



Township 44 north, ranges 31 and 32 west, specimens 30205-30224. No. 204 1891

Allen, Andrew
[s.l.]: [s.n.], 1891

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204

LAKE SUPERIOR SURVEY

A. Allen

Index.

LAKE SUPERIOR SURVEY. INSTRUCTIONS.

Topography.—On the left-hand page map as much of the section as has actually been seen, counting each of the spaces between the blue lines as 100 paces, and 20 of these spaces to one mile, or 2,000 paces. The scale is four inches to the mile, and the heavier blue lines, outlining one inch squares, mark forties. Denote streams, lakes, swamps, marshes, etc., by the topographical signs annexed.

The geologist will consult with the compassman, and describe as accurately as possible, the timber traversed. When pine is found, give its proportion; tell whether good or poor, and indicate kind—white, norway, jack. If hemlock is found, note the relative amount. In hard wood districts, designate as good or poor, heavy or light, and indicate predominant kinds, oak, maple, birch, etc. Cedar swamps, spruce swamps, tamarack swamps and meadow swamps will be always discriminated. Outline burnt timber.

Each day, just before leaving camp, the geologist will compare his own and the camp aneroids, and the reading of each, with time, will be recorded. At work the aneroid will be read on gentle slopes at intervals of 200 paces; on steeper slopes at intervals of 100 paces; also at all maxima and minima. When minima are streams the map and notes will indicate this, showing width and character of streams. When a stream has made a cut of importance, aneroid readings will be made where the banks break off and at water level. If instead of an abrupt break, the stream valley has steep slopes, aneroid readings will be made with sufficient frequency to show this character.

At reading points the compassman will stop, read the dial compass, and remain until the records are complete. The readings will, as fast as made, be placed upon the map at the right-hand side of the line traveled, and in the notes, the numbers being inclosed in parentheses, basing the work upon the bench-mark which served as a starting point. At bench-marks the absolute reading of the aneroid and the altitude as shown by the bench-mark will be recorded to serve as a base for subsequent readings. For instance, aneroid 29.13 inches; altitude on bench-mark, 275 feet. At each subsequent reading, by setting 275 on the altitude circle at 29.13 on the fixed dial, altitudes may be directly recorded. When the next bench-mark is found at two miles distance, the difference between the aneroid reading on the basis of the first bench-mark and the second bench-mark will be recorded. At intervals of a half hour during the day the time will be attached to the aneroid readings. Upon reaching camp, after the day's work, the geologist will record the readings of his own and the camp aneroid, and also the time. Interpolations will then be made, based upon the bench-marks and times (not distances) if the day has been one of no abnormal atmospheric disturbances, or upon both bench-marks and camp aneroid readings if there have been unusual disturbances, and the corrected numbers, less a constant of 4 feet, will be placed upon the face of the map at the left-hand side of the lines of travel, and in the notes without parentheses, but the parentheses numbers will not be erased.

At each aneroid reading the trend of a horizontal contour line will be indicated upon the face of the map, making the length of the line correspond as nearly as may be with the actual distance seen. In passing directly up or down a slope, the contour lines will be at right angles to the direction of travel. In passing up a hill diagonally the contour lines will intersect the lines of travel at various angles, which can be estimated and plotted with sufficient accuracy by an appreciation of the north and south direction.

The course of travel will be always north and south. In starting from a quarter or a sixteenth post, the work will be plotted on the assumption that the true course is followed, but upon reaching the next section line the geologist will remain in the position at which the line is struck by the compassman until the latter finds the adjacent bench-mark. The intervening distance will then be paced by the compassman, and the point of intersection of the section line marked. From this point to the starting point, a right line will be drawn as the actual course of travel. The positions of the contour lines, aneroid readings, etc., will not be changed.

Geology. — In running the north and south lines, the compassman will, if possible, determine the course by the dial compass. At the time the geologist reads his aneroid, the compassman will determine the magnetic variation, which will be given to the geologist and recorded in the note-book. Each morning the watch of the compassman will be set to apparent time (corrections being made for the equation of time and for longitude), so that he will need to make no correction in reading magnetic variation. On cloudy days, and at times when the sun is too low for the use of the dial compass, the course run will be by needle upon the supposition that the magnetic variations indicated on the township plats are right when corrected by deducting 3° if the variation is east, or by adding the same amount if the variation is west.

Not less than once per week the accuracy of the watch of the geologist in charge of a party (who will give time each morning to the compassmen), will be tested. This may be done, first, by obtaining correct time from a railway station by means of a pacer when sent out for provisions. Such time will be mean, i. e., watch time for the ninetieth meridian. Second, corrected time may be found by blazing out a north and south section line, preferably a range line, for some distance, setting a signal on the line and placing the dial compass duly leveled, in a north and south direction upon a Jacob's-staff just before mid-day, and setting the watch at 12 at the time the line strikes the noon hour. In a watch thus set all corrections are made.

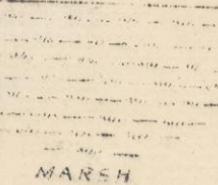
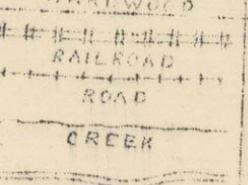
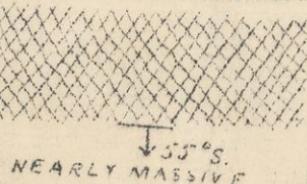
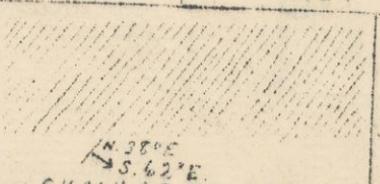
It will be the constant business of the geologist to search for outcrops. All hills within a reasonable distance of the course of travel will be examined. Oftentimes upon the steeper slopes of a hill a rock surface is covered with a coating a few inches thick of moss, leaves or vegetable mold, and can be stripped with the pick. Where the exposure is small and there is the least possibility that it may be a large boulder, indicate this fact in the notes and by a query on the map. All ledges off the line of travel of the compassman will be located by the geologist pacing to this line in an east and west direction, his course being determined by compass.

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, having strike line and dip arrow with numbers attached. 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 specimens representing it. 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, for instance, No. 437, 1226, N., 353 W., Strike, N. 47° E., Dip, 68° S. E. Then follow with as full a description of the ledge as possible.

Collect a specimen from every ledge, and if the ledge exposes different kinds of rock, collect a specimen of all varieties. Take care to get fresh material, unless for a special purpose the weathered surface is desired. Where ledges are infrequent the normal size of specimens will be $3 \times 4 \times 1$ inch. In case several specimens of the same ledge are necessary, and when ledges are numerous, specimens $2 \times 2 \frac{1}{2} \times 3 \frac{3}{4}$ inch will be allowed. In all cases collect chips for slicing. No two specimens will be given the same number. In the cases in which several specimens come from the same ledge, the different numbers assigned to them will enable an easy description of their relations. Specimens will be placed at once in paper bags provided, upon which shall be marked in at least two places, with a blue or red pencil, the specimen number.

TOPOGRAPHICAL SIGNS.

 PINE OR HEMLOCK	 HARTWOOD	 PINTORH MELOC AND HARTWOOD	 CEDAR SWAMP
 SPRUCE OR TANARACK SWAMP	 MARESH	 RAILROAD ROAD	 CREEK RIVER
			 NO STRUCTURE
 NEARLY MASSIVE	 SHALY OR BEDDED	 SECONDARY STRUCTURE	 783°

EQUATION OF TIME FOR 1891.

Day	Min.	Day	Min.	Day	Min.
-----	------	-----	------	-----	------

JUNE.

Add to watch time.					
1-6	2	7-11	1	12-16	0
Subtract from watch time.					
17-21	1	22-26	2	27-31	3

JULY.

Subtract from watch time.					
1-6	4	7-13	5	14-31	6

AUGUST.

Subtract from watch time.					
1-7	6	8-13	5	14-18	4
19-23	3	24-28	2	27-29	1
30-31	0				

102

SEPTEMBER.

Add to watch time.

1- 2	0	3- 5	1	6- 8	2
9-11	3	12-14	4	15-17	5
18-19	6	20-22	7	23-25	8
26-28	9	29-30	10		

OCTOBER.

Add to watch time.

1	10	2- 4	11	5- 8	12
9-12	13	13-16	14	17-22	15
23-31	16				

NOVEMBER.

Add to watch time.

1-13	16	14-19	15	20-23	14
24-26	13	27-29	12	30	11

1891

1

Andrews Allen (No. 2)

Longman

Al. Parker

Note completed June 20, 1891.

SPECIMENS - 205 - 224

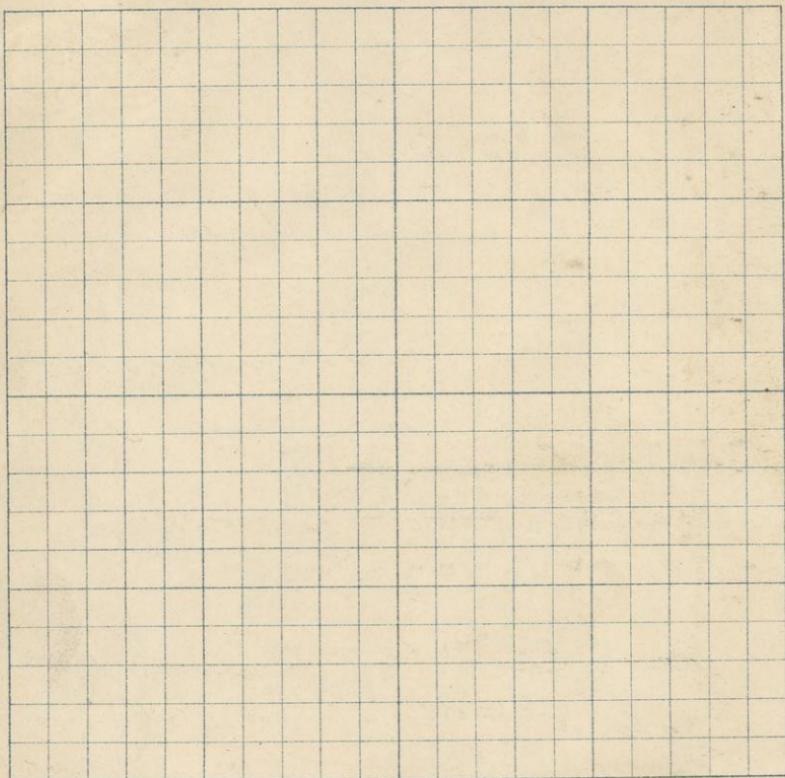
TOWN 44 - 31
8 ✓ 44 - 32

2

S.

T.

R.



Friday June 11, 1891.

Aurora 7.30 28,933

28,950

Bench Marks for today

S.E. cor 23, 31.44 - 363.49

E. 1/2. " S. line. 443.99.

S.E. Cn 35. 396.17.

E 1/2. " S. line 423.07.

Run for today, commencing from S.E. cor of 23, 44. 31. south 2 mts. thence west 4 1/2 miles and two miles & line of highway.

