placed together without protection in the collecting bag, as the fresh surfaces, important in determining the character of rocks, are thus destroyed. They should be damaged by no temporary mark, but the numbers should be at once marked in at least two places upon the inclosing paper or cloth bags. Specimens may be permanently marked in camp by painting the numbers upon them in white upon a black background, using Silver White and Ivory Black oil tubes for color, with turpentine as a diluent.

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, sketches, cross sections, etc.

5. Forward this note book as soon as filled as registered mail matter to C. R. Van Hise, U. S. Geologist, Madison, Wis.

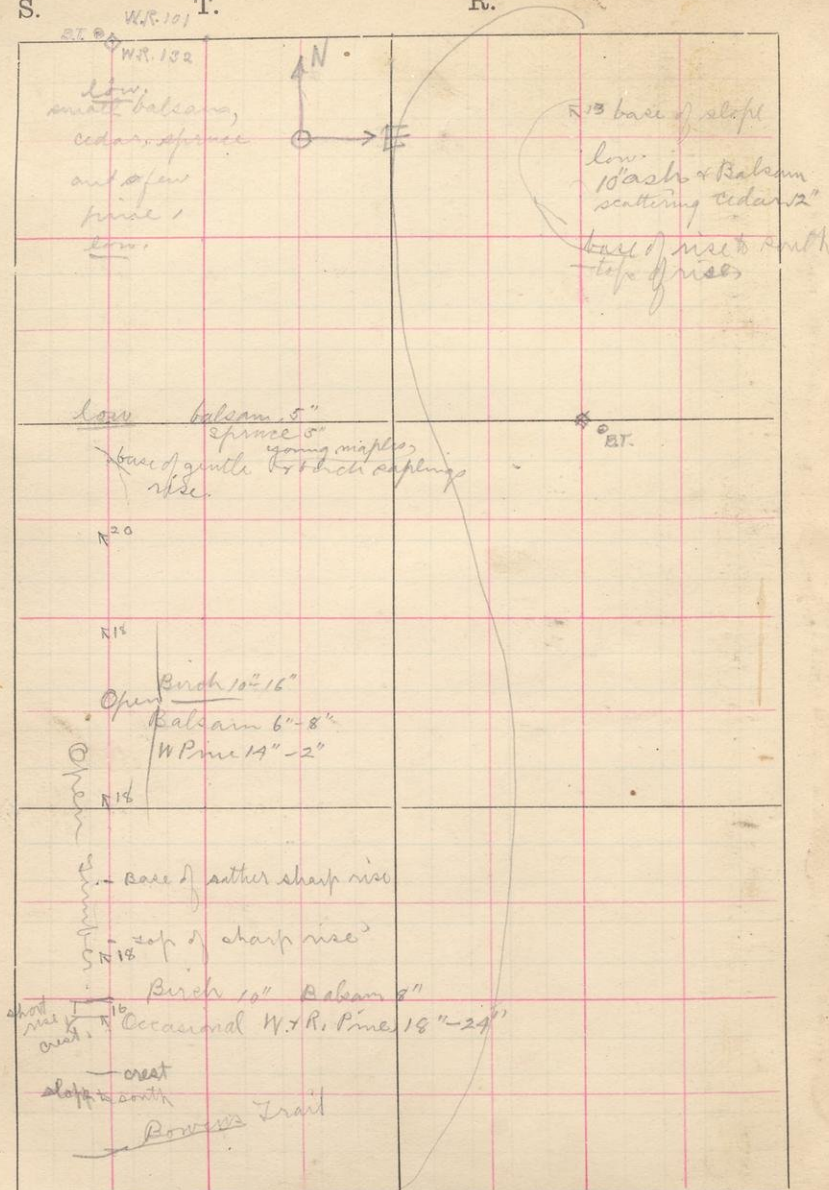
Notepad No. 387

Holcher's

S.

T.

R.



Wednesday July 22, 1903.

Notes for survey of claim W.R. 132.

Party. W.D. Hotchkiss, instrument.

Alex. McDonald

Com. Patterson

Russel Cryderman.

} Helpers.

Instrument; - Kroedel Dial Compass. #375.

Set up at the SW Cor of W.R. 101 and sighted north and east along the cut lines. - Set watch according to the time given by the dial.

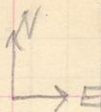
(balsam)
Marked the post already set, with "W.R. CXXXII." and measured distance to B.T. 0.19 ch. - a balsam foot in diameter lying N45°W.

Ran south through swamp of small balsam, spruce & birch with very few white pine of 1' to 15" dia to 11 ch. South of start. Then ran along the east slope of a hill covered with small hardwood, gradually ascending as we went south. Double chained from start to point 36 ch. south and found we were 0.03 ch short. Adjusted $1\frac{1}{2}$ links for error and went on.

S.

T.

R.



BT. 8

low

6"-10" Balsam

4"-10" Cedar

11"-21" pine

low

front of N. slope.

1' high

10" balsam

few 16" pine

BT. 17

17

SW corner R. 132.
small trees.
6" maple
12"-24" W. pine.

big open timber
10"-15" birch
10" maple
16"-24" W. pine.

big open timber
all hardwood.

40 ch. S. of the S.W. Cor of WR101. Set cedar corner post marked "WR132" and marked balsam B.T. 5" in dia. S69°E; 0.14 ch.

Thursday July 23.

Started at the S.W. Cor of WR132. and ran 20 ch. east. The line runs along the top or just north of the top of a big ^{gentle} northward slope (down).

The timber is mostly hardwood with a few scattering big pines. (2')

At 20 ch set ^{SE.} corner post of cedar marked "W.R. 132" and marked B.T.

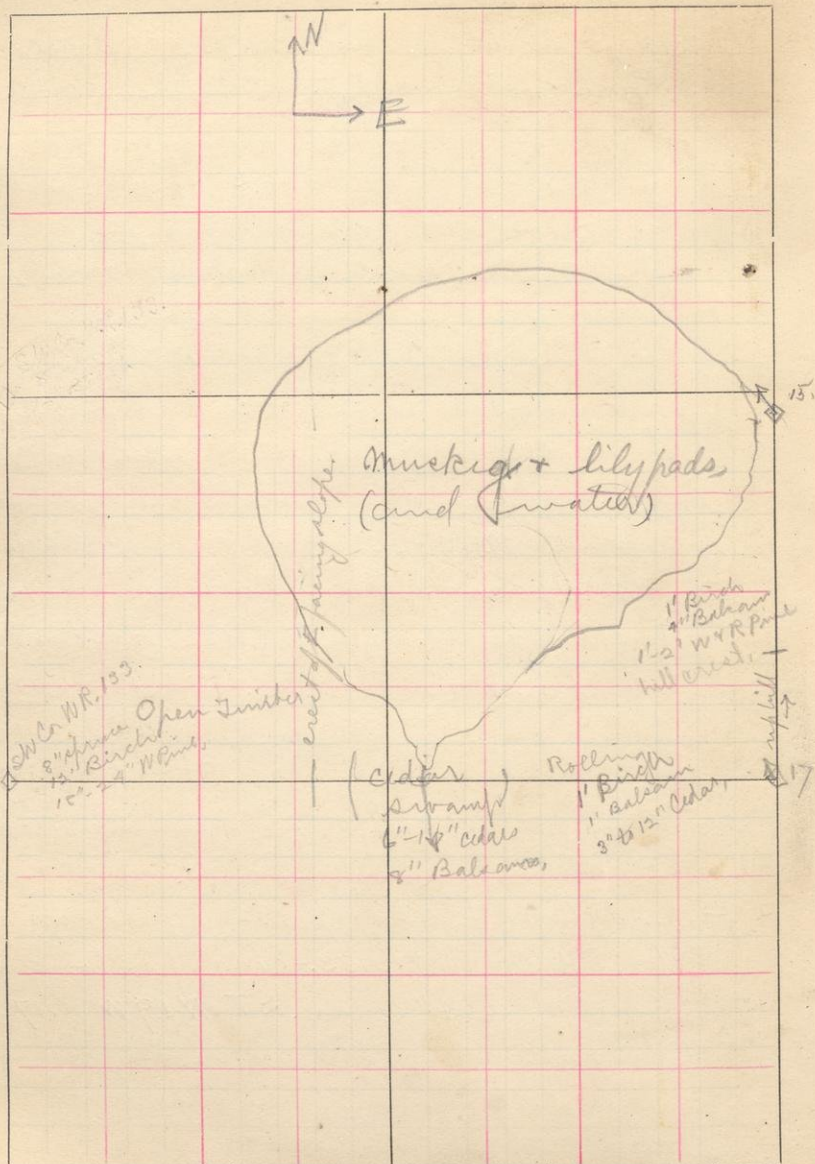
N43°W; 0.30 ch. - a big yellow birch 14" dia. From the SE cor. of W.R. 132. ran north down long gentle slope. Timber all large open hardwood with a few small cedars at 4 ch N. Struck low ground at 5 ch. N. and the ^N edge of the low ground at 7.60 ch N.

- 7.60 ch N of the SE cor of 132. I set up the S.W. Cor of WR133. - cedar post. - and marked a 4" cedar B.T. N19°W 0.17 ch. Ran east from the S.W. Cor of WR133.

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Ran east 20 ch. from SW Cor of WR 133.
At SW Cor there is a short rise to the east,
up from the edge of swamp.

At 8 ch east the land drops down
into cedar swamp which begins
at 9 ch east.

Cross creek at 10.82 ch East. 0.05 wide.

A small lake lies just to the north
of the line - about 1 ch.

13 ch E edge of cedar swamp & sharp
short raise. East of raise the country
is rolling & slopes down to the corner.

20 ch East of SW Cor of WR 133 d set

The SE cor. - a cedar post marked
"WR CXXXIII" and marked yellow
Birch B.T. 14" dia. S41°E; 0.17 ch.

Ran N from SE Cor 133. up a hill
- the post being just at the bottom.

3.30 top of hill. Along the top of this hill there
is a fair bunch of W & R Pine. rather
scattering, 5.30 ch. N crest of hill. 7.00 ch base of hill.

9.60 ch N of the SE Cor of WR 133 set S.W. Cor.
of W.R. 134. Balsam post, marked
"W.R. CXXXIV." marked 6" Balsam B.T.

S88°E 0.67 Ch.

This post is
on the # East edge of small pond

Ran 20 ch east from the SW Cor
of W.R. 134

Up hill 3 ch to crest. rolling country
to 9 ch east. then sharp precipice
of 15 ft. ~~with~~ level on top.

Friday July 24

Continued line east on south side
of W.R. 134. Timber is rather
scattering big stuff - 2' pine - with
4" & 8" cedar, balsam & spruce.

The line from 10 ch east of the SW Cor
to the S.E. Cor is just about on the crest
of a southward slope.

20 ch east of the SW. Cor of 134 I set
a spruce post marked "W.R. CXXXIV"
and marked a yellow birch 10" in dia.
N 62° E 0.10 ch. as bearing tree.

Ran 6.34 ch N from the SE Cor of 134
3.50 north. line of steep rise to north.
4.50 " crest " " "

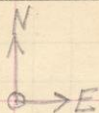
There is some pretty fair pine for a
little distance - about 2 chains - on the
top of the hill where the SW Cor of 135 is.

6.34 ch. N of SE Cor of 134 I set spruce stake
at SW Cor of 135 marked "W.R. CXXXV" & marked
W Birch B.T. 8" dia. N 25° W. 0.07 ch.

S.

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R.



