



LIBRARIES

UNIVERSITY OF WISCONSIN-MADISON

Florence, Wis.: [specimens] 41765-41852. No. 344 Summer 1901

Merrill, Jason L.; Bayley, William Shirley, 1861-1943
[s.l.]: [s.n.], Summer 1901

<https://digital.library.wisc.edu/1711.dl/QGWGMV5ZCD2I48V>

<http://rightsstatements.org/vocab/InC/1.0/>

For information on re-use see:

<http://digital.library.wisc.edu/1711.dl/Copyright>

The libraries provide public access to a wide range of material, including online exhibits, digitized collections, archival finding aids, our catalog, online articles, and a growing range of materials in many media.

When possible, we provide rights information in catalog records, finding aids, and other metadata that accompanies collections or items. However, it is always the user's obligation to evaluate copyright and rights issues in light of their own use.

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 x 2½ x ½ inches will be allowed, but in all other cases *large-sized specimens*, trimmed to a size of 3 x 4 x 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.

3454

U.S.
GEOLOGICAL SURVEY
FIELD BOOK #344

W.S. Bayley
FLORENCE DISTRICT

1901

Secs. to be put on maps
p. 27, 29.

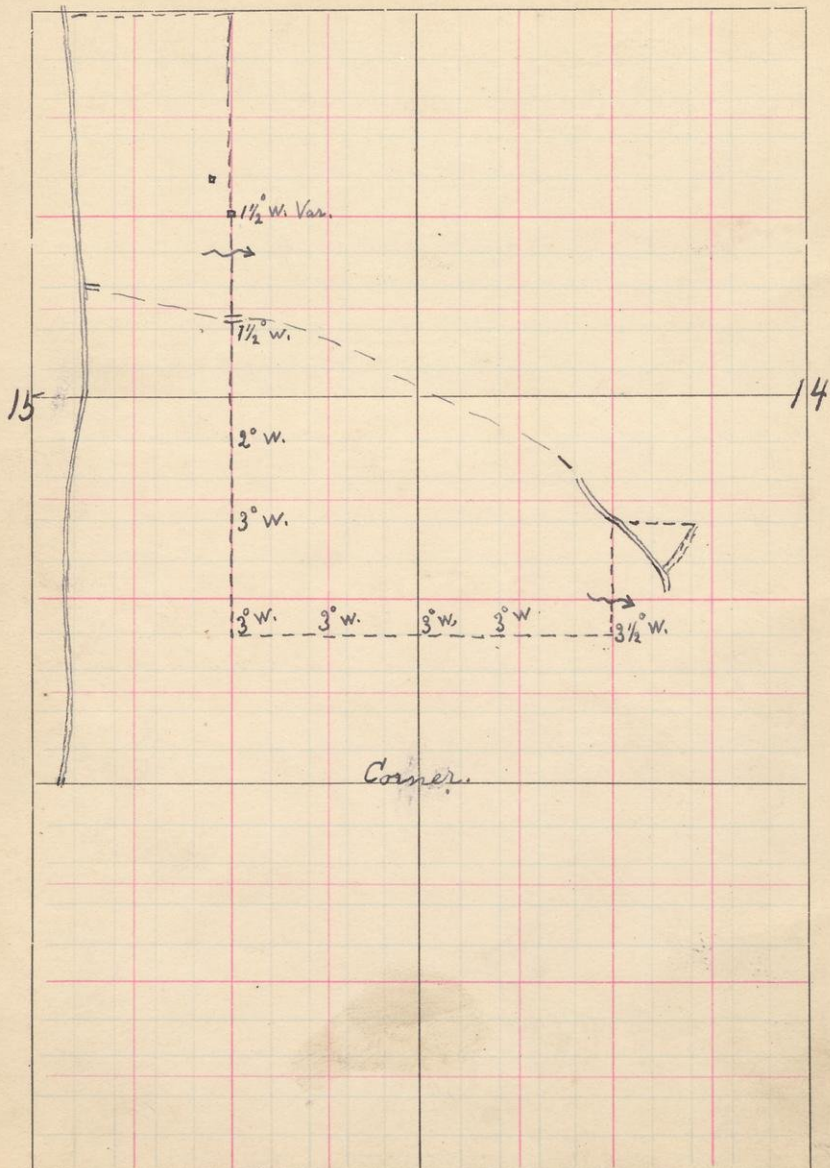
Jason L. Merrill

Asst to Dr. W. S. Bayley.

Summer 1901.

Fluence Wis

Specimen 41765 - 41852



Sections 14-15, 39-18. Wm

No rocks were found here, the country is covered with a drift of sand and coarse gravel.

3

S.

T.

R.

2° E.

T: 40. N.

35

 $\frac{1}{4}$ S

36

201

202

203

205

206

204

*? Lake

streaming
w/8

Shed

217

216

218

215

214

T: 39. N.