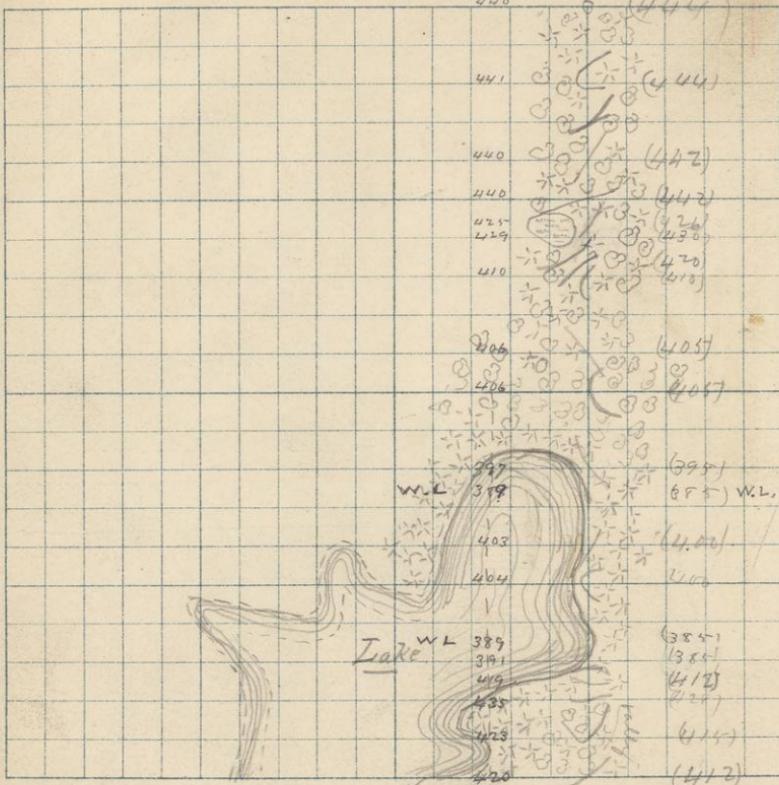
Run for today, commencing from the E. 1/2 & just on South line of 23, 44, 31, two miles south, thence 500 paces East, then 2 miles North to the line S.E. corner of 23.

On B.M. (27,880) 9.5-
set 440 (444)

(800 - 28,82)

4

S. 26 T. 44 R. 31



Run. South from $\frac{1}{4}$ stake

maple and hemlock
marsh

200.	441	(444)
300	449	(452)
	edge of tank	
400	440	(442)
500	440	(442)

335	425	(426)
	bottom	
	Balson + hemlock undergrowth	
	edge of small marsh	
600	429	(430)
665	420	(421)

Hemlock + maple

700	410	(410)
770		

	Jack pine, Balson	
	undergrowth, - maple + hem.	
900	9.30	406 (405)
	enter maple + elm good hardwood trees	

1000	406	(405)
1200	397	(395)
	base 30 feet to West	
1250	edge of base	

S.	35	T.	44	R.	31
420					
417	3	3	3	3	(400)
424	3	3	3	3	(427)
405	3	3	3	3	(395)
411	3	3	3	3	(400)
421	3	3	3	3	(410)
427	3	3	3	3	(415)
421	3	3	3	3	(408)
413	3	3	3	3	(408)
424	3	3	3	3	(410)
426	3	3	3	3	(412)
414	3	3	3	3	(404)
423	3	3	3	3	(408)
417	3	3	3	3	(402)
409	3	3	3	3	(396)
428	3	3	3	3	(412)
412	3	3	3	3	(396)
422	3	3	3	3	(415)
427	3	3	3	3	(420)
420	3	3	3	3	(412)
420	3	3	3	3	(402)
424	3	3	3	3	(405)
405	3	3	3	3	(356)
131	419				(400)

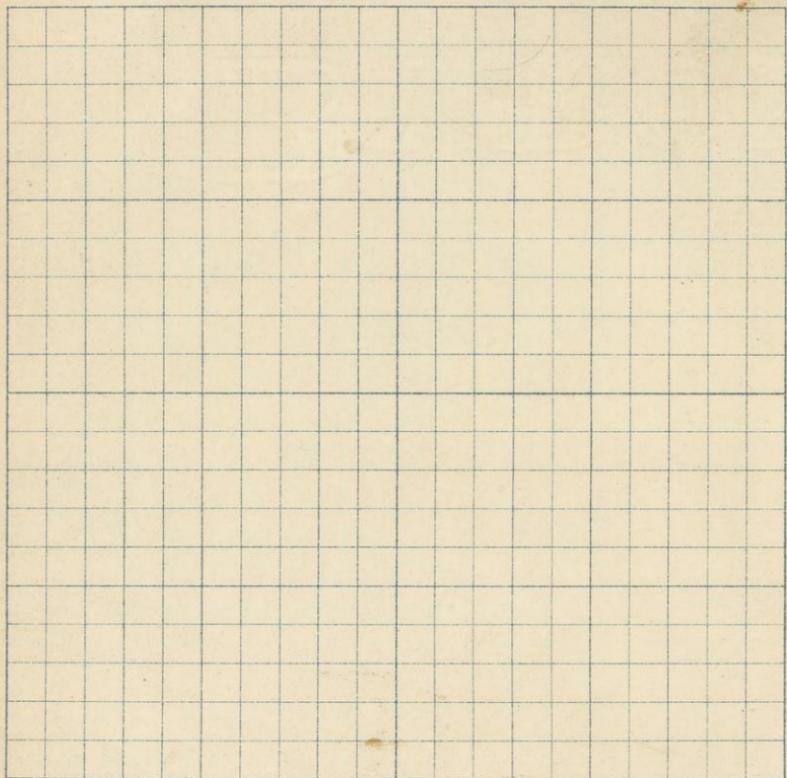
Rum South in continuation
of line shown on preceding page.

1255	Water level	388 (383)
	lake fringe with norway pine fine cedar and birch	
1400		403 (400)
1500		404 (400)
1607	enter lake	
	water level	390 (385)
	top of bank	401 (405)
	10 fms from water	
1675	leave lake	
1700		391 (383)
1750		419 (412)
	Mixed pine, cedar hemlock & balsam	
1870		435 (428)
	Top of Bank	
1900		423 (415)
	balsam & hemlock	
2000		
	Stump root blaze	420 (412)
39		417 (408)
100	magl. Birch & hemlock	434 (428)
200		405 (395)
300		411 (400)
400		421 (410)
420		429 (415)

S.

T.

R.



2564. 421 (407)

624 413 (400)

Enter cedar & hemlock swamp
immature, lean, tall 424 (410)

700 Cedar Elm & Hick

777. Heavy hardwood timber
most, maple

700 426 (412)

900 414 (400)

Mixed forest

1000 11. AM 423 (407)

1157. ~~over~~ 417 (402)

Hemlock timber

1200 min 409 (394)

1250 max 428 (412)

1300 412 (396)

very heavy timber

Hemlock + hardwood (415)

1400 432 (415)

1500 437 (424)

1600 430 (412)

1750 420 (402)

Wet end of marsh "

1800 424 (405)

Maple timber

10

S. 33-

T. 44

R. 81

		392	
387			
388	27		
398			(400)
397			
402			
402			(412)
402			
383	+		(392)
411	+		(420)
416	+	20	(424)
408	+	20	(416)
413	+	20	(420)
392	+	20	(400)
405	+	20	
405	+	20	(412)
397	+	20	(404)
406	+	20	(412)
392	+	20	(400)
400	+	20	(405)
400	+	20	(405)
380	+	20	(385)
392	+	20	(394)

Rim Rock from S.E. cor 35-

2000 405 (386)
struck line, 5 faces

East of Stake
at Wagon road

On B. M. 11.30 419. (400)
(25.9.10)

Marked 1423.07

500 faces East to Sen Sec 35.
Thence stars And firm just

12 On B. M. (28930)
set at 392 (396)

(29.090 - 230)

In cedar + hemlock swamp
50. leave swamp
enter sparse hardwood timber

100. 380 (375)

114 Wagon road

Hardwood & Hemlock

300 400 (405)

500 Enter wind fall & 402 (408)
turning - dead pine
timber

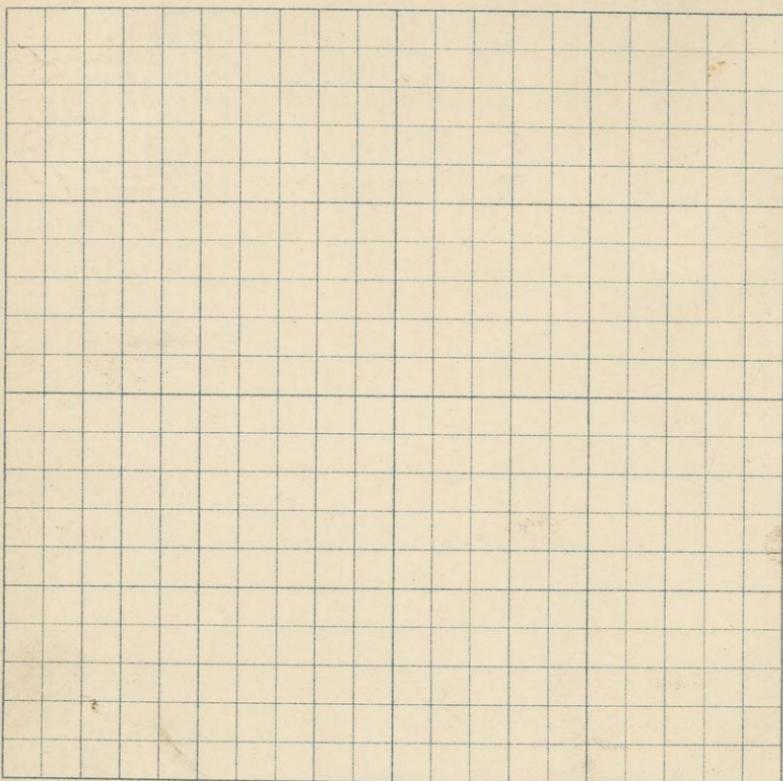
600 406 (412)

leave wind fall
enter hemlock + cedar

S.

T.

R.



700.		397 (404)
	scrub timber, falson	
	hemlock etc	
800.		403 (412)
1000	12.15	393 (400)
1020.	enter tamarack swamp	^{12.20} 413 (412)
1143	leave	408 (416)
	enter fine Hemlock and hardwood	
1200		" 416 (424)
1300		411 (420)
1366		383 (392)
	Enter tamarack swamp and open marsh	
1400.		492 (474)
	leave tan swamp	
1400	Hemlock timber	402 (412)
1620.	marsh	409 (420)
1700		397 (407)
	marsh and pond along soil faces to East	
1720	top of bank	398 (410)
1776.	reenter open	388 (400)
	tamarack swamp	
1890	leave same	387 (400)

14

S. 26

T. 44

R. 31

359	3941
375	4701
369	(4103)
372	44039
380	44121
381	4121
375	(405)
391	4420
420	4501
415	(414)
379	4105
365	(390)
382	(4106)
285	(408)
380	42041
380	(397)
414	4321
399	(418)
401	4157
392	405

Run 14th in continuation of
line on preceding page

2100 12.43 392 (403)
 struck line 15 fathoms
 west of corner post
 corner in tamarack swamp

133. max. 401 (415)
 maple with a few
 large white pines

210 399 (415)
 250 top of ridge 414 (432)
 337. foot " 1. 10 380 (397)
 354. Enta cedar swamp 1. 30 380 (404)
 there is actually a
 slight fall between the
 two above stations

300 985 (400)
 600. cedar tamarack and
 a little scrub hardwood

700 382 (406)
 800 mensl and lade on East ³⁶⁵⁻ (391)
 840. took offset to East 57 fathoms
 as far as

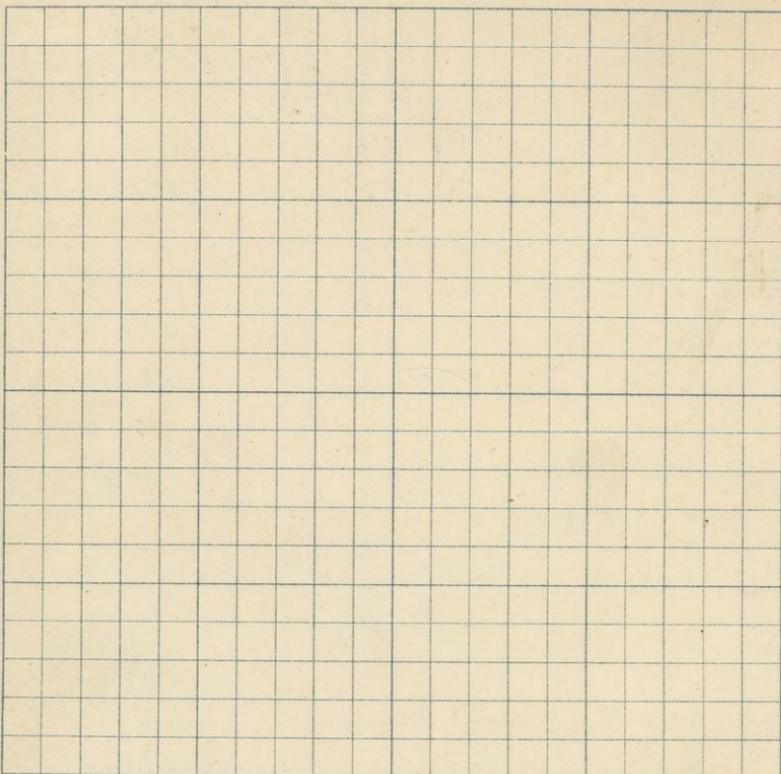
920. entire spine and
 tamarack swamp

1000. leave swamp 399 (405)
 enter Hemlock

S.