W
Grandy Hill
→
→

W Pine 12-30"
8 in Spruce
8 in Balsam
10 in Cedar
Sh Cr 136

Red Pine 8-24" diam
6" Balsam
20 in Spruce & cedar
Sh Cr 135

Lake

Ran east from the SW Cor of WP 135 to Hick Lake.
The line runs along the top of the hill
for about 2 ch and then gradually
downward along the south slope of
the hill. The timber up to 10 ch.
is 1' to 20" W pine gradually getting
scarcer as the line progresses and
giving way to 6-14" spruce, 4-16" Balsam
10" cedar.

20 ch E of the SW Cor of WP 135 I set
a balsam post for SE Cor. and marked
8" spruce B.T. S 25° E; 0.05 ch.

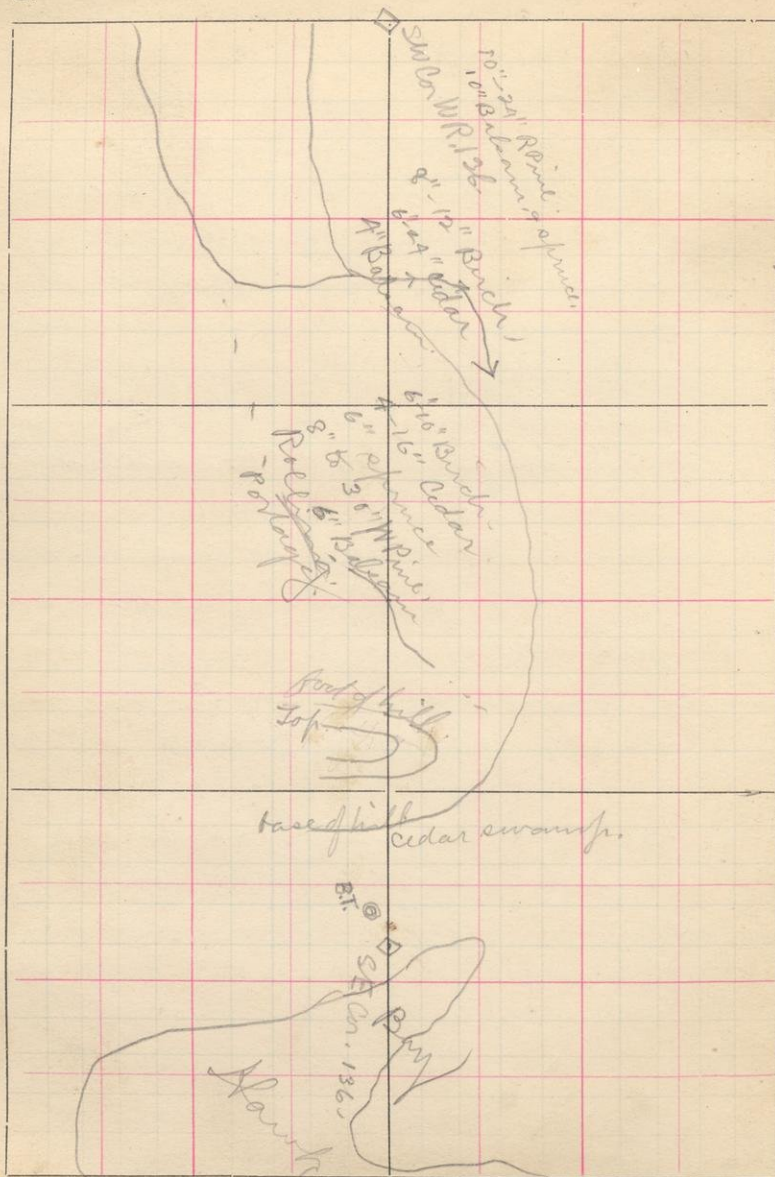
Timber from 10 ch to 20 ch east of
the SW Cor of 135 is open Norway
pine with small (6") Balsam &
some spruce & cedar between.

The line from 10 to 20 ch E of SW Cor 135
is on the south slope of a high hill.
6.80 ch east of SE Cor of 135 crossed
small creek flowing northward.
The valley of the creek slopes
gradually up from the creek on
both sides.

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24 ch East of the SW cor of WP 136 cl
set cedar post for SE cor. & marked
5" cedar B.T. S74° W, 0.49 ch.

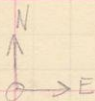
~~Ran west to~~

S.

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SE Co W.R. 109, Rolling land.
 hill Cedar Swamp
 NE Co W.R. 136.
 Hawk Lake.
 Small pine & balsam
 Thicket.



Saturday July 25,

Started at SE Cor of WR 105 & ran east to Hawk Lake. The country drops very steeply at first. The timber is ^{mostly} scattering W Pine with balsam and pine underbrush, and 4" to 6" birches.

Note: Ran along line on S side of WR 105 for about 200 paces W of the SE Cor and found that the line took a swing of about 1° to the north at one point. There was no sun so I could not test the direction as compared with that of the W side of 101 from which I got my time.

3 ch. E of the SE Cor of 105 we got into cedar & alder swamp.

5 ch. E run out of the cedar swamp into rolling country, with scattering pine, 12"-18" and small (4") Birch Balsam & spruce.

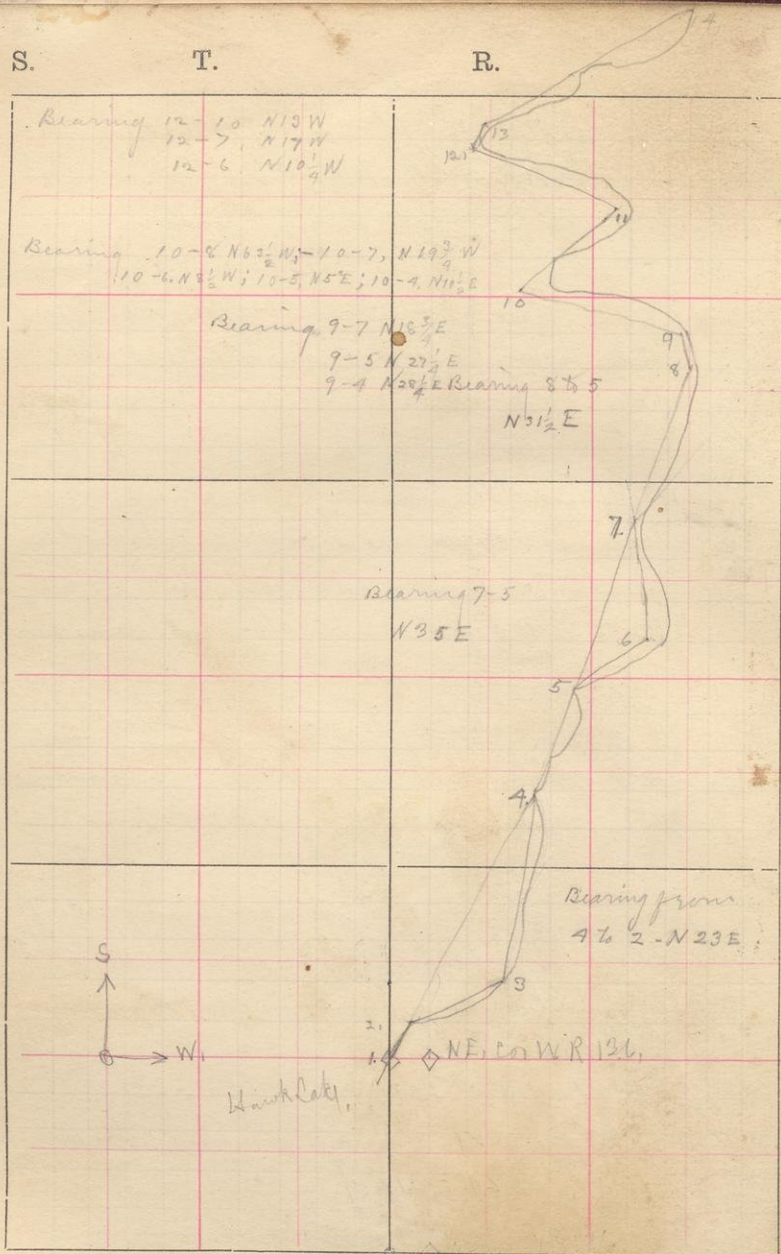
13 ch 40 d. east of the SE Cor of 105 I found the lake.

12 ch 40 l east " " " " I set the N.E. cor of 126. a cedar post marked "W.R. 126" and marked NW Birch B.T. 5" dia, S. 64° E. 0.17 ch

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Sunday. July 26. 1903.

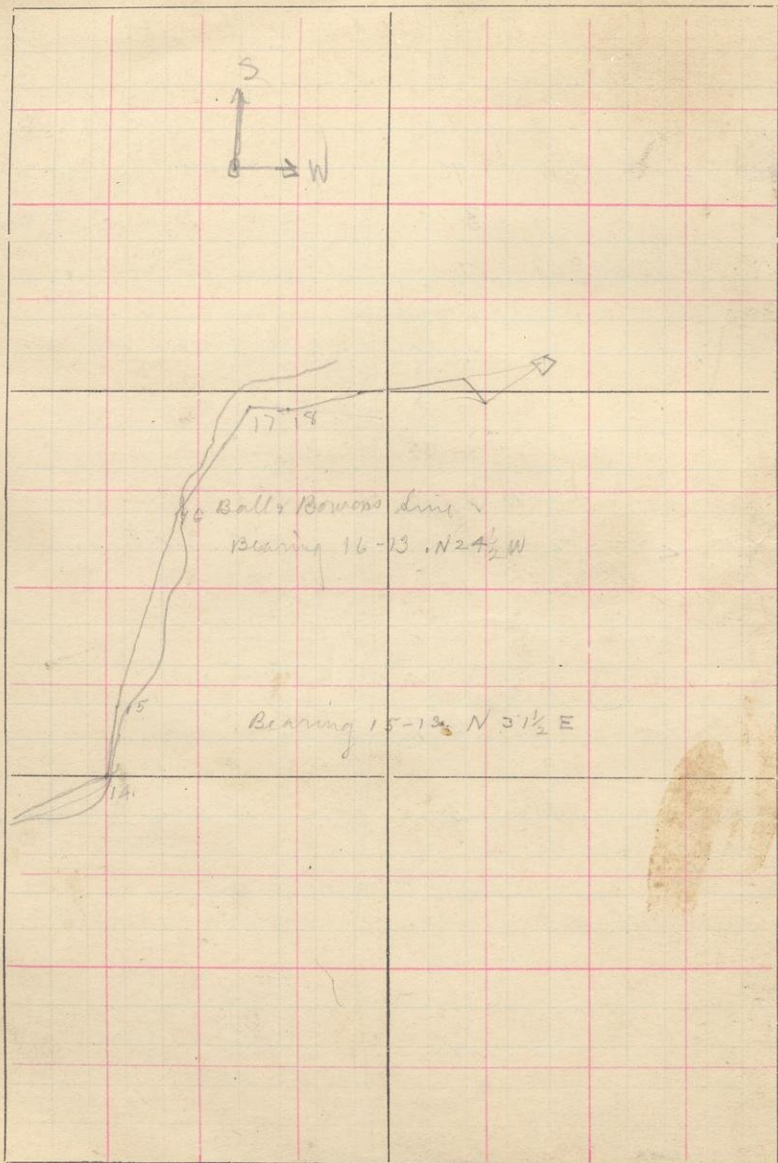
Started at shore of Hawk Lake on NE Cor
of 136 and traversed south.