2

6-747

R. 17 E

1

201 Specimen of numerous boulders scattered
41765 all along from 100 to 250 paces south
of the section line of 36 & 1. Couldn't
see any ledge.

202 Sect 36, 40-17, 325 paces south, 500 paces ✓
41766 west of center 36.
A round topped hill; outcrop all over it.
Hill rises about 25 ft from surrounding
country. Hill is oval and extends 25' west
of north for about 120 paces.

203 Sect 36, 40-17. 680 paces south, 500 paces ✓
41767 west of center 36.
A small outcrop of a massive igneous rock
judged by the number, shape & arrangement
of the numerous fragments here. It is an
elevated position also.

204 Sect 36, 40-17. 775 paces south, 440 paces ✓
41768 east of center 36. A round knob of
diabase as seen by the weathering.

205 Sect 36, 40-17. 60 paces 70° east of north ✓
41769 of No 204. A diabase knob extending
northward about 150 paces.

5

S. 35

T.

40. N.

R. 17. E.

T. 40. N.
1/4 S.

1/4 S.

35 Gates.

223
"
224
225

227

228

L

R. 17. E.

206 Midway between Nos 204 & 205. ✓
 41770 An outcrop of a fine grained igneous massive rock different to the eye from Nos 204 & 205. Couldnt see any contacts nor relations.

207, 208, 209, 210, 211, 212, 213
 41771 These numbers are of specimens ^{the same} ~~such~~ as Mr Bayley located.

214. Sect 2, 39-17. 675 paces south, 250 paces ✓
 41772 west of cor 35-36, 1-2. An oval outcrop on a hill at the edge of a high land bordering a swamp. It extends northward about 100 paces by 50 paces wide. Massive igneous rock.

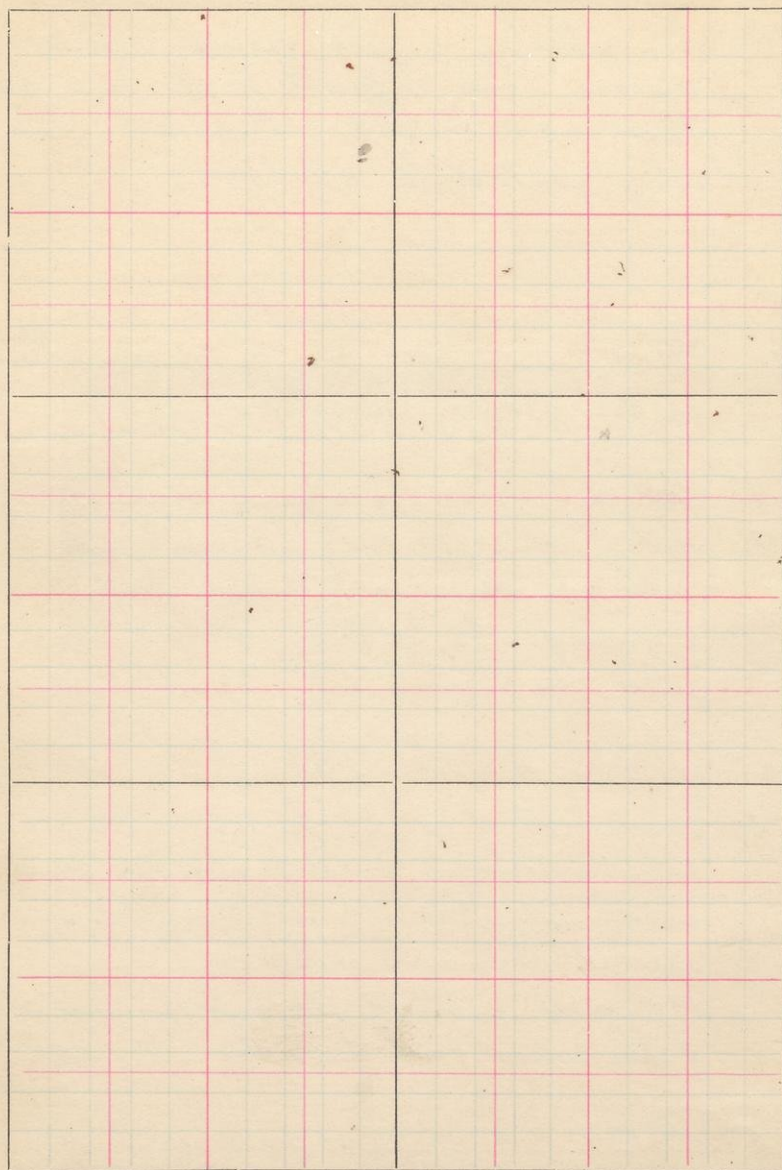
215 Sect 2, 39-17. 600 paces south, 200 ✓
 41773 paces west of cor 35-36, 1-2. A low slightly rounded outcrop about 15 paces across it. Like all above rocks was cracked but not schistose, 100 paces north of this outcrop is another of the same kind of rock.