T.

R.



1120		415 (442)
1200	max	430 (458)
1310	foot of bank scrub cluster mostly Seminole and tied	391 (420)
1430	min.	375 (403)
1500	max	381 (412)
1542		380 (412)
1600	enter Tamarack swamp	372 140st 2.20
1800	leave	369 (403)
1900		375 (410)
1920	return	..
1975	strike E of W line 24 step West of corner On B. M. (344) (28.921)	359
	Mauska	363
	2.35	
At Camp.	28,678	Camp Amore
	28,899	No 10
	221	

S. 27 T. 44 R. 31

373	373	(373)
376	376	(380)
358	358	(362)
378	378	(382)
370	370	(374)
347	347	(342)
358	358	(362)
380	380	(384)
394	394	(395)
371	371	(375)
396	396	(400)
360	360	(364)
366	366	(370)
368	368	(372)
368	368	(372)
396	396	(400)
412	412	(417)
380	380	(380)
421	421	(425)
440	440	(444)

Run South from S $\frac{1}{4}$ Sec 22 T 44 R 31

Sat June 13

19

Run for Today

South from $S\frac{1}{4}$ 22. 44. 3113. M. - $S\frac{1}{4}$ 22. 372.W. $\frac{1}{8}$ m S. line 22 364. $S\frac{1}{4}$ 34 422.W $\frac{1}{8}$ m S line 34 420.

Camp Amoria 27,725 } 7.45 AM

Aneroid 11.10. 28.944 }

On 13. M. 8.40 AM (28,905)
(d-20 - 27.74) 368 (372.)Starts from $S\frac{1}{4}$ just S of 22
run ~~thru~~ South
Hemlock & Hardwood

150. 373 (377)

200. max Burnt pine (Norway, and 376 (380)
Spruce)300. enter tamarack and 358 (362)
cedar swamp

350. leave swamp

enter burnt timber as
before

400. max 378 (372)

460. log of fence 370 (374)

500. bottom cedar 358 (362)

550. tamarack swamp 358 (362)

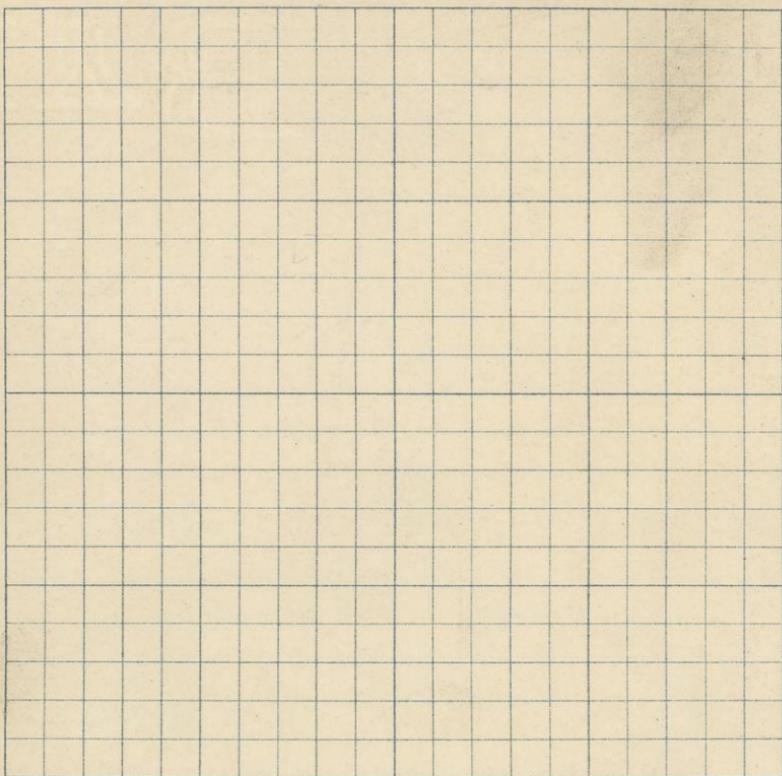
Leave " "

20

S.

T.

R.



600	max.	380 (384)
	burns or partially burnt fir, hemlock and hardwood	
740	top of bank	394 (394)
800	min	371 (375)
830	max	396 (408)
	burns Hemlock and hard wood	
980	burnt tamarack swamps	360 (364)
970		
985	small creek flowing west	
1000	9. 25)	366 (370)
1165	max. burns hemlock and hard wood	381 (385)
1220	edge of tamarack swamps	366 (370)
1300	in ..	368 (372)
1400	leave swamp enter Hemlock and hardwood	368 (372)
1500		396 (400)
	Standing Maple and fir trees.	
1600	good maple (leav)	413 (417)

22

S. 34

T. 24

R. 31

1700:		421 (425)
2015	struck E. & W. line 440 (444)	
	timber same	9.50.
	quater post not standing	
	but found upon the ground	
200		424 (425)
	Timber same	
370	Old wagon road	
400		404 (407)
600:		401 (405)
700	Timber as before	386 (390)
	with Hemlock, Cedar and	
	Balsam Undergrowth	
1000	10.30.	396 (400)
1200	Cedar and Hemlock	396 (400)
	Beginning to mix with the	
	Maple	
1363	Enter tamarack swamp	391 (395)
1400	" "	391 (395)
1536	Leave "	
	Enter Cedar Hemlock	
	+ Maple	
1600	Maple country as before	386 (390)
1700	Cedar Undergrowth	412 (416)
(2002	struck E. & W. line	
1995.	wagon road)

24

S. N. 34° S. D. S. 30° E. 90° T. 44 R. 31

463	1091	15(32)
3461	D	(305)
45-8	2057-200-207-208.	
	2057	(300)
413	208000000	(1452)
	208000000	
415	208000000	(450)
	208000000	
403	208000000	(435)
	208000000	
309	208000000	(428)
	208000000	
411	208000000	(436)
	208000000	
402	208000000	(431)
403	208000000	(431)
405	208000000	(418)
	208000000	
408	208000000	(416)
	208000000	
414	208000000	(420)
	208000000	
416	111111111	(420)

Run North from the West 1/4 post
South side of sec 34

Struck E. & W. line 300 paces West of
 $\frac{1}{4}$ corner

The Dial compass was not used
 as they are all undergoing repairs.
 this course was run by the magnetic
 needle, and the changing variation
 is accountable for the error in
 line

On B.M. West $\frac{1}{10}$ S. side 34. 11.10

416 (420) (28.851)
 Maxed (420)

Starts to run north from
 W $\frac{1}{8}$. S. side of 34 11.13-

On B.M. 416 (420) 28.86
 (520-25.75)

3° wazn road

200 414 (420)

Maple with cedar and
 balsam undergrowth

400 and Hamlock 408 (416)
 cedar, mingled with
 maple

600 408 (418)

740 Enter tamarack swamp 403 (415) 11.44

770 11.45 402 (416)

5.

T.

R.

770.	same place 12,10	402 (421)
760.	leave swamp	
	enter cedar ^{timber} undergrowth	
	and maple ^{timber}	
900	maple	411 (436)
1090.	min.	399 (428)
1200		403 (435)
1300.	good leaf maple	
1400		415 (430)
1500.	old wagon way	
1600		419 (45-2)

205- 1725' paces Nth and 1515' paces
West of St. on Sec. 34. T 44, R. 31

205. large ledge of rock.
about 200 ft long, 10 ft high
and about 100 ft wide
lying with its axis N and 30 W

the structure could not be
definitely made out.
but the principal plane of
cleavage has the following strike
and dip.
Strike N. 10° W. Dip 75° N 80° E

S. 27 T. 44 R. 31
360 (430)

Run ~~not~~ in continuation of
lines preceding page

~~20~~

205 Specimens from Southern
206 face

207

208 } from centre where there
seems to be a mass, around
which the strata of 205 and
206 are piled

edge located on pp 27
and on May 10 24

1762 1.20 45.8 (304)

1900 461 (305)

2000 463 (305)

209 2000 faces Nort and 25 faces West of
S.E. en. of sec 34. Town 44 R. 31.
about 30 ft long its axis runs
N. 10° W.

209. nearly massive, but general
directive of foliation is in a
plane whose strike is Nort. and
dip 30°. East

ledge somewhat weathered

200. entr. part all turn 458 (505)
naph

270 edge of bank 457 (505)

360 ~~the~~ mm. 430 (480)

460 439 (490)

52

T.

R.

576. paces N.W. and 21 paces W.E.
 210 of sec 27, T. 44, R. 31
 good ~~size~~ ledge of

strike, N. dip East 70°.
 about 100 ft long 20 ft wide
 and 4 ft high. Trends of are
 to the about North.

000 445 (497)

211 200 paces N.W. and 20 paces W.E.
 211 of sec 27 T. 44, R. 31

Strike and dip as before
 ledge about 60 ft long

780 2, P.M. 411 (465)

turns fine, Hemlock and
 hardwood

900 top of bank 389 (443)

940 bottom' cut 369 (426)

Cedar swamp

1028 2, 15 - 353 (412)

Leave swamp on
 extra bumps

1040 max 368 (428)

1070 creek 364 (425)

1162. reenter swamp

52

T.

R.

1200	368 (430)
in tamarack swamp	
1250	leave
	enter balsam
1300	379 (443)
1400	383 (440)
partially burns cedar and hardwood & pine	
1600	377 (443)
1800	398 (445)
1849	354 (423)
enter cedar and tamarack swamp	
2000	struck E & W line
1980	leave tamarack swamp
2000	struck E & W line
15 faces West of corner	
On B. M. 2.50 p.m (430)	
marked 364	360. (28.848)
At camp	
Camp Aurois	28.620 3.10
As 10	28.864

~~34~~

Sec 28-1-

S. 27

T. 44

R. 31

335	(389)
360	(375)
361	3 (370)
342	(378)
349	(370) (373)
365	(372)
366	(372)
367	(375)
350	(360)
363	(364)
358	(370)
363	(371)
369	(387)
365	(378)
374	(388)
375	(390)

Run South from N. 5. on Sec

28.

June 15. (Monday) 1891
Camp Anawid

7. A.M. 1810. 28,799
Camp Anawid. 28,565

Beach Marks

S.E. cor	21.	389.
" "	33.	358, 406
E $\frac{1}{8}$ South	21	358, "
E $\frac{1}{8}$ " "	33	529..