Sta.	Cor.	Bearing	dist.	True Bearing	S. + Lat.	N. - Lat.	W. + dep.	E. - dep.
1.	16 1/4 W.	S 33 W.	0.95	S 16 3/4 W.	0.91		0.27	
2.	"	S 58 1/2 W.	3.70	S 42 W.	2.75		2.48	
3.	16 1/2 W.	S 30 E	4.85	S 19 1/2 E	4.57			1.62
4.	16 1/4 W	by backsight.						
	16 3/4 W	by Sun. after this						
		S 32 W.	2.54	S 15 1/4 W	2.46		0.67	
5.	17 1/2 W	S 63 1/4 W.	2.35	S 45 3/4 W	1.65		1.69	
6.	17 1/4 W	S 13 1/4 W.	3.00	S 4° E	2.98			0.21
7.	17 1/4 W	S 26 1/4 W.	3.55	S 9° W	3.51		0.56	
8.	17 1/4 W	S. 9° E	1.00	S 26 1/4 E	0.90			0.44
9.	17 1/4 W	S 69° E	3.65	S 86 1/4 E	0.24			3.64
10.	17 W	S 46 3/4 W	2.74	S 29 3/4 W	2.56		1.46	
11.	17 W	S 55 1/2 E	2.97	S 70 1/2 E	0.96			2.80
12.	17 W	S. 11 1/4 W.	0.86	S 53 1/4 E	0.85			0.09
13.	17 1/2 W.	S 40° W.	4.75	S 22 1/2 W	4.39		1.82	

S.

T.

R.



Sta.	Var.	Bearing	Dist True bearing + lat - lat + dep - dep			
14.	$16\frac{1}{2}W$	S 10° W	1.92	S $6\frac{1}{2}E$	1.91	0.22
15.	15 W	S 12° W.	4.85	S 30° E	4.84	0.25
16.	$15\frac{1}{4}W$	S 24° W.	3.65	S $8\frac{3}{4}W$	3.62	0.56
17.	$15\frac{1}{4}W$	N. $81\frac{3}{4}W$	1.00	S 83° W	0.12	0.99
18.	$15\frac{1}{4}W$	S $56\frac{1}{2}W$	1.68	S $41\frac{1}{4}W$	1.26	1.11
19.	$15\frac{1}{4}W$	S $78\frac{3}{4}W$	1.41	S $63\frac{1}{2}W$	0.63	1.26
20.	$15\frac{1}{4}W$	To SE port.	1.36			2.04
		N $78\frac{1}{4}W$.	3.04	S $86\frac{1}{2}W$	0.18	

To other end of base.

	$15\frac{1}{4}$	N $83W$.	1.00	N $68\frac{1}{4}W$.	0.37	
21	$15\frac{1}{4}$	S $10W$. To port x.	2.16	S $74\frac{3}{4}W$	0.57	14.90 9.27
						9.27
					41.29	5.63

Monday July 27. 1903.

Ran S from the S.E. Cor. of W.R. 136.

1.20 S thru cedar swamp to base of hill.

2.80 S to top of hill. country rolling south of that.

12 ch S of SE Cor of WR 136 I set cedar post for NW Cor of WR 137 and marked Bt. yellow birch 4" S 71° E. 0.09 ch

Timber birch 4"-16". balsam 4"-8" & cedar 4"-10"

4 ch S from the NW Cor of 137. is the base of a high steep hill covered with a very few W Pines 12"-24" and a thick growth of 2"-8" birch & balsam & poplar.

From the top of the high hill 9 ch S of the NW Cor of 137 I could see most of claim 137. and there was apparently a very small amount of pine.

From 15 ch S. the ground takes a gradual decent and at 26 ch a small creek or drain was crossed. At 37 ch is the base of another steep rise.

40 ch S from the NW Cor of 137 I set a Spruce post for SW Cor marked "WRC xxxv" Marked 4" Balsam for Bt. S 78° E; 0.09 ch. This post is also the NW Cor. of W.R. 138.

8 ch S of NW Co 138 the line hit the edge
of a swamp (cedar), with a few Red &
white pine in the low ground there
and south.

Tuesday July 28.

Went to Terzagami after supplies
with Crydeman. The other two
men finished the line on the
west side of 138.

Wednesday, July 29.

Rained in forenoon
In P.M. cut line on N side of 137.

Thursday July 30,
finished line on N side of 137.
Set spruce post 38.62. 1 ch east
of the NW Co. of 137. and 1 ch W,
of the lake shore

Top of hill 33.30. foot at west 16.00
ch. Slopes from top east to Lake.
10 ch east passed Sand of Bay ✓

Marked 10" x spruce B.T. N 78° E; at 2 ch.
Ran a compass line north from
the SW. Co of WR 136 to see how it checked

on the SW cor of 105. Rained and stopped us.

Friday July 31, 1903.

Continued the compass line north from where it was left yesterday. Found S line of WR 105 at 40.82 ch. and found the post ^(SW cor 105) 2.26 W of where we came out on the line. The time of the line agreed quite closely with the time I had been using - which I took from the W side of 101.

Chained along S side of 105 & found it to be 19.59 ch.

Saturday ^{Aug} Cut east from SW cor of 138. Set post (spruce) at SW cor 138 & marked 6" Jackpine RT. N 55° E 0.06 ch.

Timber all birch 4" & 2-6 Jackpine - 14 ch east. Crest of steep high hill. 20 ch " base of hill.

Timber on top of hill is Jackpine & spruce. " on east slope is birch & balsam 2"-6" dia.

20 ch east, timber is ash 6" cedar 8" Balsam 6" & birch 6"-12"

20-30 ch E the timber is 2-4 Birch balsam
& maple.

30-40 Timber is 2"-6" spruce firch balsam

40-50 Ground sloping gently down to
east.

54 E Top of steep slope down.

55 E bottom " "

56 E base of rise (steep) to east.

57 E Top of "

Timber from 45 ch E is W Birch

12"-16"; 6"-10" balsam. W & R Pine, 12"-30"

59, 24. E hit Hawk Lake

58, 24. Set cedar post for SE Cor of 138.

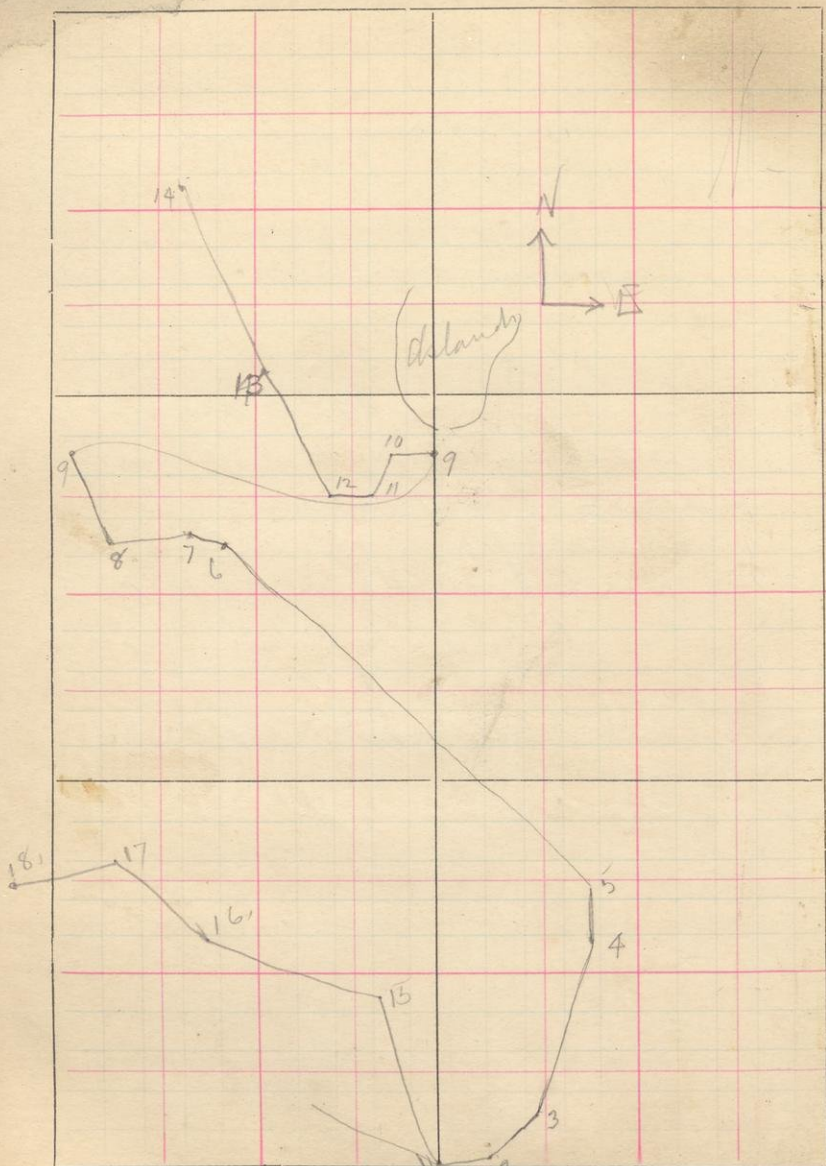
Marked 5" W Birch BT N. 28° W; 0.12 ch.

Then started to traverse the shore
from the end of the point curved to
south below the island -

S.

T.

R.



Sta. Sea Sght. Day. ^{Miles.} Bearing True Bear. dist. ~~Alt.~~ Slat. Elev. W. Ref.

1.	2.	$16\frac{3}{4}$	$S 81\frac{1}{4} E$	$N 82 E$	1.21
2.	3.	$15\frac{3}{4}$	$N 74 E$	$N 58\frac{1}{4} E$	1.83
3.	4.	$14\frac{1}{4}$	$N 8\frac{3}{4} E$	$N 5\frac{1}{2} W$	4.50
4.	5.	$13\frac{1}{2}$	$N 13\frac{1}{2} W$	$N 27 W$	1.30
5.	6.	$13\frac{1}{2}$	$N 23\frac{3}{4} W$	$N 41\frac{1}{4} W$	10.80
6.	7.	$13\frac{1}{2}$	$N 56 W$	$N 69\frac{1}{2} W$	0.99
7.	8.	14	$N 81 W$	$S 85 W$	2.90
7.	9.	14	$N 47 W$	$N 61 W$	3
9.	8.	$8\frac{1}{4}$	$N 23\frac{3}{4} W$	$N 31\frac{1}{4} W$	3.20
9.	10.	10	$S 86 W$	$S 77\frac{3}{4} W$	1.54
10.	11.	$10\frac{1}{2}$	$S 30\frac{1}{2} W$	$S 20 W$	1.97
11.	12.	12	$N 82\frac{3}{4} W$	$S 85\frac{1}{4} W$	1.00
12.	13.	$12\frac{3}{4}$	$N 19\frac{1}{2} W$	$N 32\frac{1}{4} W$	6.75
13.	14.	$13\frac{1}{2}$	$N 15\frac{1}{2} W$	$N 32 W$	8.60

Aug. 2. Sunday.