216 Sect 2, 39-17. 200 paces south, 470 paces ✓
 41774 west of cor 36-35, 1-2. A small outcrop

S.

T.

R.



about 10 paces across. It is on a very high ground & seems to be an outcrop of the rock forming the high ground. An igneous rock; not schistose.

217 Sect 2, 39-17. 165 paces south, 500 paces
41475 west of cor 35-36, 1-2. A greenish gray slightly schistose outcrop. A knob, rounded at the north and sloping underground at south. Not many cracks in the rock.

218 Sect 2, 39-17. 250 paces south, 300 ✓
41476 paces west of cor 35-36, 1-2. A rather schistose, dark, coarse grained, igneous rock. Large outcrop extending 100 paces N.W. It formed a slight elevation on a high land.

219 Sect 35, 40-17. 80 paces north, 700
41477 paces west of N.E. cor 35. A knob of dark heavy gabbro in a level country; about 8 ft high.

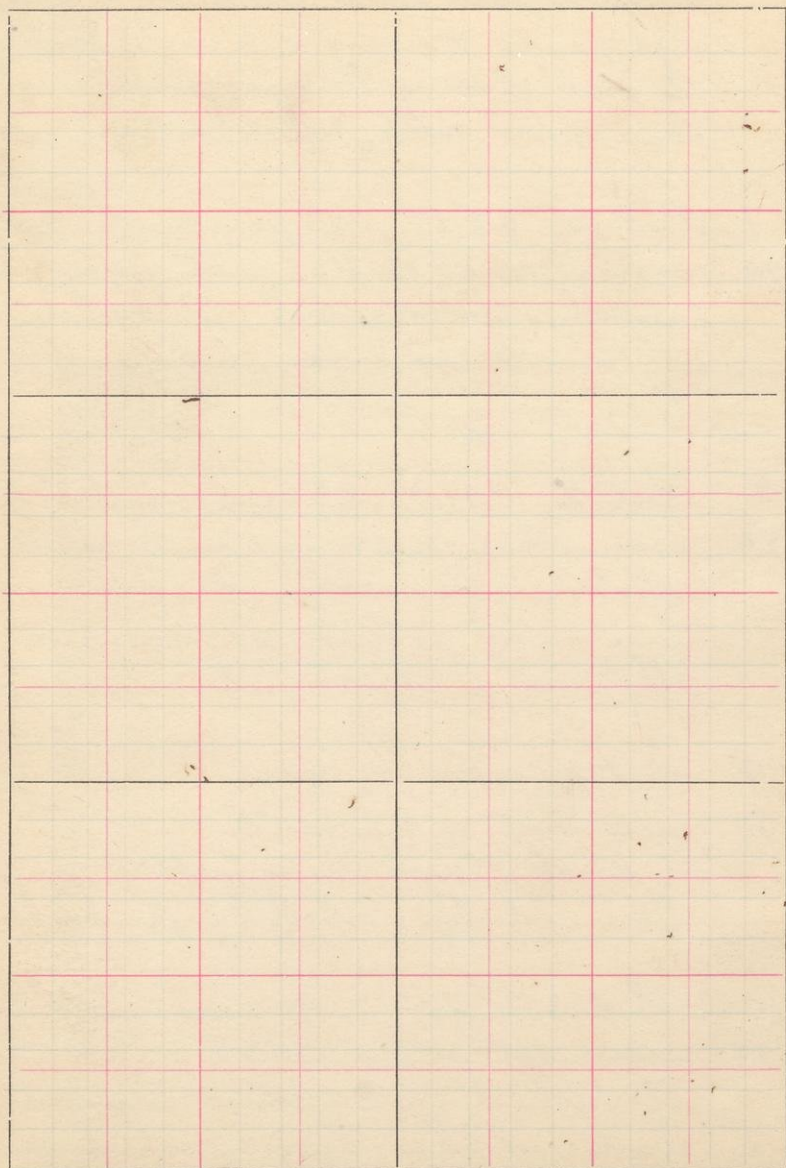
220 Sect 35, 40-17. 90 paces north, 750
41478 paces west of N.E. cor 35. A hill of fine grained igneous rock about 100 paces across; much cracked.

9

S.

T.

R.



- 221 41779 Sect 35. 40-17. 150 paces south. 50 paces west of 1/4 S. 26-35. A very large hill, 30 ft high, 50 paces wide (E-W) & 100 paces long (N-S). A fine grained massive rock, much cracked.
- 222 41780 Sect 35. 40-17. 360 paces south, 40 paces east of 1/4 S. 26-35. An irregular rough, sharp, outcrop of fine-grained massive rock.
- 223 41781 Sect 35. 40-17. 260 paces south, 160 paces west of center 35. An irregular outcrop 50 paces long (N-S). of a dark, coarse-grained, schistose rock. Dip 80° East of north. Strike of schistosity 55° west of north. So fissile that can be split into 1/2 inch flakes.
- 224 41782 Sect 35. 40-17. 375 paces south, 175 paces west of center 35. A small sharp outcrop of dark, fine grained rock. Looks like actinolite-schist. It has large cracks.
- 225 41783 Sect 35. 40-17. 450 paces south, 150 paces west of center 35. Large, irregular outcrop of an igneous rock. Extends N-S about 100 paces. Has a vein like red sample.