On B. M. ^{SE} corner, 21 (28.816)
(300 - 27,861) 7.15 395 - (339)

On tamarack swamp

100.	leave swamp	360 (365)
134	max	364 (370)
200.	reenter tamarack swamp	342 (348) (346)
360	leave swamp enter fir timber	349 (356)

300		365 (372)
600	second growth hardwood mayb tuck of Elm	366 (372)
735	top of bank hardwood and fir timber	367 (373)

~~36~~

~~36~~
*
23

S. 34

T. 44

R. 31

375	376	(392)
377	378	(393)
379	380	(394)
381	382	400
383	384	(410)
385	386	(412)
387	388	(413)
389	390	(414)
391	392	(415)
393	394	(416)
395	396	(417)
400	401	(418)
402		

Run South of in continuation
of line on preceding page

700 in tamarack swamp ³⁵¹ (360)

1000. 350 (360)

1300 8 A.M. 363 (364)

1330 creek flowing west about 1 ft wide

1400 large creek or slough

1412. other bank 358 (370)

1584 leave swamp 365 (375)

enter pine burning

1630 max 369 (382)

1670 enter swamp again

1700 365 (378)

1859. leave. .

enter burning

1900 in " 374 (388)

1996 leave burning 375 (390)

~~enter tamarack swamp~~

stuck E of W line 38 faces

West of post

Start at post

edge of swamp

100 max 376 (392)

in burning.

165 enter tamarack swamp

200 edge of swamp 371 (388)

5.

T.

R.

400 in swamp 374 (39.2)

hemlock timber along 100
feet to East

600 in swamp 8.45 372 (39.0)

700 " " 371 (39.0)

940. leave "

952 max high ground 380 (40.0)
end of spur of dry land

992. 1/4 Stake - Cedar swamp
fine spring 10 feet east of
jet
spiral jet, deposit iron
in good amounts

1100 in high 389 (41.0)
spring cedar swamp

1133 leave swamp
enter tamarack cedar
& hemlock & fir

1200 400 (42.2)

1300

1337. min 392 (41.5)

enter cedar swamp

1400 in " " 391
9.30 (41.5)

1570. changing to tamar " "

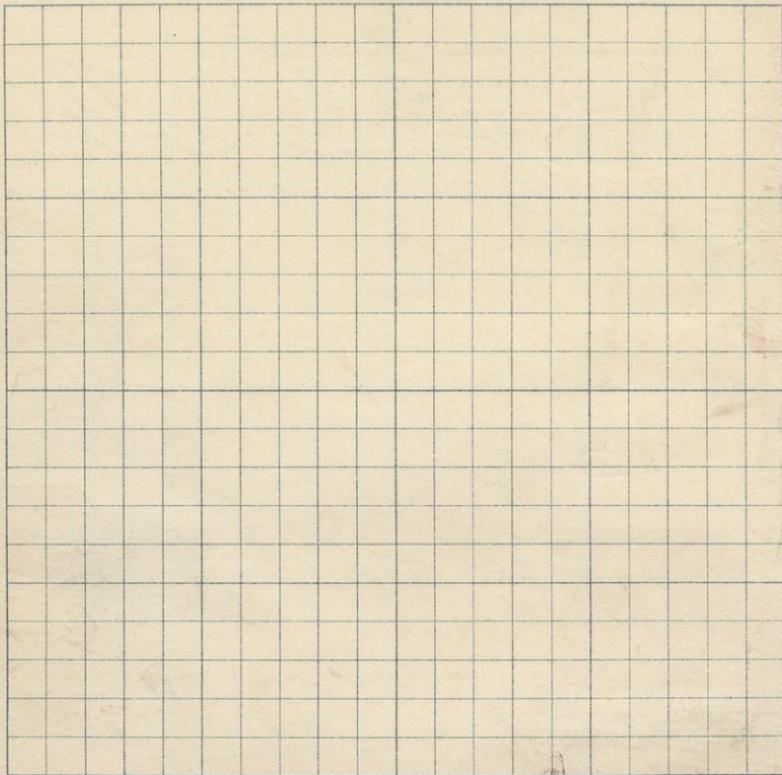
1700 390 (41.4)
a little maple and elm

40

S. 33

T. 44

R. 31



Sec 4, Town 43, R. 31

Map of Outcrop.

1900 " 399 (426)

On B.M. 10 A.M. 402 (431)

402 (431)

(28,713)

1965 faces Nod. & 250 faces W. of S.E. cor. Sec. 4. T. 43. R 31 N.

ledge of slaty iron ore.

dij. 80° E. strike N. El. 45°
anewa,

~~anyord
insufficient not charged~~

250 faces, ^{They} from corner (alone) and
33 faces to South.

213 20 facts to south of previous one Cl. 486

size size

that no distinctive stroke or dip could be observed.

20 paces South W. of previous one

214. Enry quarry site dig. S 60 E. 65° strike N. 30° E.

El. (506.)

415. Strike N. 45° E. dip. S. 45° E. 60°

S. 33

T. 44

R. 3)

377	Beamed	(404)
361	543	(388)
353	6-5-5-5-5-5	(380)
259	6-5-5-5-5-5	(382)
368	6-5-5-5-5-5	(380)
365	6-5-5-5-5-5	(385)
366	6-5-5-5-5-5	(385)
381	6-5-5-5-5-5	(398)
	Beamed	
344	500	30
405	500	(460)
420	500	(430)
420	500	(432)
411	500	(422)
421	500	(430)
492	500	(440)
480	500	(486)
525	500	(529)

Over 500 faces.

Passes exposures on South side
of line as noted ^{map} on previous
page

On B. M. 11. P.M. (5:50) (5:50)

marked 529.

Rest at 525 (5:29)

(10:00 - 24.070) (28.592)

Maple and other hardwood
timber.

Exposures of bedrock are not to
be taken up the line, and for
about 200 faces, 21 feet high,

216 100 faces West of S.E. cr Sec 33. Igneous
216 granite & quartz. On line 50 faces. West
dig about 70% ^{about last} Had no needles
so strike could not be planned, about No.

11.25 On Beach Mark.

former reading OK.

A great many exploration pits
sink in the vicinities

100 480 (24.86)

150 wagon road 432 (44.0)

foot of bank

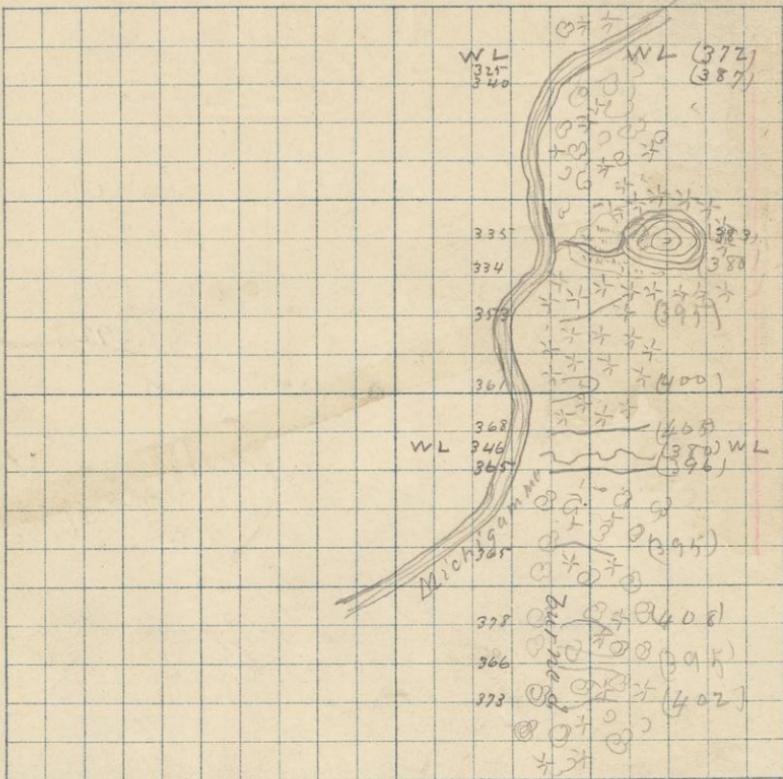
a vacant mining shaft 10 faces
East

44

S. 28

T. 44

R. 31



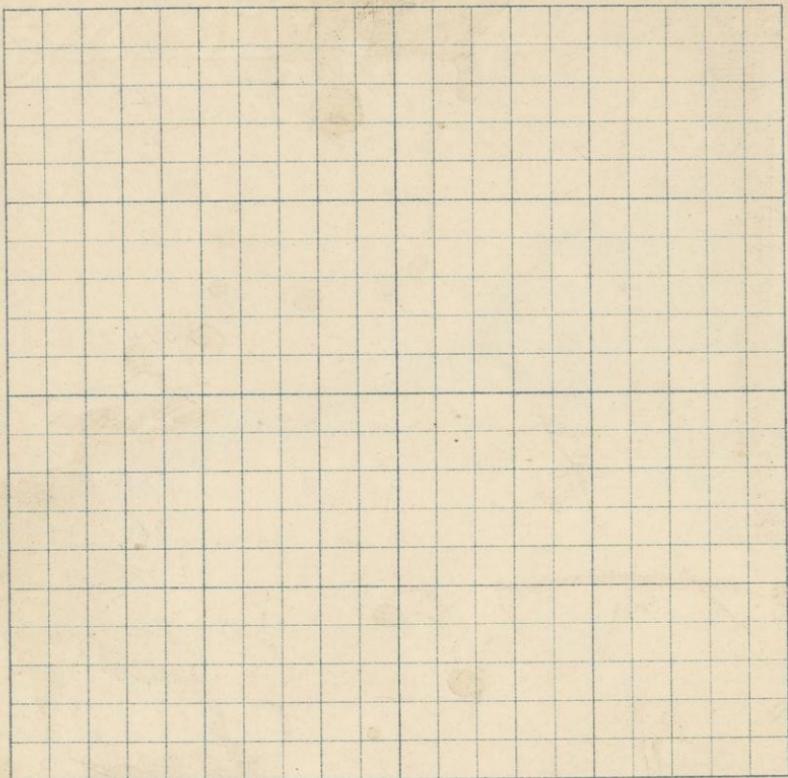
Run north in continuation
of line on preceding page

300.	top of range	421 (430)
400		411 (422)
500		420 (432)
700	timber as at first	421 (435)
736.	" "	403 (420)
	with a little cedar fence and hemlock	
800	water of burned timber	394 (410)
900	water of burned timber	
1000	in 11.53" "	381 (395)
1060.	enter burned cedar and tamarack swamp	386 (385)
1200		365 (385)
1400		368 (380)
1600		359 (382)
1800		355 (380)
1900	leave swamp 12. 35861 (388) enter burnt timber	
2000.	near. in " "	377 (405)
200.		373 (402)
300.	near	366 (395)
400		478 (408)
600		363 (393)
800		365 (396)

S.

T.

R.



top of bank

825. bottom of bank. 12.53 346 (380)

creek. 4 ft wide flowers were

Same place 1.20 348 (380)

900. top of bank 368 (405)

1036. mi 361 (400)

burnt & faithfully burnt

Hemlock, cedar, & Sandwood

1172. enter returned to the

same as before

1200 353 (395-1)

1343. enter small open marsh 334 (380)

lake 200 ft in dia.

about 100 falls at East of 1400.