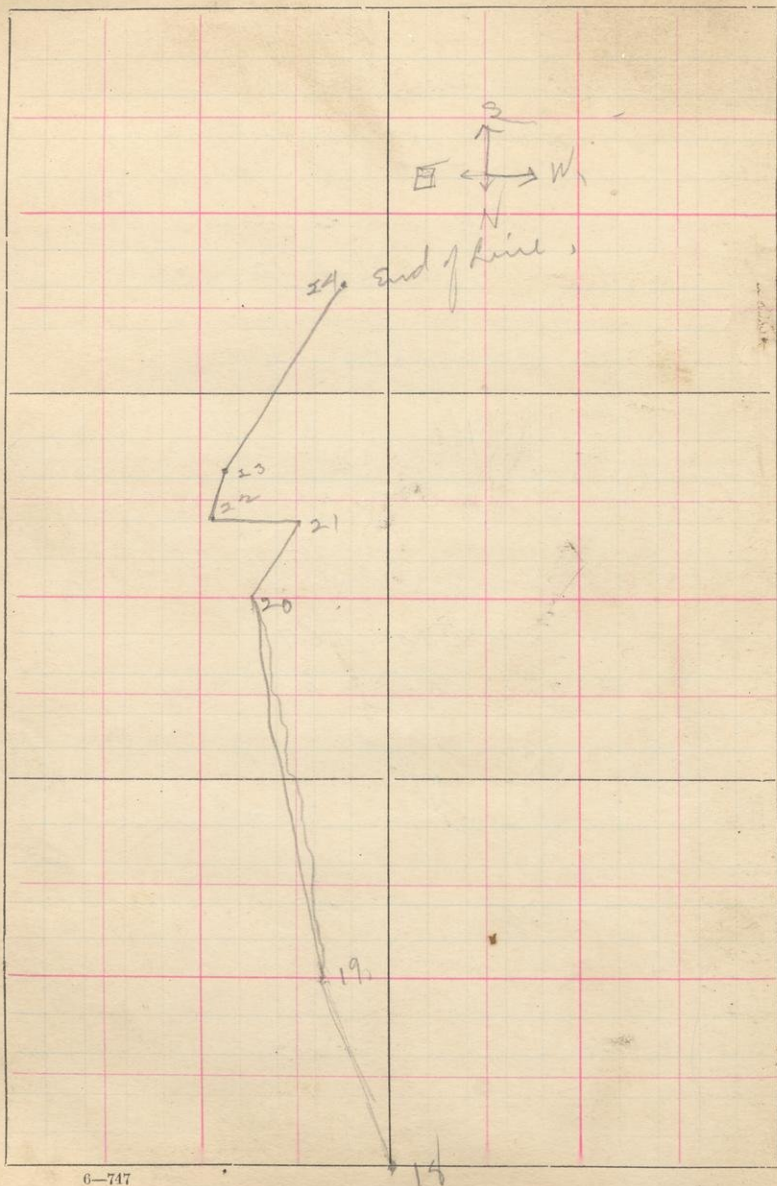
Started at Sta 1. & ran S to the line.

1.	15	$16\frac{1}{2}$	$N 9\frac{1}{2} W$	$N 26\frac{1}{2} W$	4.30
15.	16	$15\frac{1}{2}$	$N 78 W$	$S 86\frac{1}{2} W$	5.35
16.	17.	$15\frac{1}{2}$	$S 50 E$	$S 24\frac{1}{2} E$	
16.	17	"	$N 35\frac{1}{2} W$	$N 71 W$	5.40
17.	18	15	$S 28\frac{1}{2} W$	$S 13\frac{1}{2} W$	2.80
	1		$S 58 E$		

S.

T.

R.



Sta	Sta	Mag,	True	Dist	N Lat	S Lat	E Dep	W Dep
Occupied	Sighted	Bearing	Bearing					

18.	19.	N-W	14° S 44 E	S 58 E	5.35			
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19.	1.	15	S 74 E					
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"	15	"	N 75 E					
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"	16	"	N 32 E					
---	----	---	--------	--	--	--	--	--

"	17	"	N 19 W					
---	----	---	--------	--	--	--	--	--

"	20	"	S 15 E	S 20 E	10.90			
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20	1	14°	N 31 E	N 17 E				
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"	15	"	N 15 E?					
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"	21	"	S 13 W	S 1° E	4.30			
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"	22	"	S 25 E					
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22	21	14	S 73 W	N 59 E	3.45			
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22	23	14	S 16 W	S 2° W	0.86			
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"	1	"	N 14 E					
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"	19	"	N 2 W					
---	----	---	-------	--	--	--	--	--

23	24	14	S 35 W	S 31 W	5.60			
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Started at 14 T run N, rec plot on next page

14	25	15 1/2	N 35 1/4 E	N 19 3/4 E	9.10			
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25	26	15 1/2	N 21 1/4 E	N 5 3/4 E	4.95			
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26	27	17 1/4	N 20 1/2 W	N 37 1/4 W	0.20			
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27	28	16	N 43 1/2 W	N 59 1/2 W	5.80			
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28	29	15 1/2	N 38 E	N 22 1/2 E	6.45			
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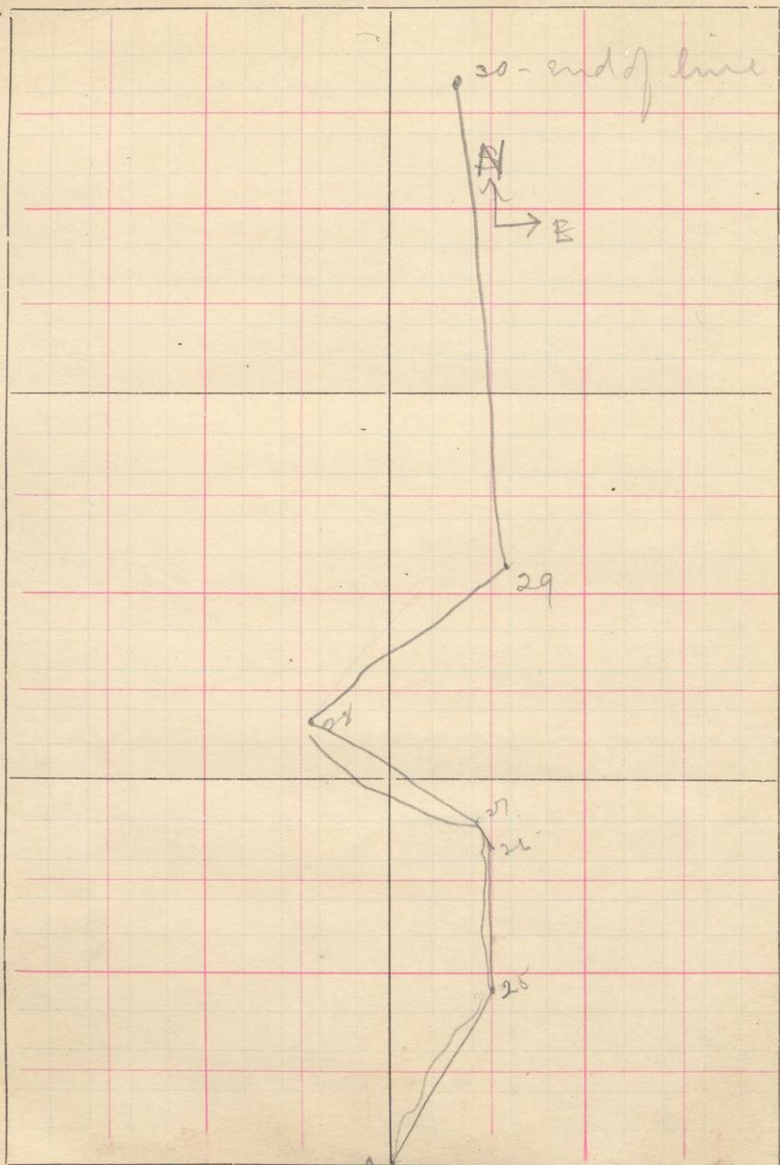
29	30	15 1/2	N 8 1/2 E	N 7 W	14.00			
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27			S 1° W					
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S.

T.

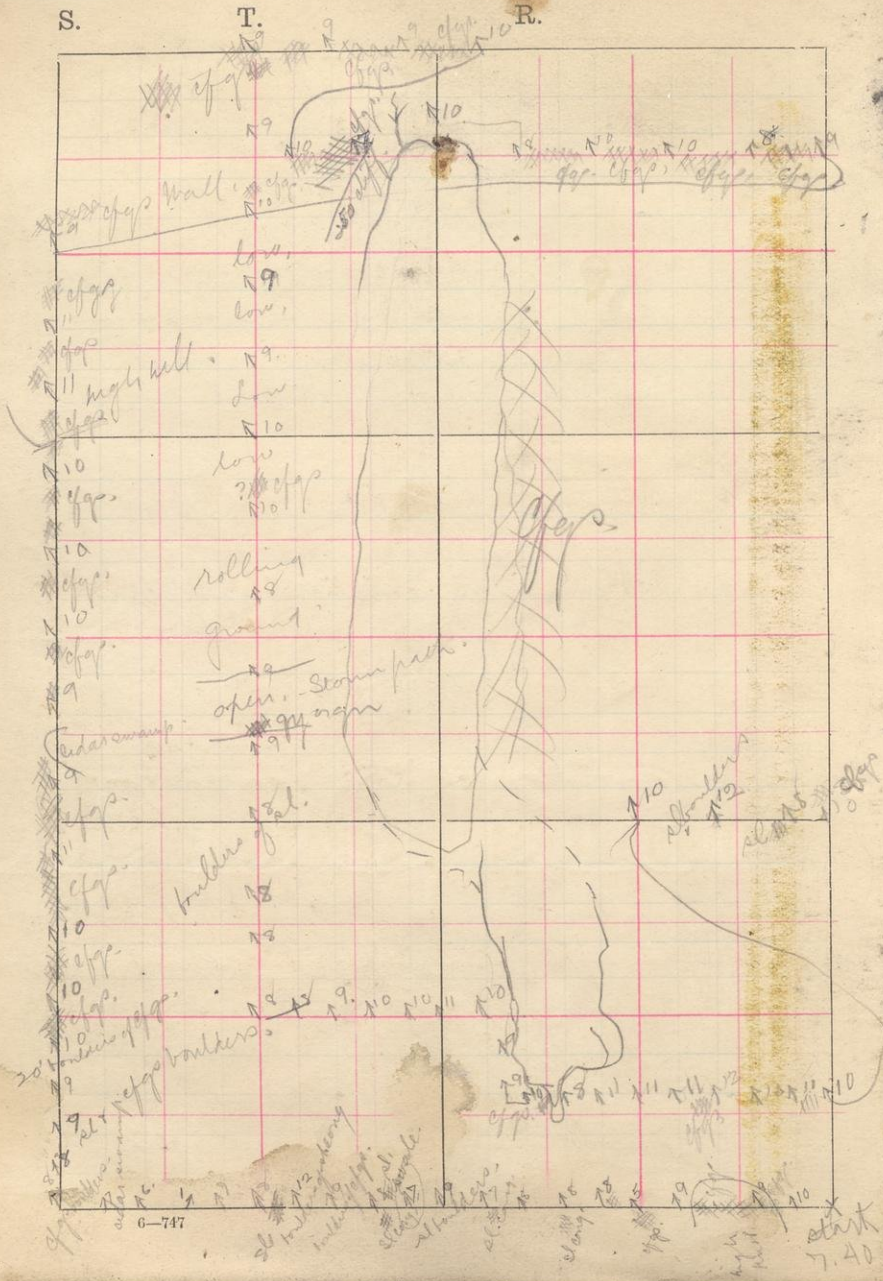
R.



S.

T.

R.



Tuesday Aug. 4, 1903.

Started just N of Northernmost portage
out of Devils lake into grassy, and
ran west.