11

S. 34

T.

40. N.

R. 17. E.

N.E. Corner 34.

229

 $\frac{1}{8} S$

34

 $\frac{1}{4} S$

36

Sect 34

226

41784

Sect 35, 40-17. Somewhere a little north of No 227. A high irregular outcrop.

227

41785

Sect 35, 40-17, 50 paces north, 200 paces west of $\frac{1}{4}$ S. 35-2. A large, irregular outcrop with numerous parallel cracks. It looks much like an actinolite schist.

228

41786

Sect 2, 39-17, 140 paces south of $\frac{1}{4}$ S. 35-2. Here is a large hill but no outcrop. Where the blow over saw the ledge.

It looked much like a sedimentary rock, having differently colored layers and parallel cracks but wavy. Strike 80° west of north. Dip 80° south.

229

41787

Sect 34, 40-17, 100 paces south of N.E. corner 34. A graphite slate test-pit.

125 paces south of N.E. cor 34 = graphite slate

162 " " " " = " "

200 " " " " = " "

230 " " " " = " "

370 " " " " = " "

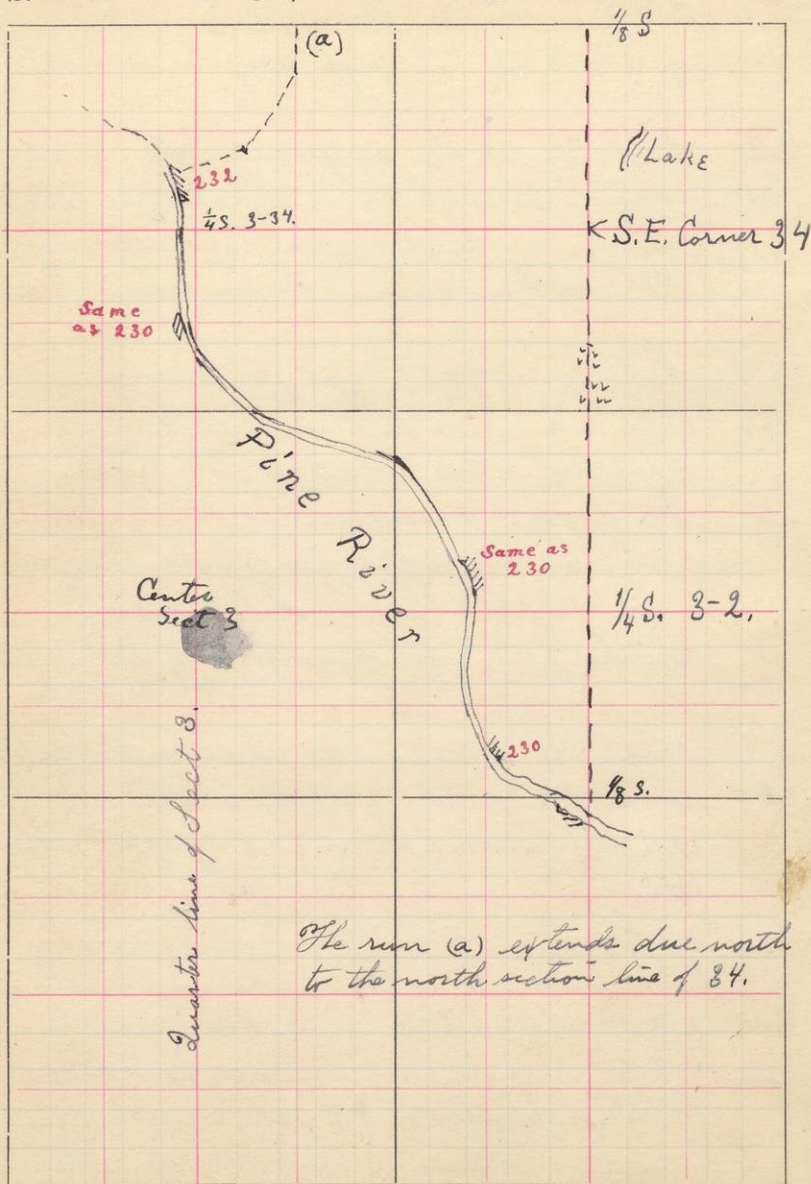
485 " " " " = hornblende schist.

This hornblende schist was much cracked and iron stained, couldn't see the ledge but was numerous irregular fragments.

13

S. 3. T. 39. N.

R. 17. E.



The run (a) extends due north to the north section line of 34.