1370. outlets about 10 ft wide

no perceptible current

1400. cedar and tanacetum 1.55 ³³⁵ (382)

in the fringed lake

outlets and marsh

scrub tundra. Salal, myrsinace etc

1450. bank of river. 340 (38.2)

W.L. 325. (372)

~~1500~~ bank - W.L. same

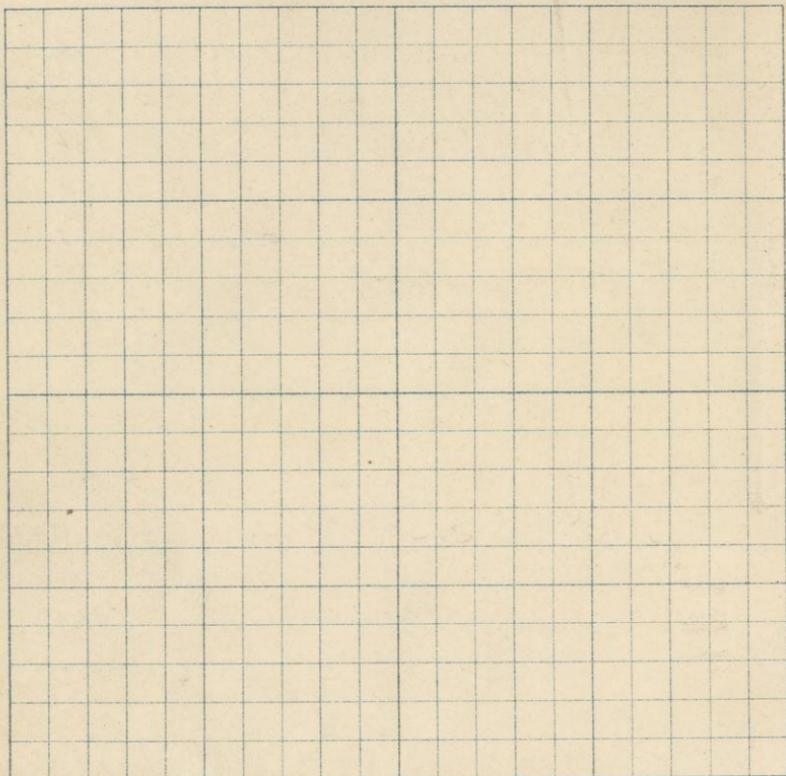
most shading on bank was

since slope was very uniform between

S.

T.

R.



On P. M. 2.35 (405). (28.730)
marked 347 (351)
took the pencil in the pocket
because could not find it

To camp. 28.695

Camp Around, 28.430

4 P.M.

Specimens sent in
up to 216 inclusive.

50

S. 29 T. 44 R. 31

366		(370)
367		(371)
356		(361)
368		(372)
360		(364)
358		(347)
346		(350)
331		(335)
337		(341)
333		(372)
354		(337)
WL 335		(347)
WL 235		(337) WL
364		(368)
371		(375)

Tuesday June 16, 1891
Bench Marks for today

$S\frac{1}{4}$	20.	44	81	370
$W\frac{1}{8}$, S. side	"	"	slab	369.
$8\frac{1}{4}$	32	"	10" thick. 70' East of	370
$W\frac{1}{8}$ S side	"	"	10" cedar, 25' East of	383.

Anchors

1510. 28,500

Camp Anchors 28,562

Ran for today. South from $S\frac{1}{4}$ 20. - 2 miles, then West 300 paces, then North 2 miles to the West 1/8 pros South side of 20,

On B. M. 9.25 (28,81)

(28,50 - 650) 366 (370.)

Burnt timber

200 m 367 (371)

250 leave ..

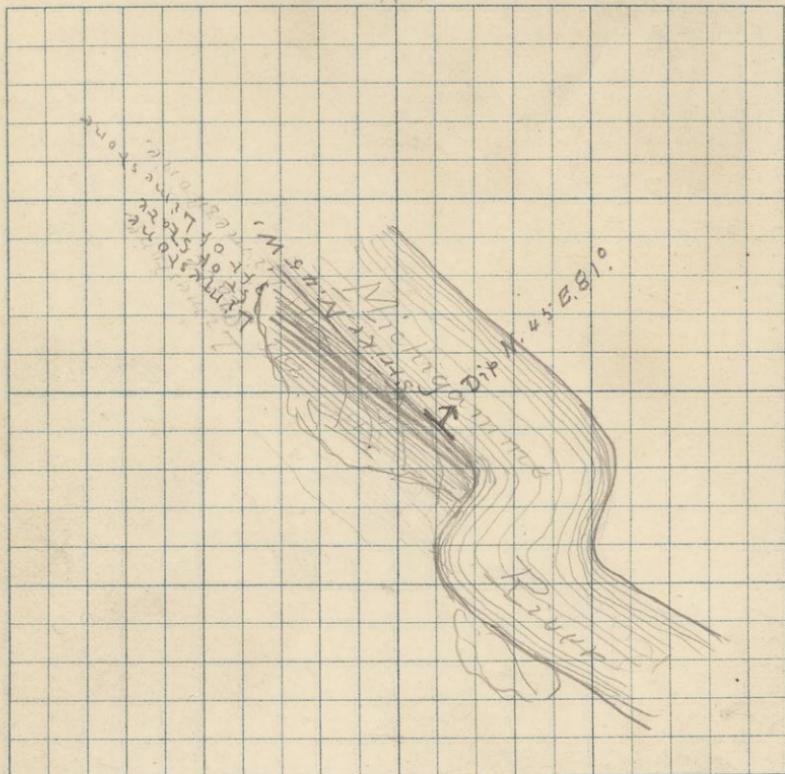
ent. hemlock and
hardwood

300. m. 356 (360.)

S.

T.

R.



S

Map of Outcrop. Specimens 217 & 218
 1750 paces N. & 800 W. of S.E. cor 52.
 Scale. small square = 10 ft.

350. enter first trail 368 (372)
 300. 360 (364)
 700. 354 (358)
 725 enter swamp open 346 (350)
 mouth of
 868. creek flowing west
 900 331 (335)
 1100 bottom of bank 337 (341)
 1125 to "Lanawood" enter fur 333 (372)
 1300 hemlock & "Lanawood" 354 (358)
 1325 by of bank leading to 344 (347)
 lake
 1400 water level 335 (338)
 1575 South Shore W.I. 10,20335 (339)
 1600 by of bank 354 (358)
 return bank as before
 1700 enter returned
 maple and hemlock
 1800 364 (368)
 1900 371 (375)
 1990 struck E. W. line 13 pace
 of stakes, marked "about the $\frac{1}{4}$ stake"
 The correction as to distance
 should be applied at the lake,
 as the distance across was
 estimated by the compassman

54

S. 32

T. 44

R. 31

Run South in continuation
of line on preceding page

as taken near two hills
30 Wagnroad. to Crystal Falls

55

100	360 (364)
250.	351 (353)
300	346 (350)
325	342 (346)
356. top of bank of Michiganne river	324 (328)
Water level.	10.43. 321 (324)

217. Crystalline limestone.

1730 faces Nort, and 800 face
west of S.E. Cr 32
strike N. 45 W.

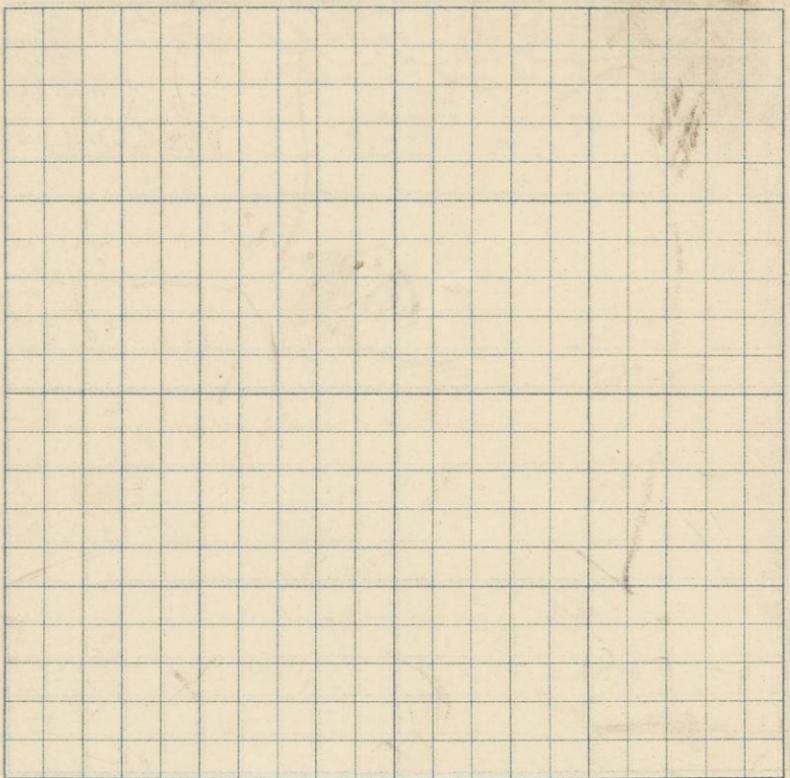
dip, N. 45 E. 81°.

Shale. moderately ~~thin~~
interbedded with limestone
as shown in ~~the~~ drawing on
previous page. dip & strike
same as limestone
total exposure about 100 ft
long and 25 ft wide.
trend N.W.

S.

T.

R.



426 W. Is., South bank. 321 (326)

67 ft bank 329 (332)

580 12. M 332 (335)

576 max. 333 (356)

turn thin to

6.37 enter Maple timber

rather heavy

725. max 357 (360)

789. min 348 (350)

700. — 350 (352)

900. 379 (380)

1 1000 407 (408)

219. no faces west of line.

could not make out

direction of bedding

pieces with delatates

yet ^{very little} doubt of true outcrop

1100 12. 38² (397)

1300 some hemlock 357 (355)

mixed with hardwood as

before

1500 362 (363)

timber becoming thinner

1600 min. 358 (358)

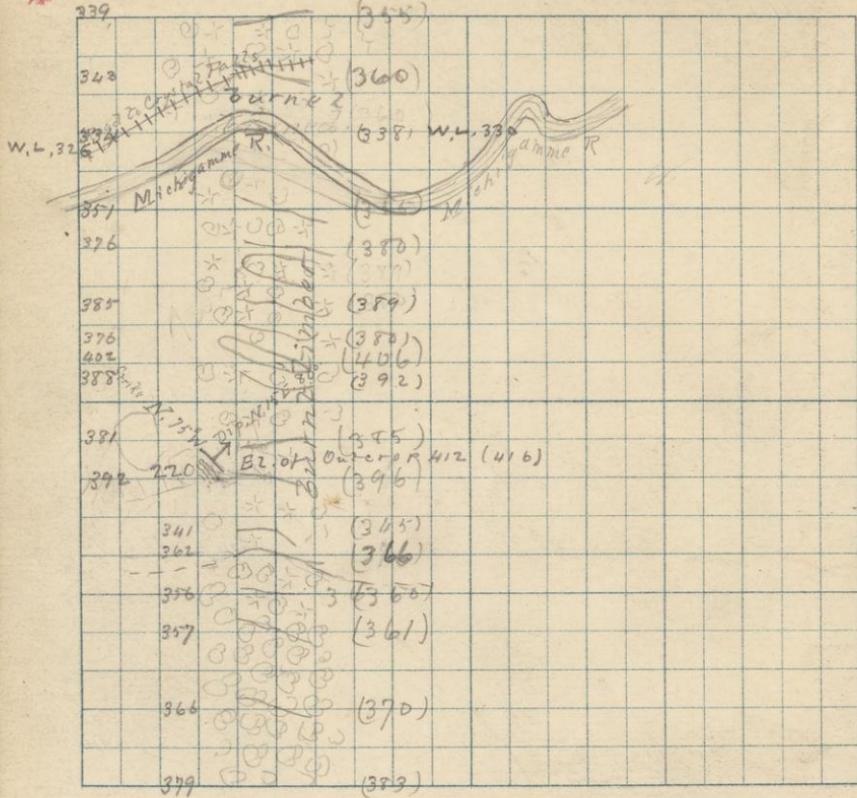
1700 " 358 11

58

S. 32

T. 44

R. 31



Run back from W. to post S side
Sec 32.