200 W 40 S very old looking slate conglom or
greenstone facies - probably slate congl
1000 W. boulders of a very much crushed and
indurated greywacke - practically a hornstone.
This stuff looks older than most of the
greywacke with the upper sl. congl series.
1200 W. Outcrop (doubtful) of less conglomeratic
slate.

1700 W. Could find no outcrops here at a
place where I got var. of 1° E and
the boulders were quartzite + very basic
magnetitic diorite.

2000 W. Turned & ran 2500 N, thence
west.

9.38 W hit head of Long lake, apparently
about a mile long.

1135 W. W side of lake. The west bank of
lake is a 250 or 300 foot hill of diorite
mostly sheer with a steep slope.

2000 W I turned and ran 2500 S then east
640 E like. - same one seen at north.

S.

T.

R.



Thursday Aug 6. 1903.

Started on NW shore of Grassy Lake at
an outcrop of fresh greenstone and ran
west.

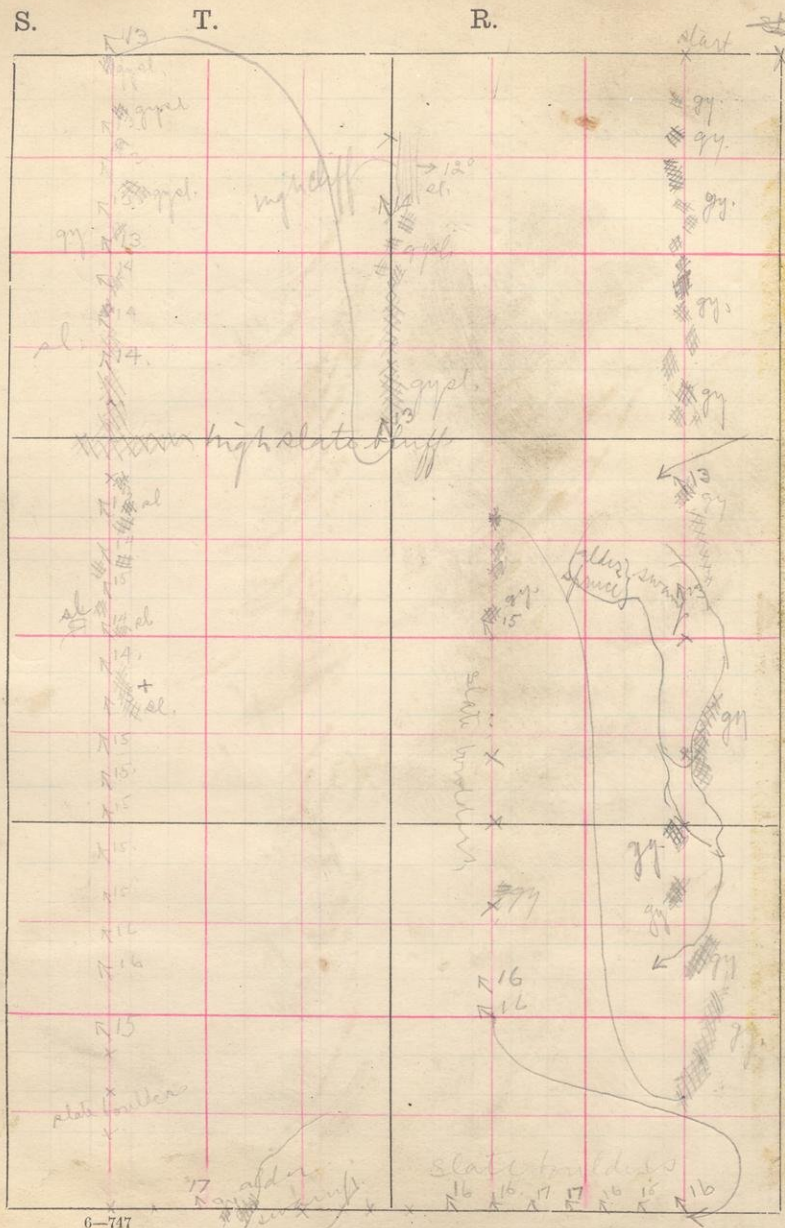
1050 W. outcrop of quartzite a very much
mashed greywacke - probably the latter

1350 W. Slate very much mashed and having
a fissility dipping 10° W, 80°

S.

T.

R.



Aug 12, 1900 Wednesday

Started one mile E of camp on east side of Obabica just north of the route to Round Lake and ran south. Heavy clouds and strong north wind - no sun so ran on variation of N 13° W

1000; even textured greywacke on top.

1055 small stream → SW.

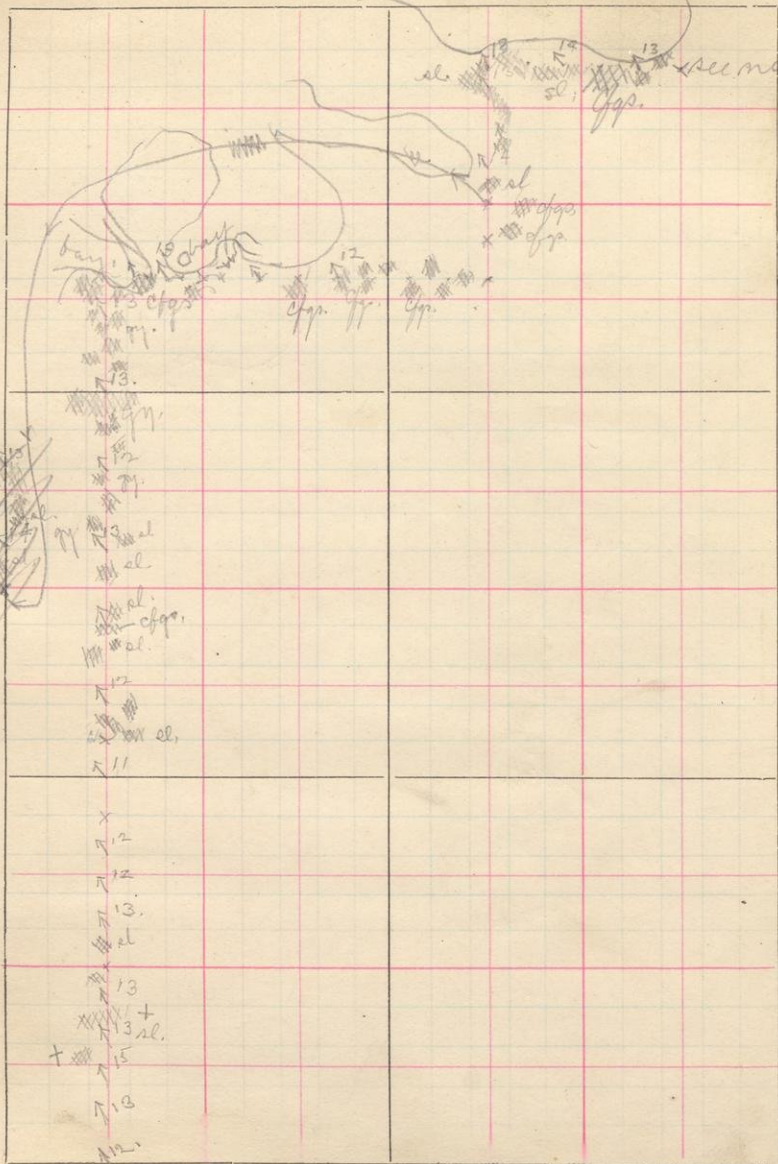
2600 S. the gy is well exposed in a low bare ridge. It is slightly conglomeratic, showing pebbles of vein quartz, acid granite and an older gy.

3700 to 4000 S. is big open hardwood timber

S.

T.

R.



see next page

820-0-1111

Thursday Aug 13. 03.

Started at N end of bay on Etahica
east & north of portage to Roms Lake
and ran N.

250N 25W slightly rounded flat lying
slate.

600N & 1000N there were no outcrops but the
surface was composed of angular slate
boulders not far from their parent ledge.

1150N high hill of slate with bare southern
facing ledges of fine grained
homogeneous greywacke

1400N outcrop of rather fine grained
somewhat altered diorite - a dike

2320 N hit bay of big lake.

2300N offset 1000 p. east to pass lake.

- 100E outcrop of altered cpgs.

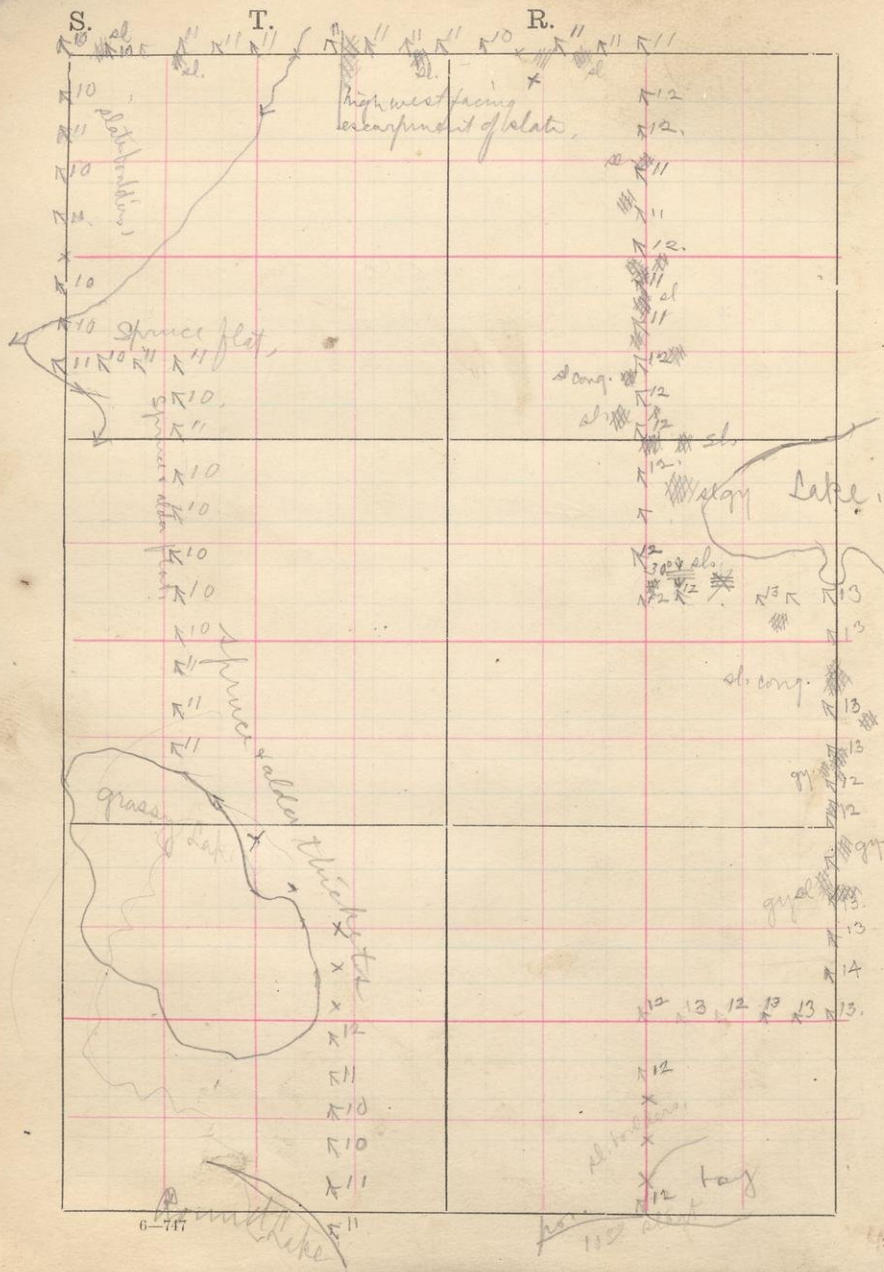
- 300E Run along S end of another bay
of big lake.