230

41788

Sect 3. 39-17. 380 paces south, 225 paces west of $\frac{1}{4}$ S. 3-2. A fine grained, light, very schistose, massive rock. Much cracked. The outcrop extends 105 paces along the bank. Has veins of quartz in it. Strike of bedding or colored layers is 60° west of north. Dip 80° S.E. These lines are wavy and folded.

Sect 3. 39-17. 550 paces south, 50 paces west of $\frac{1}{4}$ S. 3-2. An outcrop along the west side of the river. Looked like a schistose (very) greenstone or a slate. It is probably like 230.

Sect 3. 39-17. 100 paces north, 275 paces west of $\frac{1}{4}$ S. 3-2. An outcrop same as 230 along this river here.

41789

Specimen 231 is probably a boulder on top of this ledge.

232

41790

Sect 3. 39-17. 75 paces north, 50 paces west of $\frac{1}{4}$ S. 3-34. An outcrop extending about 100 paces up the river. Formed a bank about 15 ft high. A light colored very schistose or fissile rock. Strike of what appears to be bedding $25-40^\circ$ west of north. Nearly vertical.

15

S. 24 T. 40. N. R. 17. E.

All rock is quartzite.
on this map.

Center 24

Center 19

T. 40. N.

Strike 75° W of N.
Dip 80° E of N.

Center 25

G-747

R. 17. E.

R. 18. E.

Center 30

233

41791

Lect 35. 40-17. 1850 paces north, 700 paces west of S.E. corner 35.

A ledge forming a hill in a road about 40 paces wide.

Rock seemed to show stratification, dark & light bands

Strike 45° west of north.

Dip 85° east of south.

It is cut by quartz veins.

234

41792

Section 6. 39-17. 450 paces east. 40 paces south of N.W. cor 6.

A slate hill about 100 ft high.

The hill is all slate, black, sometimes garnetiferous. It has veins of chert. Could not see bedding but cleavage is very distinct.

Strike 70° west of north.

Dip about 80° east of north.

235

41793

Lect 32. 40-18. 200 paces east, 20 paces north of cor 31-32, 5-6. A test-pit,

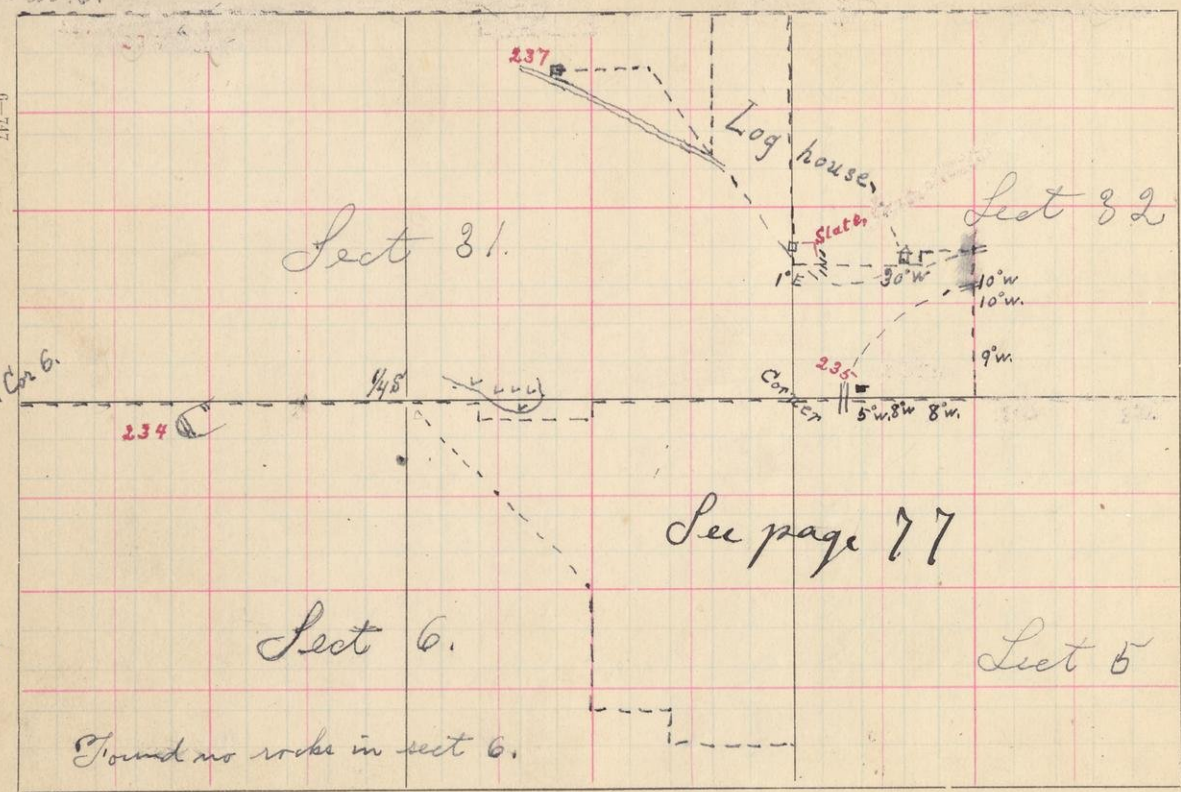
rock looks like red sandstone. It has fine quartz veins.