1500	enter burnt timber	375- (375)
1900	more	376 (376)
1990	hit 44 Post. Ex. Wilkin at 1/4 post.	
12.30	On Beach	365. (28,826) (365-)
	<u>Marsed</u>	366 (370)

too jaws to west.

Clip Beach	1 P.M.	379 (383)
(28,780 - 400)		(28,799)

Run North.

Post in edge of maple timber
enter good maple timber
200 " " 366 (370)

with a few hemlocks

400 357 (361)

500 356 (360)

600 enter burnt timber 362 (366)

670 min. 34, (345)

700 more 392 (396)

800 faces south and 1650 west of S.E. in sec 32
large exposure of sand
emtorted and twisted.

No original bedding could be
made out, but in general
the planes of foliation had
strike N. 73° W. dip ~~80°~~ N. 15° E. 80°

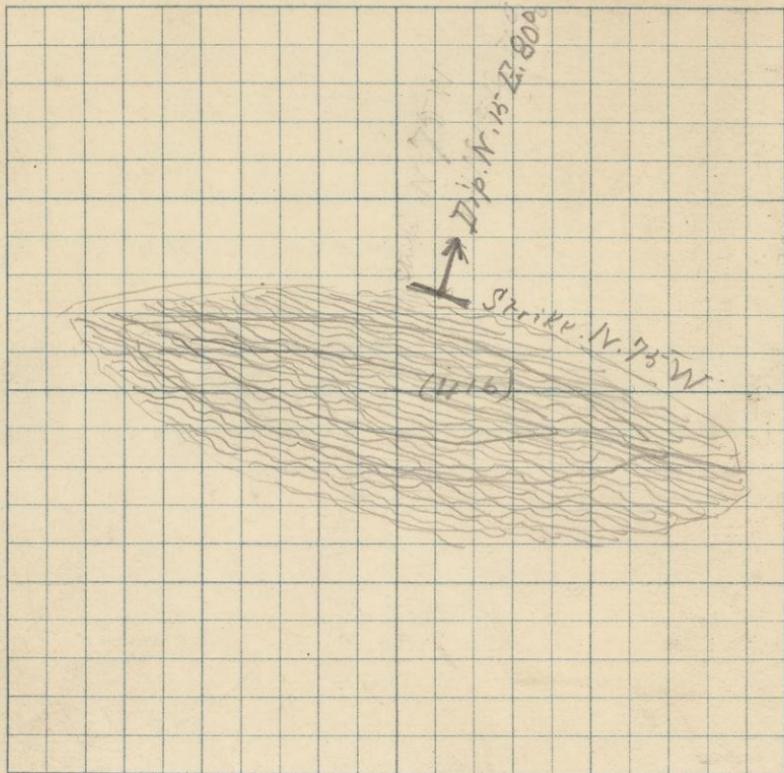
60

Part

S. 32

T. 44

R. 87



Map of Outcrop. Section 220.

800 paces N. 165° W. of S. E. Cor. 32. 44. 31.

Scale, small square = 10 ft.

elevation (416) 412

situated on the top of a Bluff
rising almost in the direction of
its foliation

21. taken from last pit. 800 feet
North and 1530 feet west of B.E. cr
See 32. T44. R31. Ele (390) 386
900 381 (385)

Many test pits in vicinity

1074 388 (392)

center turned, Bluff country

1100. Bluff. rising E. W 302 (406)

1157 376 (370)

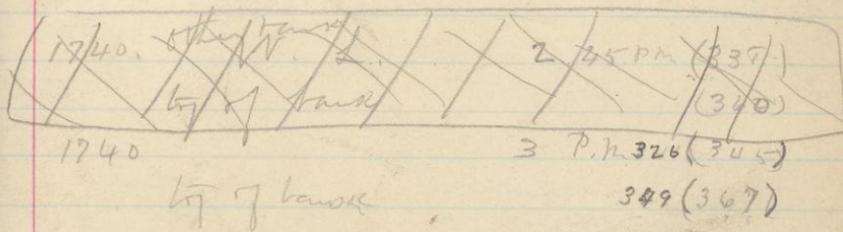
1256 max. 385 (379)

1300 376 (370)

1300 351 (353)

1200 bank of Michigan 334 (338)

water level 2.5 P.M. 326 (330)



62

S. 29 T. 44 R. 37

A hand-drawn map on graph paper showing a coastal or riverine area. The map includes several numbered locations and a winding path. The locations are labeled as follows:

- 366 (top left)
- 374 (top center)
- 369 (top right)
- 363 (middle left)
- 360 (middle center)
- 352 (middle right)
- 341 (bottom left)
- 352 (bottom center)
- 349 (bottom right)
- W, L (bottom left)
- 348 (bottom center)
- 347 (bottom right)
- 371 (center, near a path)
- 360 (center, near a path)
- 362 (center, near a path)
- 360 (center, near a path)
- 355 (center, near a path)
- W, L (center, near a path)
- 360 (center, near a path)
- 345 (bottom right, near a path)
- 355 (bottom right, near a path)
- 340 (bottom right, near a path)

The map features a winding path or river that starts from the top left, goes down the left side, then turns right through the center, and finally turns left again towards the bottom right. There are also several small circles and dots scattered across the map, particularly in the lower half.

Run North in continuation
of line on preceding page

1872.

343 (340)

Wagon River (to crystalline
water) 339 (333)burns country wet poplar
and alder mangrowth

200 340 (343)

400 351 (365)

600 347 (366)

625 creek flowing WNW 353 (353)

and small open marsh

700 leave marsh 349 (364)

900 352 (362)

1100 a small open
marsh 341 (350)

1200 leave camp same

1400 352 (363)

1600 marsh 363 (370)

1630 369 (373T)

1700 363 (368)

1900 369 (373)

On B. M. 3.50 374 (378)

365 (378)
(28,815)

Marked (369)

2000 struck E & W line at $\frac{1}{2}$ stage
at Camp 1hr 10. 28.835

Camp Avenue 28.605.

~~64~~

Sec.	S.	T.	R.
348	29	44	31
372	(376)		
371	(375)		
348	(352)		
	Burned timber		
357	(353)		
358	(360)		
356	(360)		
343	(346)		
347	(340)		
337	(340)		
332	(340)		
338	(340)		
350	(352)		
348	(350)		
342	(344)		
349	(350)		

Run South from SW cn
of Sec 19.

Wednesday June 17.

Beach Marks

S.E. cr 19.	376.
E $\frac{1}{4}$ S. S. side 19	392.
S.E. cr 31	347.
E $\frac{1}{4}$ S. side 31	346.

7.15. Camp Anwoia	28,650.
No 10.	28,850

Ran South from N.E. cr Sec 30
2 miles thence $\frac{1}{4}$ mile west, to
E $\frac{1}{4}$ S. side of 31. thence 2 miles east
to E $\frac{1}{4}$ S side of 30. -

On P.M. - (28,839)		
(550 - 28,65)	372	(376) 7.45 AM
Marker	376	

100	max,	371 (373-)
200		348 (352)
400		351 (355)
500	wagon road (farm road.)	
600	lake to west	356 (360)
650	max	356. (368)
700	entr small mound	343 (346)

66

Sec
31

S. 32

T. 44

R. 31

347 348 (352)

348 349 (350)

349 350 (352)

350 351 (353)

351 352 (354)

352 353 (355)

353 354 (356)

354 355 (357)

355 356 (358)

356 357 (359)

357 358 (360)

358 359 (361)

359 360 (362)

360 361 (363)

361 362 (364)

362 363 (365)

363 364 (366)

364 365 (367)

365 366 (368)

366 367 (369)

367 368 (370)

368 369 (371)

369 370 (372)

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371 372 (374)

372 373 (375)

373 374 (376)

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601 602 (604)

602 603 (605)

603 604 (606)

604 605 (607)

605 606 (608)

606 607 (609)

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612 613 (615)

613 614 (616)

614 615 (617)

615 616 (618)

616 617 (619)

617 618 (620)

618 619 (621)

619 620 (62

700 max 347 (358)

720 enter small marsh
pond to east

900 in marsh. edge of 337 (340)
pond. Also W.L.

1000 struck quarter post

1040 leave marsh 337 (340)

1100 352 (353)

1200 min. 338 (340)

1300 cherry undergrowth 350 (352)

1300 348 (350)

1700 road to farm, 342 (344)
farm house. 140 feet
to east

1900 349 (350)

2000

170 349 (350)

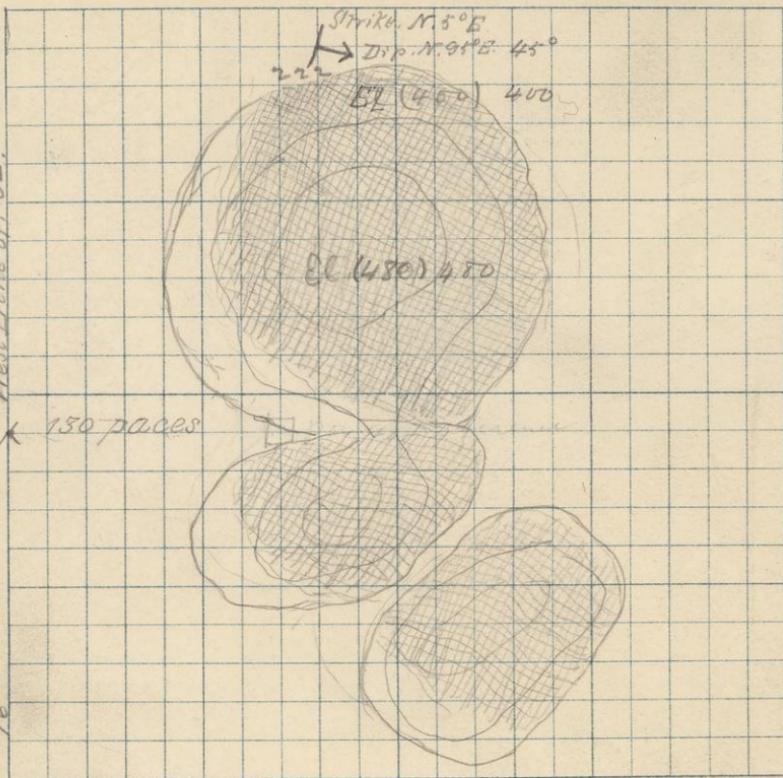
300 349 (350)

365 Wagon Road (Crystal Falls.)
enter foglie undergrowth

420. house of Michiganum 336 (346)
W.L. 8.45 327 (338)

460 South Side W.L. 327 (328)

by of house 9. AM 337 (338)
burned lumberwood
cherry undergrowth

West Line of 32.
26

Point of reference 762 paces North
~~of~~ and 1870 paces East of S.E. cor
 See 32, 44, 3).

Scale Small Square = 20 paces

600	349 (350)
800	350 (350)
950	360 (360)

High hill surrounded by outcrops 760 acres N. & 1870 acres E. of S.E. cor Sec 32, 44 - 31.