1000E turned N, & ran to 2500N & again
offset to east to get around another bay.

Met Ball & Cryderman at 1900E
and 3400 N. of place where we started
Ran S from point of meeting
There is effg on the lake here
slate part way up the hill and
effg again on top.

1750S - hit bay of Obabica and ran west.
150 - then south.

2000S 150W slate outcrop with a few
4 in pebbles.



Friday Aug 14

Started at east end of portage into
Round Lake and ran north 500 paces
then east 500 & then north.

The surface is covered with abundant
graywacke and slate boulders.

1300 N 500 E of start could see the lake we
ran into yesterday about 150 p. NE.

1650 N 500 E of start hit bay of lake.

1600 N 500 E " " we ran west to get
around lake ran 500 west & then turned
north.

3000 N of start we turned west.

3000 N 900 W of start crossed creek 3" deep 10' wide
flowing SW.

3000 N 1500 W turned south.

650 S crossed creek again

800 S turned east to escape the
lowland along the creek.

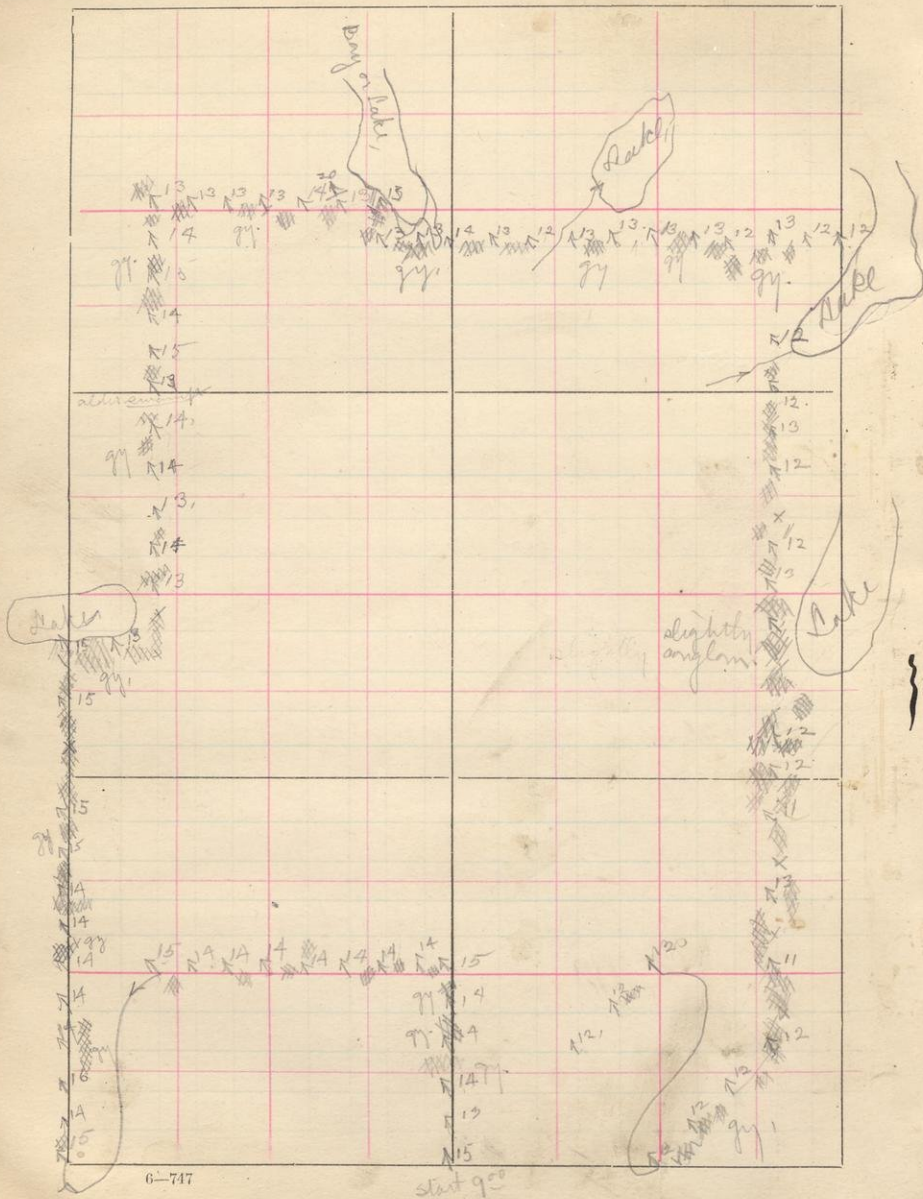
Ran east 300 & then turned S

800 S of this hit a grassy lake and
ran S 45 E along it for $4\frac{1}{2}$ miles
then turned south.

S.

T.

R.



Sunday Aug 16.

Started in north end of bay in peninsula north of Stinking Belands in Temagami. Ran N. 500 & then W. 800. Then returned north.

The gq. met in the first part of this run is fine grained slaty stuff. No ledges were seen of conglomeratic character but an occasional pebble was seen in an outcrop.

1850 N 800 W of start turned east to avoid a lake.

Ran 200 east & then north.

3000 N 800 W of start turned and ran east.

The slate or gq. in the run to the north is difficult to regard to determining structure. It apparently dipped to the N about 20° but I could not be certain. The slate shows the same character as that described above.

600 E ran to avoid a lake or bay. 10

Ran 100 S & turned east.

1070 E crossed small brook → NE

800 E - 800 N of start turned and ran S 45 W to get to foot. Bowen hurt his hand quite badly.

Wednesday Aug 12 1903.
Collected Samples from Claims on
Emerald and Eagle Lakes.

#1.
46094

This sample is from an outcrop of iron formation in N.D. 185(?) The outcrop is about 20 paces in length, east to west, and averages about 20 paces in width. On the south side it grades into lean siliceous stuff and on the north side is covered by drift. The actual ledges were never more than 20 feet apart and usually less, so that the character of the sample very probably agrees closely with that of the outcrop as a whole, with the exception that some of the poorer ledges were not sampled, as in mining they would be sorted out. The samples were taken in haphazard fashion, there being no attempt to get them from equal distances apart, or according to any system. However they were taken, with the idea continually in mind that they were to be an average sample.

*2. Outcrop on claim W.R. 104 about 100 S +
46095 100 E of NW Cor. Outcrop of ore as rich as
the specimens, about 20 by 20 paces, and
is surrounded by cherty zinciferous lean
stuff.

#3. Sample from small outcrop about
46096 on the middle of the west side of W.R. 136.
The ledge of rich material is not over
15 x 25 ft. All the southwest its extension
consists of thick bands of magnetite with
bands of old greenstone.

*4. Small outcrop about 20 x 20 ft and about
46097 50 paces SW of #3. All the rich material
in this belt of iron formation is
in bunches more or less with lean
stuff mixed with old greenstone
surrounding them.

*5. Small outcrop just west of creek, probably
46098 about on line between W.R. 134 & 135.
It was impossible to find the limits
of this rich material except on the east
on account of the drift. On the east
it is bounded by somewhat pyritiferous
cherty lean iron formation. On N. S. &
W it is covered with drift. The rich stuff
covers an area so far as could be determined
of about 30 x 60 ft.

#6. Outcrop about 300 W x 100 S of #5. may
possibly be a large "slide" but cannot
be far from place. The area is about
15 x 15 ft. The ground all around is covered
with glacial drift so could not tell
whether the extent was greater or not.

46099 #7. Outcrop 100 W of #6 well exposed in
several ledges. Total area about
40 x 20 paces. The sample is perhaps
a little better than the average
as good as the one would be made
by sorting.

46101 #8. General sample of West claim on
the island in Emerald Lake. This
is composed of pieces from all the better
looking ledges. 300 x 30 paces.

46102 #9. Outcrop about 100 paces E from W end
of island. 10 paces wide, 15 long - ends
covered by drift.

46103 #10. Outcrops about 200 to 300 E of W end of
island. Area approximately 20 x 40 paces.
By far the greater part of this area
is covered by glacial drift, but it is

S.

T.

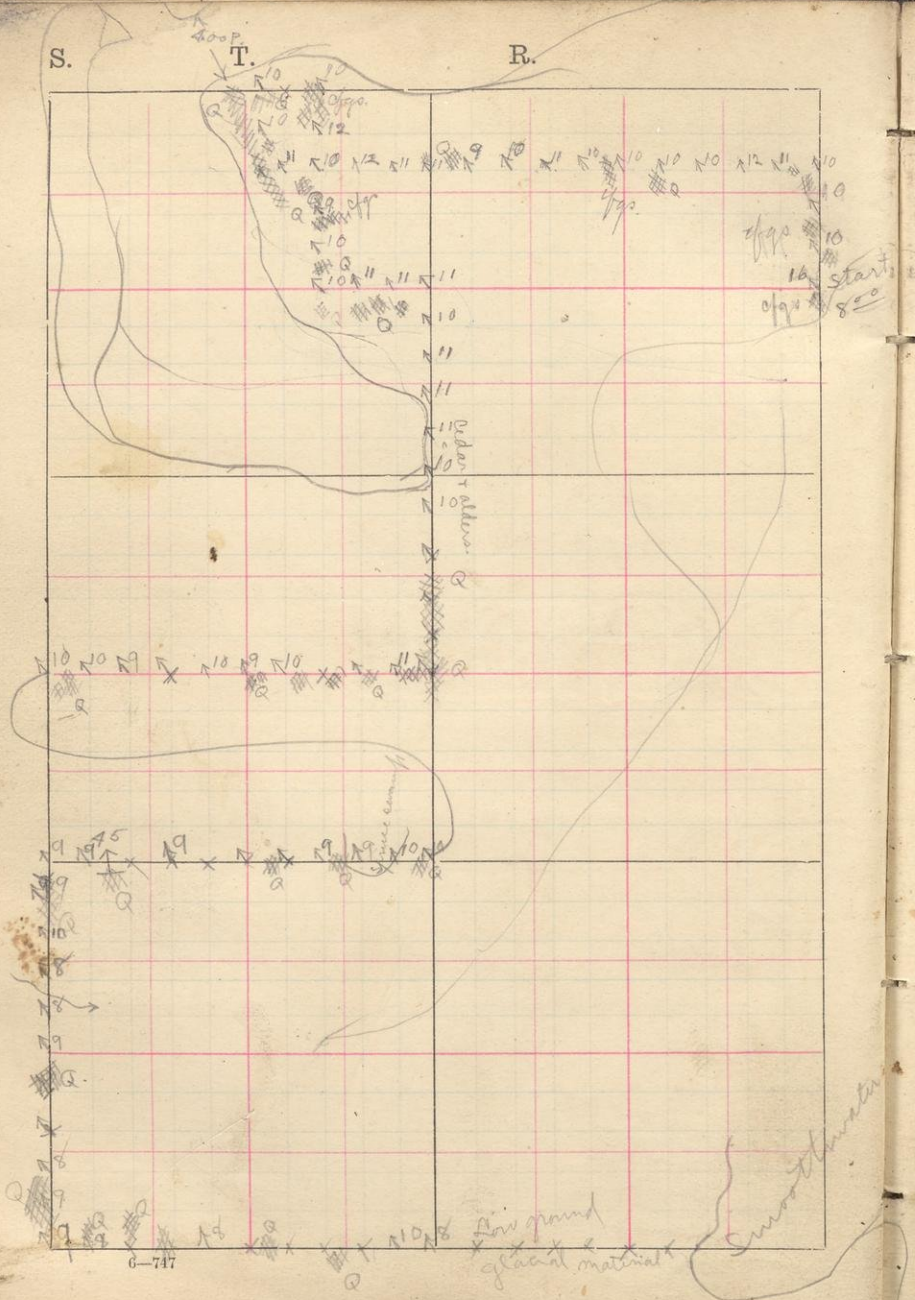
R.

most probable that the actual
ledges fairly represent the whole
area. This sample represents
the best outcrops of the whole
island in richness. The general
sample is taken from both the
best and those only moderately rich
in iron.