17
S.
T.
40 N.
R.
18 E.

T. 40 N.

N.W. Cor 6.

T. 39 N.



The N.W., N.W. "forty" of section 6 has a fraction of 131 paces additional.

Log house Sect 32. 40-18. ✓

360 paces north. 300 paces east of Cor 31-32, 5-6.

236 Sect 32. 40-18. 30 paces south from 41794 south door of log house. A test-pit of ferruginous slate.

A few pits near the log house are located in the original note book: but not thought necessary to locate many.

Sect 32. 40-18. 345 paces north. 45 paces east of cor 31-32, 5-6. Test pit of lean ore and chert slate. Strike of schistosity 75° west of north. Slip vertical.

287 Sect 31. ⁴⁰⁻¹⁸ 860 paces north, 650 paces east of cor 6-5, 31-32. A large test pit beside road. slate and ore. ✓

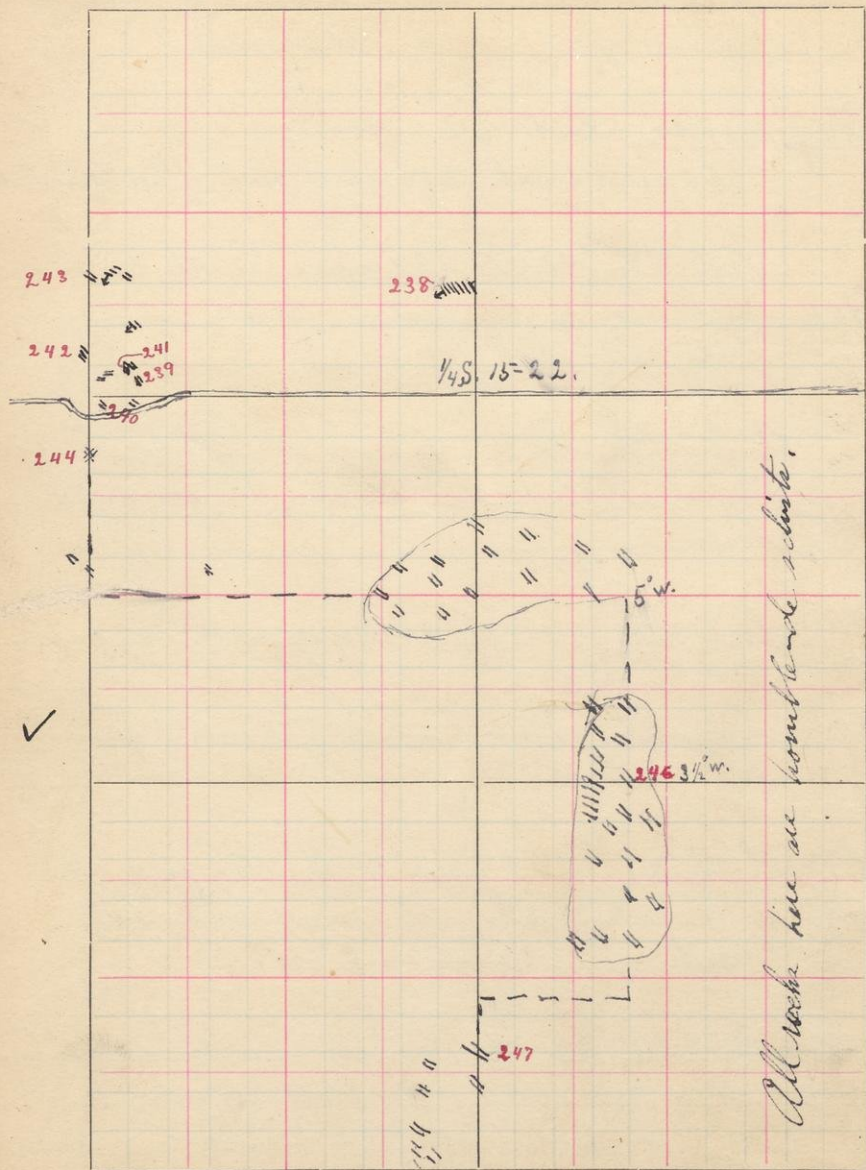
238 Sect 15. 39-17. 140 paces north, 50 paces west of 41796. A bluff extending (E-W) about 40 paces. Beautiful hornblende crystals are seen on the white weathered surface. Garnets are found.

19

S. 22

T. 39. N.

R. 17. E.



2

Strike of schistosity about 60° west of north.
 Dip 50° south west.