22, Strike N. 5° E. dip N. 95° E 43°-
er gabbro El. 400.

found all over the south
face of bluff. strike and dip
practically the same, up to the
top at an elevation of 400)
lowest one outcrop, at an
elev of (400) 401
hill appears to be a solid
mass of gabbro. outcrops
flattened 348

1238 10. A.M. 349 (348)

1300 enter hardwood
maple and elm

1300 359 (358)

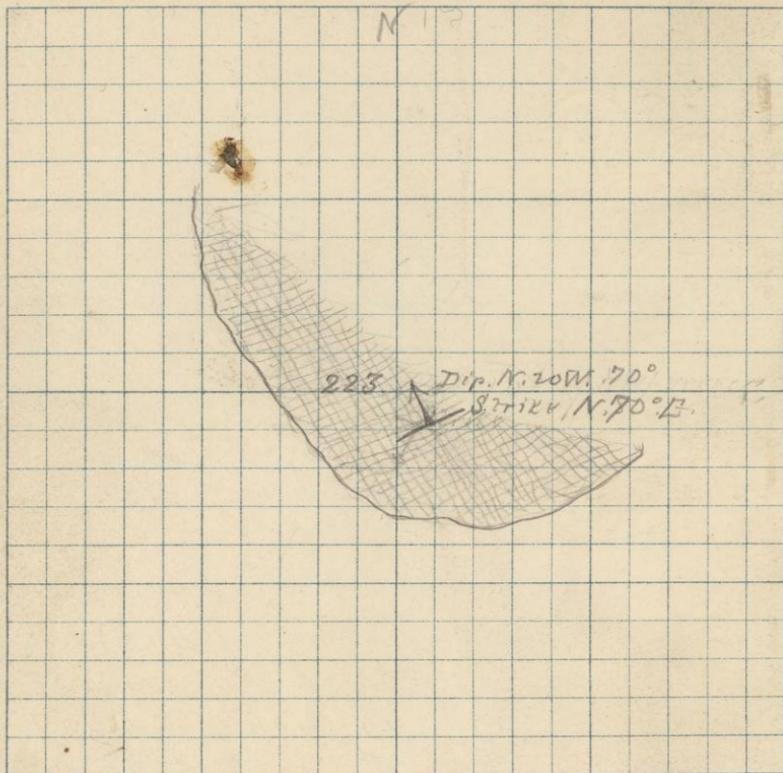
recent turings

1700 370 (368)
1725 min 352 (350)

S.

T.

R.



Outcrop - 50 paces North & 40 paces West
of S.E. Cor. 31. Scale, small sq = 10 paces

(216)

10, 50

1950 max

388 (386)

223

of 150 faces Nott, + 40 faces West
of S.E. on Sec 31. T. 44 R. 31
gabbro, large exposure on crest
of hill

as far as could be observed
the principal division of ridge
had strike N. 70° E.

Dip. N. 20° W 70° El. 372 (370)

Hill has the appearance of
an eruptive boss.

1950. creek flowing west
W.L. ^{10 ft. from}

342 (340)

2019. top of bank

357 (335)

2033. top of ridge

382 (380)

223

— small exposure of same,
10 faces East of line, no specimen taken
location. 1925 faces West and 1950 faces West of S.E. on
same as above Sec. 5. T. 43 R. 31

224

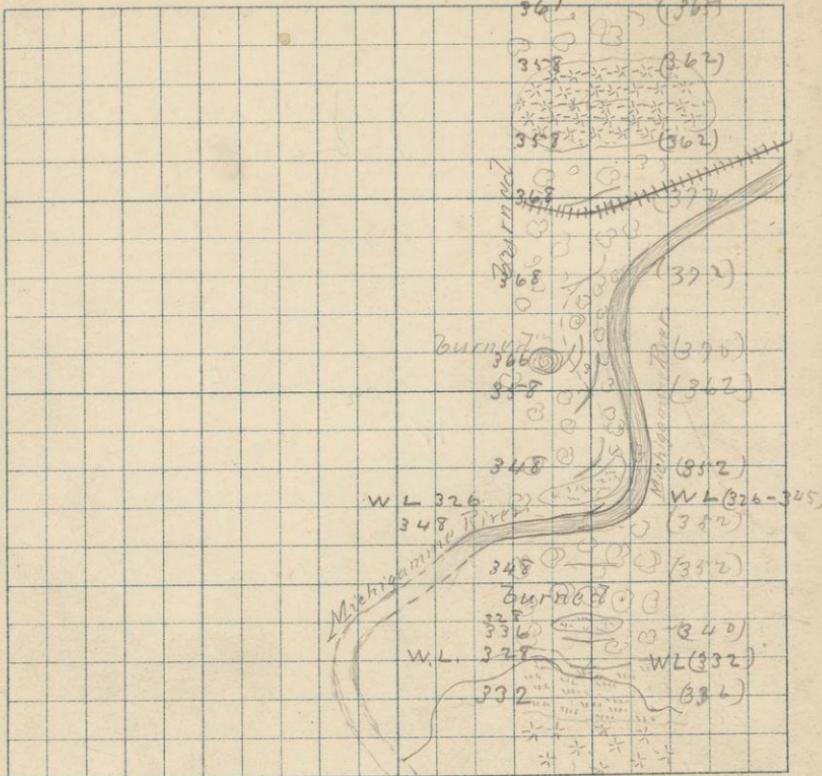
~~ridge. El. +~~ ~~(474)~~
~~west in almost continuous~~
~~exposure of fine grained gabbro~~
~~over~~

72

S. 31

T. 44

R. 31



creek should be 15 faces
south of line.

line turns out and west
visith at 1/4 post.

String line as near as could
be determined at 1920. No post
El at 1920 11.40 339 (337)
11.30. check on creek. (338)

224. 1700 faces Nots of S.E. on Sec. 6. Town 43
Range 31

Bluff of diarite 1200
as spifur. no structure indications.
500 faces East to 1/4 state.

12. M 372 (375)

(28.60 - 600) 12. M. (28,780)
west as 342 (346)

Run Nots from 1/4 state
2 stations. Hemlock timber
137. enter open swamp
200 332 (336)

225. creek flowing west
about 16 faces wide WL 828 (332)
enter burns timber west
rarely any growth
350 mpx 336 (340)

5.

T.

R.

300. open mud hole
400. " " " W.L. 828 (332)

548. hardwood & pine 348 (352)
turings

620 top of bank of Kickapoo 348 (352)

625 - W.L. 12.15. 326 (326)

640 N. Bank. W.L. 1. P.M. ³²⁶ (345)
top of bank. 346 (350)

700. enter marsh
700 348 (352)

enter turings with
cherry undergrowth

1100 (enter hardwood) 358 (362)
1100 maple & hemlock 366 (370)

ford and swamp
to pass west

1300 turings with cherry
undergrowth 368 (372)

1470. Wagon road. (Cryder Fall)

1500 368 (322)

1650 enter tamarack swamp 358 (362)

1820 leave 355 (362)

1850 enter turings. poplar & cherry undergrowth
marsh, 366

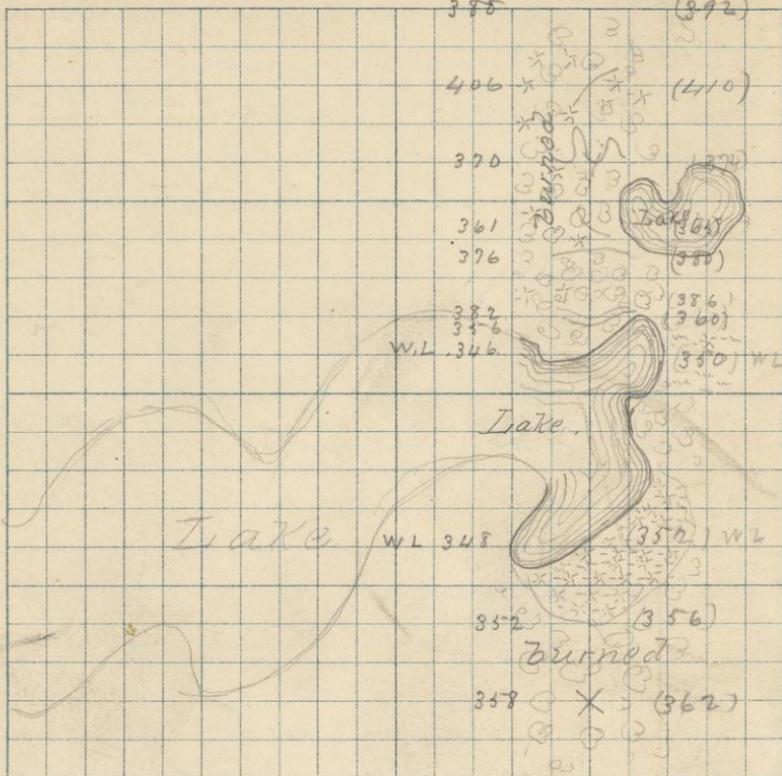
2000 361 (365)

76

S. 30

T. 44

R. 31



100	358 (362)
100	352 (356)
	entry to marsh swamp
610 - edge of lake W.L.	2. D.N. ³⁴⁷ (352)
1100 North edge of lake	2.20. ³⁴⁷ (350)
	skinned with thick, fat skin
	turning wholly or partially
1170 foot of bank	356 (360.)
1200	382 (376)
1371	376 (378)
1441 min	361 (365)
	lake - 75 fath. East
1400	370 (374)
1500 in turnings.	306 (410)
1994 shrubs E of W line	
On Bench. 2.50	388 (392)
(The marked	(28.830)
should be marked	392

as the ← was in the water
 the country was very wet and marshy
 and full of reeds.

S. 25 T. 44 R. 32

366	3 0 1 1 *	(370)
376	0 1 1 2	(370)
365	2 0 1 2	(370)
364	2 0 1 2	
385	2 0 1 2	(370)
375	2 0 1 2	(370)
383	2 0 1 2	(370)
382	2 0 1 2	(370)
386	2 0 1 2	(370)
394	2 0 1 2	(370)
364	2 0 1 2	(370)
373	2 0 1 2	(370)
348	2 0 1 2	(370)
W.L. 344.	W.L. (354)	
W.L. 344	W.L. (354)	
362	2 0 1 2	(370)
362	2 0 1 2	(370)
349	2 0 1 2	(370)
381	2 0 1 2	(370)

Run South from $N\frac{1}{4} 25^{\circ}, 44, 32$

Thursday June 17. 1891
 Run for today. South from $S\frac{1}{4}$
 Sec 24. R 44. R. 32.

B. M. $S\frac{1}{4}$ 24. 370.

$W\frac{1}{8}$ S side 24. 358.

$S\frac{1}{4}$ 36 —

$W\frac{1}{8}$ S side 36. 383.

Amurid.

At 10 8. AM (28,240)

Camp. 28,474

On B. M. $S\frac{1}{4}$ (24) .236

(600 - 28,45) 8.15 AM (27,705)

366 (370)

Turned hardwood and pine

150. map 376 (370)

Cedar and Balsam, small

200. turnt earth 366 (370)

400. cherry & elm underground 385 (390)

500. 375 (380)

530. map 383 (388)

700. 382 (388)

900. 386 (392)

1010. by of bank 394 (390)

1067. bottom 364 (370)

350	350	360
375	375	(360) (384)
	buried	
375	375	(385)
349	349	(360)
364	364	(394)
369	369	(380)
388	388	(473)
366	366	(399)
364	364	(376)
359	359	(372)
369	369	(372)
367	367	(378)
357	357	(365)
376	376	(390)
371	371	(375)
374	374	(371) WL (345)
375	375	(390)
359	359	(371)
357	357	(368)
374	374	(400)
384	384	(405)

Run South in continuation of
line on preceding page

1100 8,45 373 (380)

1200 enter cedar swamp 348 (353)

1300 enter Alder swamp

1381. River flowing East W.L. 9.1m 340 (354)

1444 opposite bank W.L. 9.74m ³⁴⁴ (354)

1600 enter slough w.r. 344 (354)

1647 leave

enter cedar swamp

1770 leave "

1720 max. 362 (376)

1750 min.