S.

T.

R.



Monday Sept 7. Bernhard. comparison

Started at camp on west side of
Smoothwater and ran N 300 paces & then W.
The diorite is considerably mached in
places, and often it is fine grained,
probably due to its being near the
surface of the mass - as quartzite was
found in small patches on it.

200 N 900 W brown fine grained quartzite

" 320 W cfs.

300 N 1450 W turned N on account of Lake.

500 N 1450 W " E " " " "

500 N 1300 W " S " " " "

600 N 1300 W " E " " " "

600 N 1000 W " S to go past Lake

1000 S 1000 W " W.

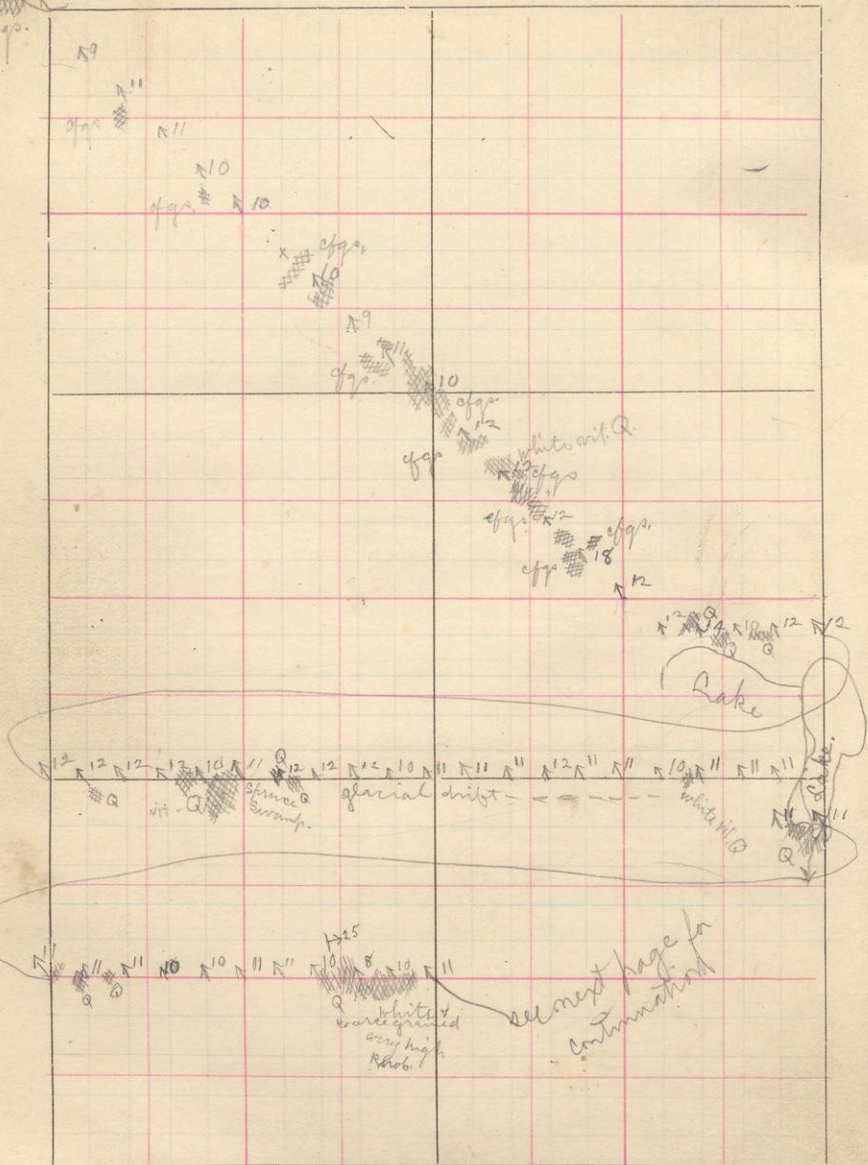
1000 S 3000 W " S

2000 S 3000 W " E

Lake. S. Retent 2.10
 49. 49

T.

R.



Sept 8. 1903. Tuesday. Bernhard, campin.
Started on SE side of Smoothwater
in small bay. and ran SE across a $\frac{1}{4}$ m. bay
and turned east. There was quite a
fair sized lake just south of where we
turned east that might be Apex lake
but it hardly seemed probable.
5000 E. 1700 S of start we turned north.

140

18

200

14

2400

240

240

840

1000

2740

2740

5740

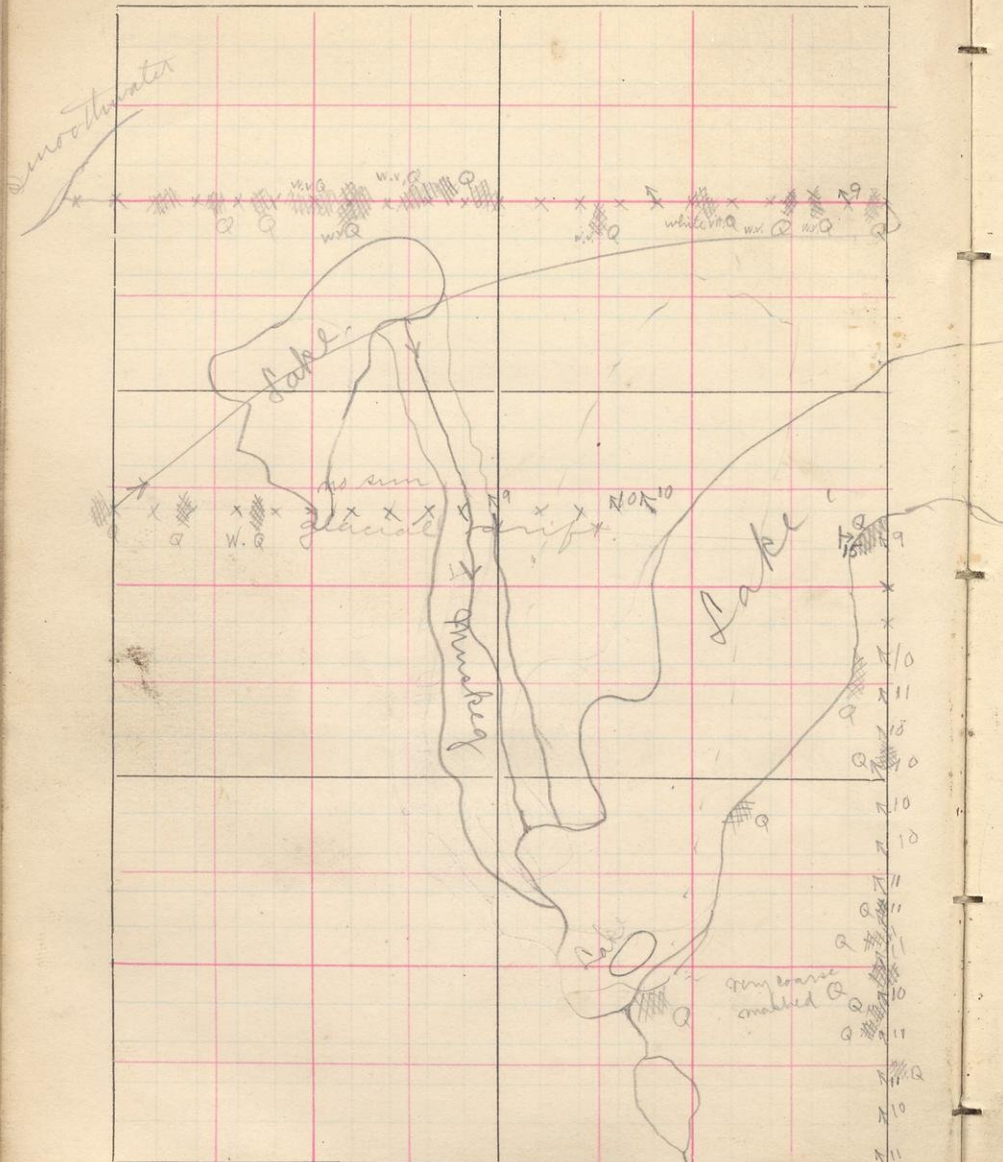
6740

6740

5 1/4

and more

R.

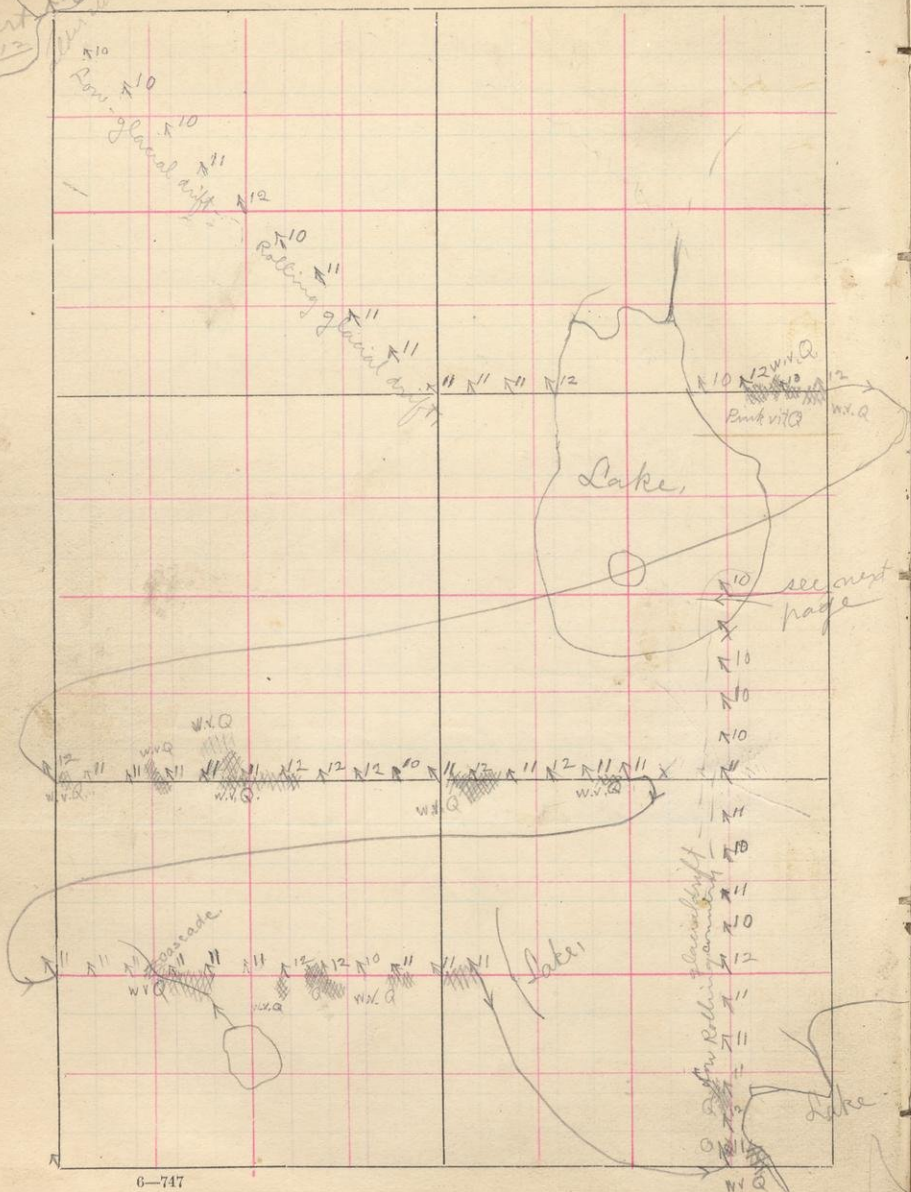


Conti from preceding page

at 1680 N. of 5000 E 1200 S. hit lake
and sighted west across it - estimating
distance at 600 paces. Went around
south end of lake and started
west at a point about 100 N + 600 W
of point where we hit lake on East
side.