239

41797

Loc 15. 39-17. 440 paces west, 20 paces north
 of $\frac{1}{4}$ S. 15-22. A smooth ledge outcrop of
 hornblende-schist. It is the east end
 of a large elevation. It is 20 paces (N-S) and (E-W)

240

41798

Loc 22. 39-17. 485 paces west, 15 paces
 south of $\frac{1}{4}$ S. 15-22. A schistose rock in the
 elevation in the road bend.

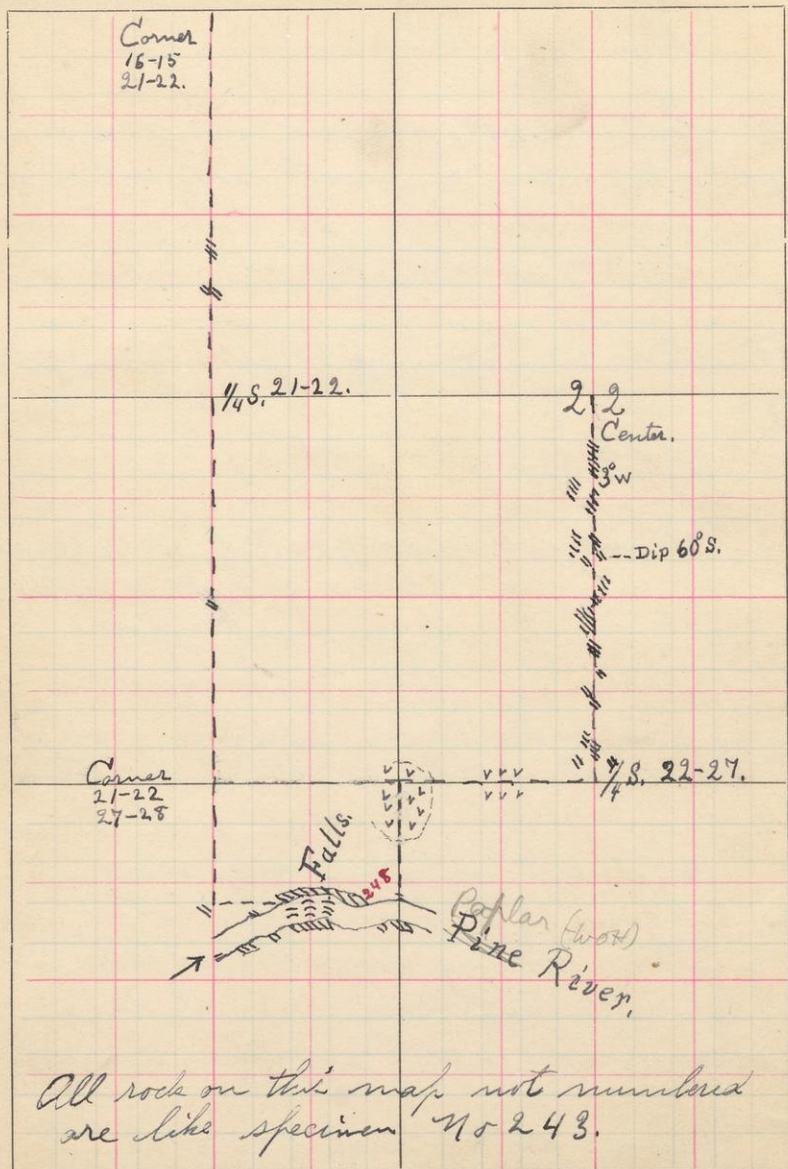
485 paces west, 25 paces north of $\frac{1}{4}$ S. 15-22.

A flat ledge that seems to show bedding.
 Across the ledge are many parallel wavy
 layers and lines. White layers, and
 hornblende layers. It shows quartz lenses
 with long tails parallel to the layers.

475 paces west, 25 paces north of $\frac{1}{4}$ S. 15-22.
 Different rock from the above. Don't seem
 to be composed of layers but streaks can be
 seen in it extending (E-W). A dark massive
 rock with hornblende crystals.

50 paces west. 200 south of $\frac{1}{4}$ S. 15-22. The same
 hornblende schist. Strike 40° west of north.
 Dip 50° south west.

21 S. 22 T. 39. N. R. 17. E



All rock on this map not numbered
are like specimen No 243.

241 Sect 15. 39-17. 450 paces west, 45 paces north
41799 of $\frac{1}{4}$ S. 15-22. A smooth ledge, not very
schistose, seems to be a different rock than
the preceding.

242 Sect 15. 39-17. 515 paces west, 55 paces north of
41806 $\frac{1}{4}$ S. 15-22. A nearly perpendicular cliff, 12 ft
high and 20 paces (N-S). Ledge composed of
dark & light layers. Strike about (E-W)
Dip of layers (60° W)? probably 60° south.

445 paces west, 100 paces north of $\frac{1}{4}$ S. 15-22.
Ledge 10 paces long (N-S). Composed of dark &
light layers. Strike 70° W of N. Dip 68° S.