1840 top of bank 381 (390)

enter maple brush

1980 max. 379 (388)

125 min. 350 (360)

fall of hemlock cedar

200 fine cedar etc windfall 375 (385)

+ living

369. untraced larch balsam

+ hardwood

2400 375 (385)

1150 enter tamarack swamp ^{area of} 349 (360)

1600 max, cedar brush 364 (374)

157 enter swamp

52.

T.

R.

625 leave swamp. 369

700. Wagon road to (Cryderfall) (380)
enter hemlock cedar and
hardwood

700 max 388 (400)

900 hardwood (Mash + elm) predominant 366 (378)

1015. 364 (376)

1100 heavy maple trail at west

1115 min. 359 (372)

1200 369 (372)

1230 min. 359 (372)

1400? hemlock + maple 369 (380)

1440 min. 351 (365)

1500 376 (39.0)

1575 log of larch 371 (37.5)

1600 355 (370)

1613 creek flowing, Care WL 353 (36.0)

1644 log of larch 375 (39.0)

1700 359 (37.5)

1739. edge of larch swamp 352 (36.0)

1800 foot of hill

1888 log 10 45- 384 (400)

2230 stumps 8 yds. 11.13 388 (405)
50 feet West of 1/4 post

11. 20. A.M. 384 (403)
(28,663-)
Munck 388

375	3 3 3 3 3 3 3 3	(4407)
375	3 3 3 3 3 3 3 3	(4667)
	Burned area	
--	W. m. tree	(397)
387	3 3 3 3 3 3 3 3	(440)
406	3 3 3 3 3 3 3 3	(430) (428)
406	3 3 3 3 3 3 3 3	(420)
393	3 3 3 3 3 3 3 3	(445)
384	3 3 3 3 3 3 3 3	(395)
360	3 3 3 3 3 3 3 3	(370)
359	3 3 3 3 3 3 3 3	(368)
357	3 3 3 3 3 3 3 3	(365)
382	3 3 3 3 3 3 3 3	(379)
394	3 3 3 3 3 3 3 3	(404)
413	3 3 3 3 3 3 3 3	(418)
473	3 3 3 3 3 3 3 3	(427)

Run North from W $\frac{1}{2}$ past
S side of 36. T 44 R 32

300 feet west
on Buck. (28,620)

(400 - 28,620) 11.35 - 423 (427.1)

Maple timber

200	413	(418)
300	394	(400)
400	382	(389)

maple balsam

500	enter tamarack swamp	³⁵⁷ (365)
700	full of spruce	359 (368)
800	leaves swamp	360 (320)

900. hardwood + hemlock 384 (395)

1000 12. M. 393 (403)

maple timber

1200	406	(420)
1300	wind fall	
1400	wagon road (crystalline)	406 (430)
"	maple balsam	12.40. 406 (328)
1500		387 (410)
1600	enter wind fall and burning hazel underbrush	368 (392)
1700		375 (400)
1800		375 (400)
2000	enter small open marsh	³⁶⁴ (390)

359 (449)
 S 25 T. 44 R. 32

354	300	(400)
377	300	(412)
362	300	(416)
350	300	(391)
377	300	(418)
371	300	(416)
359	300	(394)
W.L. 350	300	W.L. (390)
372	300	(410)
347	300	(384)
366	300	(402)
W.L. 355	300	W.L. (374)
350	300	(376)
358	300	(370)
389	300	(417)
351	300	(374)
383	300	(410)
378	300	(410)

Run Antt on 1/10 line as
 continuation of line on
 preceding page

25 leave marsh
turns of windfall on
before

75. some maple & hemlock standing ³⁸³ (410)

200 383 (410)

225 - top of bank. same El. 383

300. sun 357 (385)

375 389 (415)

462 enter low swamp ³⁵⁰ (350)

600 ent low turnings cherry bush 349 (350) 32

788 1.20 WL 345 (354) 13

813. next bank 1.30 WL 345 (380)

900 leave into alder swamp

974 talus max 366 (402)

1020 max El same

1062 sun (turns ana) 347 (384)

1100 max (talus) 372 (410)

~~1141~~ creek flowing WL 350 (390)

15 ft wide 1.45

enter alder swamp

1242 leave

1300 (359) (398) 1

1349. max (371) (410)

cross 1st 20 ft to right to west
about 20 ft above low

5.

T.

R.

1400	runt alder way	350 (320)
1431	leave "	"
1493	mat	377 (415)
1510	runt away	
1550	cross crs! WL	350 (391)
1700		362 (405)
1751	enter clear burning	
1801		377 (422)
2130	enter alder and tan. way	2.20 ³⁵⁴ (400).
2115	struck E + W line 12 paces west of 1/2 pt.	
	On P.M. 2.25	354. (410)
	marked 958.	(28,639)
	At Camp 3 P.M.	
As 10.		28,620
Camp Arrived		<u>28,350</u> 1270

90

Sec
26

S. 25

T. 44 R. 32

3862	(390)
387	(398)
383	(386)
364	(365)
363	(352)
382	(370)
363	(362)
354	(350)
361	WL (336)
WL	
343	
347	(340)
377	(370)
382	(375)
369	(362)
382	(375)
359	(358)
387	(370)
Burnt	
377	(370)
367	(360)

Run South from N.W. cor. 25.

Town 44 Range 32

Friday June 19, 1971
 Run for today. South from
 South east on Sec 23. T. 44 R. (31)

Annisia to 10		28592
Camp Annis	6.35-	28.37

On 8. m. 7. AM. (28.575)
 (330 - 28.40 386 (390)

maple buck and pine + cedar

200.		387 (390)
300	enter firs and windfalls	383 (385)
400		364 (365)
475	Norway + white pine rather light.	370 (370)
500	shrub 1/2 slate. 30 pines E of limestone	
600	min. enter windfalls	353 (352)
640	enter pine and mixed hardwood	
700		382 (388)
820	now of hill	365 (362)
750	bottom "	354 (350)
	trich and cherry undergrowth	
950	top of river bank	361 (355)
980	Deer river flowing East	7.45 343 (336)
1000	down bank, WL	8.45 343 (336)
	shrub 1/2 pine	

92

Sec.
35 *

S. 36

T. 44

R. 32

383	CD	(376)
377	CD	(370)
372	CD	(365)
392	CD	(375)
367	CD	(370)
382	CD	(375)
379	CD	(372)
352	CD	(343)
347	CD	(340)
367	CD	(360)
383	CD	(376)
392	CD	(385)
402	CD	(395)
407	CD	(400)

Run South on section line in
continuation of line on preceding page

enter tamarack swamp

1172. leave " 347 (340)

enter balsam, cedar + hardwood

1236. top of bank. enter windfall hemlock 377 (326)

1377. max. 382 (375)

1400. min. front fence out 369 (362)

1450. max. front fence out 382 (325)

1500. min. hardwood 359 (352)

1600. 387 (380)

1738. enter good hardwood (maple)

1780. 377 (320)

2000. stream E of west line at 367 (360)

comes first 8.35

100. faith wood fall 383 (371)

300. hemlock mixed and maple 377 (370)

400. min. maple poor. 372 (365)

425. max. 382 (375)

495. min. 367 (360)

570. wagon road (crysies falls) 382 (375)

east and west windfall

enter cedar, and ^{hemlock} hardwood

680. top of bank a few large 379 (372)

white pine

773. enter tamarack swamp 352 (345)

958. 347 (340)

94

S. 35

T.

44

R.

32

400	X	(400)
403	X	(410)
401	X	(418)
384	X	(391)
402	X	(408)
406	X	(410)
374	X	(380)
394	X	(400)
410	X	(415)
415	X	(420)
430	X	(425)
430	X	(435)
408	X	(412)
406	X	(410)
409	X	(416)

Run Knot from $W\frac{1}{8}$ mts
South side of Sec 35-

995 has 1/4 stake.

change to cedar swamp

1200	in .	347 (340)
1340	leave swamp enti	347 (340)
1400	sw. Lemmon, cedar, tamarac, talus	367 (360)
1500	now	383 (376)
1600		392 (385)
1700		402 (395)
2000	strike E. W. line at we come	
	On Bench	9. 45.
		407 (400)
		(28. 464)

Marked 411

800	face W.	
	On Bench	10. A.M
(700- 28. 26)		407 (411)
		(28. 568)

Marked (411)

200	cedar and tamarac away	
240	"	406 (410)
240	leave	
	entire hardwood hemlock, cedar	
300	some very good maple	408 (412)
390	now	430 (433)
400		430 (435)
700		418 (420)
800	top of bank	410 (413)

S. 26

T.

44

R.

32

225 (410)

376 100 (420)

377 145 (435)

378 245 (445)

379 245 (455)

380 245 (465)

381 245 (475)

382 245 (485)

383 245 (495)

384 245 (505)

385 245 (515)

386 245 (525)

387 245 (535)

388 245 (545)

389 245 (555)

390 245 (565)

391 245 (575)

392 245 (585)

393 245 (595)

394 245 (605)

395 245 (615)

396 245 (625)

397 245 (635)

398 245 (645)

399 245 (655)

400 245 (665)

401 245 (675)

402 245 (685)

403 245 (695)

404 245 (705)

405 245 (715)

406 245 (725)

407 245 (735)

408 245 (745)

409 245 (755)

410 245 (765)

411 245 (775)

412 245 (785)

413 245 (795)

414 245 (805)

415 245 (815)

416 245 (825)

417 245 (835)

418 245 (845)

419 245 (855)

420 245 (865)

421 245 (875)

422 245 (885)

423 245 (895)

424 245 (905)

425 245 (915)

426 245 (925)

427 245 (935)

428 245 (945)

429 245 (955)

430 245 (965)

431 245 (985)

432 245 (995)

433 245 (1005)

Run North in continuation
of line on preceding page

865 enter talm. cedar 394 (400)
swamp

1000 cedar + tamarack swamp 374 (380)

1020 enter rising ground

1000 hemlock, cedar, maple 406 (410)

1233 402 (408)

1300 10145 384 (390)

1320 enter tamarack swamp 378 (385)

1420 detour

enter hemlock pine and
hardwood

1420 401 (407)

1575 good hardwood, mostly maple (410).
with a few pine & hemlock

1760 wagon road (Eggers falls) 403 (410)
swing to the right 50 paces from bridge
road

2000 good maple 400 (405)

85 enter thick talus with
a few large Norway & white
pine

176 392 (400)

214 enter open talus swamp 382 (360)

270 leaves " "

360 enter bogland undergrowth 370 (378)

370 382 (390)

5.

T.

R.

At Camp
15.11.28.390 4.10. m
Camp Amaro 28.280

500		389 (397)
550	mi	386 (365)
600	raspberry in dugout	376 (385-)
700	along edge of bar	371 (370)
900		11. 52 372 (352)
972	enter balsam cedar	378 (387)
1000	+ pine	370 (387)
1095	deer river WL	12. M. 344 (354)
1150	Antelope	WL 12. 50. 344 (370)
	enter cedar, hemlock and mixed hemlock	
1300	turns w. to leaywood	373 (400)
1350	mas	383 (400)
1400	mi	368 (393)
1500	enter unburned balsam	385 (412)
	and hemlock. 1. P. M	
1600	same	1. 15. 385 (410)
1630	hardwood cedar	385 (410)
1720	and hemlock	391 (425)
1770	me	371 (405)
1820	mas	386 (420)
1875	enter balsam	376 (410)
	mostly cedar the tree sways	
2018	stems Eg. W. line 17 steps W. of 1/2 mile	
	On B. M 1. 35.	375 (410)
		(28. 571)
	Marshall.	379