The quartzite found varies in
character - from fine grained to coarse
from pure white to dull chocolate
and from exceedingly well cemented
to somewhat less well cemented - altho
none of it could be said to be loosely
cemented. It is all clean and
well sorted.

R.

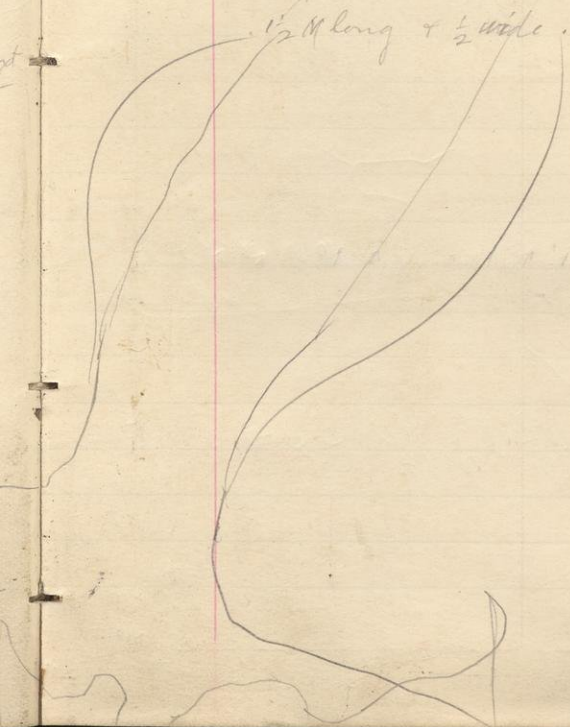


Friday Sept 11

Started at mouth of creek which flows into Smoothwater a little north of the middle of the east side and ran SE diagonally across a $\frac{1}{2}$ M square and then turned east. The country is low and rolling with no outcrops all the way to 1000 S + 1300 E of start.

On the Q at 1000 S, 1800 E there is considerable marking with fissility developed in vertical planes striking E-W.

1000 S, 4600 E turned N on account of big lake $\frac{1}{2}$ M long \times $\frac{1}{2}$ wide.



Compass. time, Watch time.

10.40.

10.40

1.09

1.07

1.54

1.59.

3.10 on line

3.10 on line.

4.29

4.34

Thursday.

8.00

8.11.

8.45

8.51

9.32

9.37

10.08

10.12

10.52

10.58

11.17

11.18

11.26

11.29

1.37

1.41 $\frac{1}{2}$

2.54

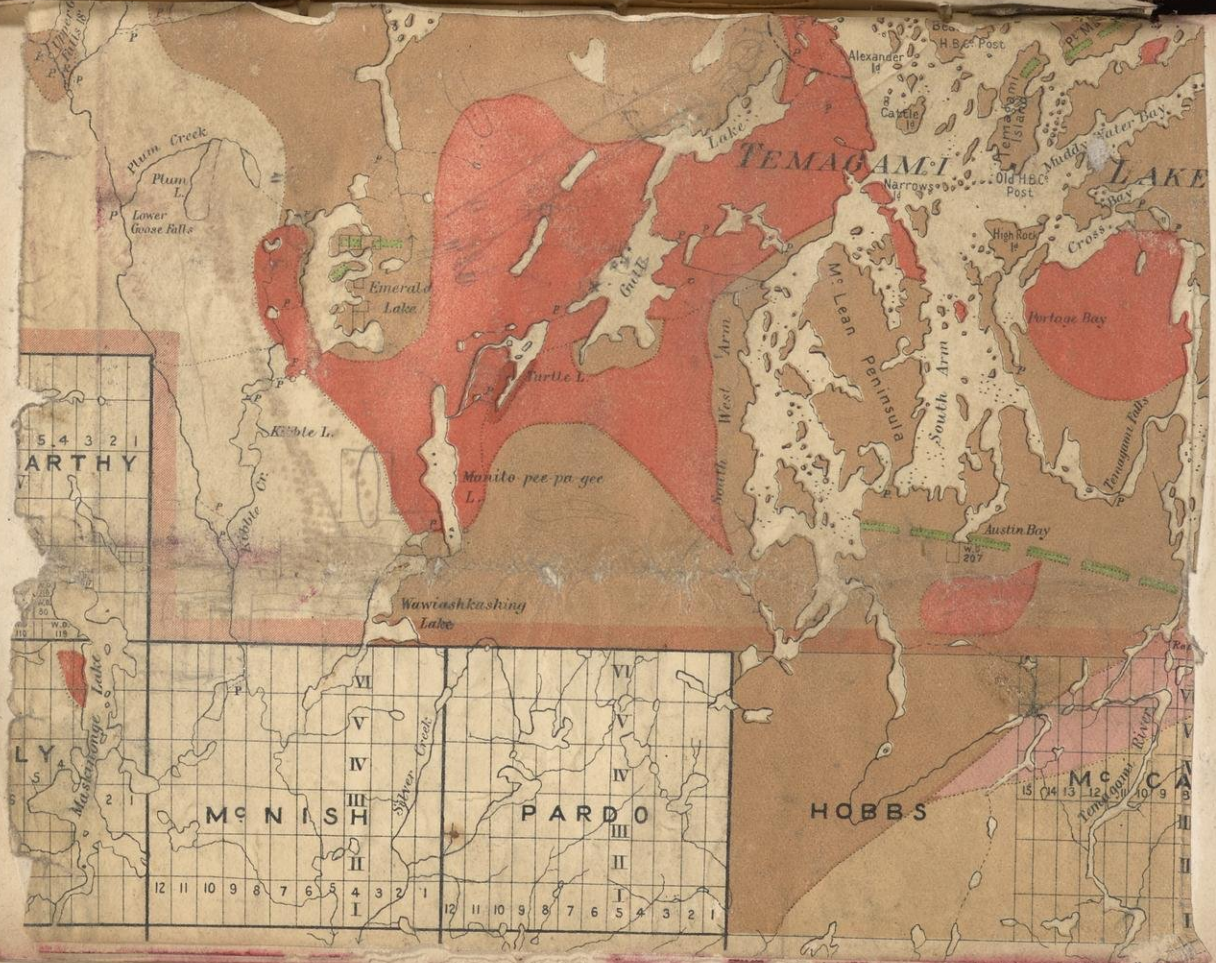
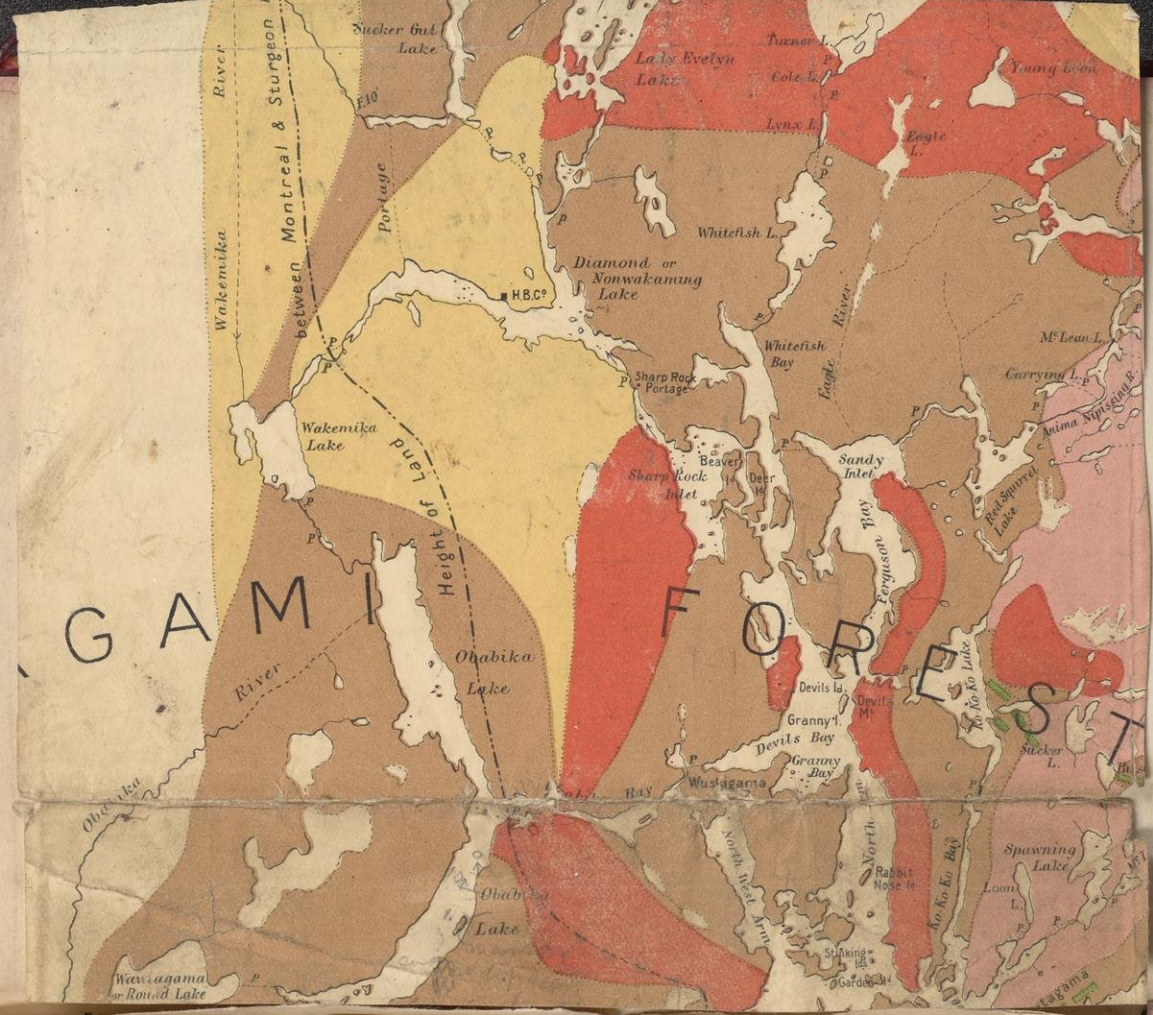
2.57

3.11 $\frac{1}{2}$

3.15

4.22

4.25 $\frac{1}{2}$





wahwahte - lightning
a trace - paddle.
tighigim - day.
ghoma - money.
weadawia - sell
teestprindjiga - buy.

C. F. Bowen
Salt Lake City.