29 paces 25° E of S from above rock is a ledge
of same rock. In it is a quartz lens inside
of which is a lens 15 by 3 inches of a very
dark rock composed mostly of hornblende crystals.

Page 19 & 21 All unnumbered rocks are
the hornblende schists described.

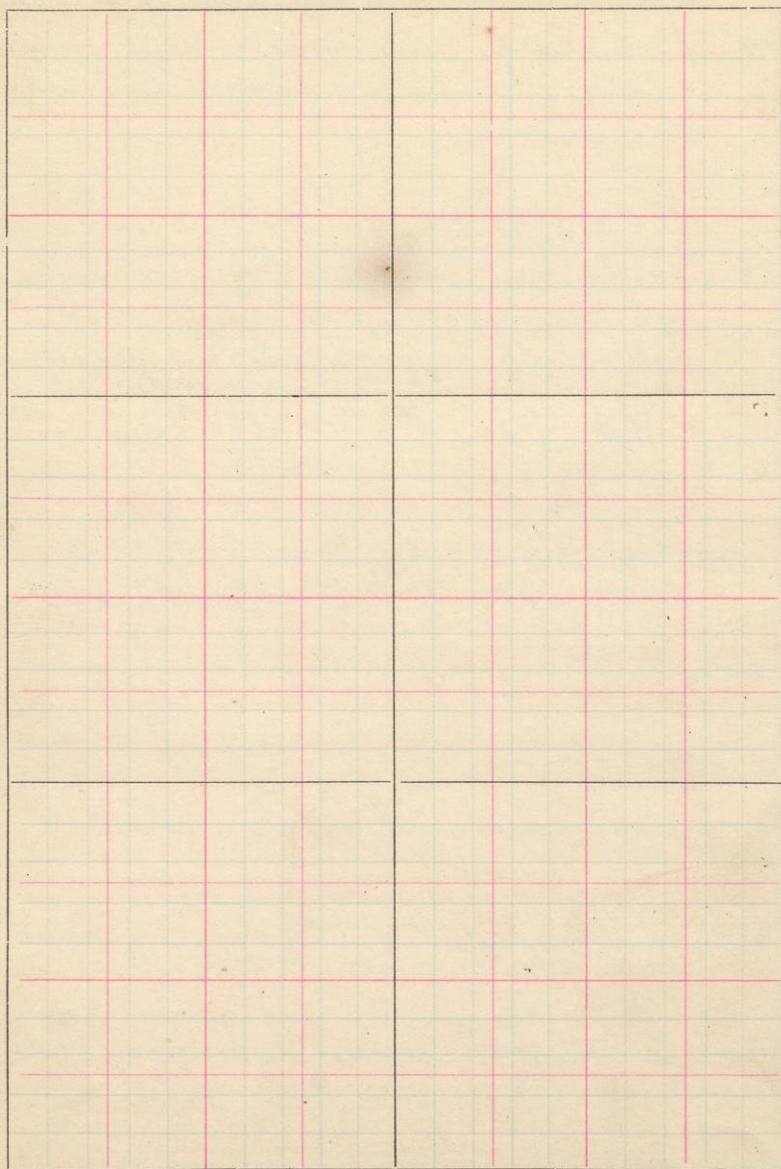
243 Sect 15. 39-17. 500 paces W. 155 paces N of $\frac{1}{4}$ S. 15-22
41801 A small irregular outcrop. Spheroidal
weathering is seen. Dark & light layers.
Strike 40° W of N. Dip 80° N.E.

23

S.

T.

R.



475 paces W. 160 paces N of $\frac{1}{4}$ S. 15-22.

A ledge extending 30 paces N.E.

Composed of dark & light layers, hornblende crystals, & greenish-gray colored crystals of same size as the hornblende.

Spheroidal weathering is seen. Strike 60° W of N.

Dip about 60° S.W.

244 Lect 22. 39-17. 500 paces W. 72 paces S of $\frac{1}{4}$ S. 15-22. ✓

41802 Small irregular outcrop of a massive rock.

530 paces W. 200 paces S of $\frac{1}{4}$ S. 15-22. ✓

Outcrop of heavy dark hornblende rock.

On east side of large hill.

500 paces W. 235 paces S of $\frac{1}{4}$ S. 15-22. ✓

Extends 15 paces S. Same hornblende schist.

245 No specimen of this number. ✓

41803

246 Lect 20. 39-17. 470 paces south, 200 paces east of $\frac{1}{4}$ S. 15-22. A large outcrop on a high land. A variety of the hornblende schist. ✓

41804

247. Lect 20. 39-17. 850 paces south of $\frac{1}{4}$ S. 15-22. ✓

41805 A variety of the hornblende schist.

26

S. 14 & 23 T.

39. N. R. 17. E.

Corner
14-15
22-23

Road

Conglomerate

boulders

 $\frac{1}{4}$ S.
14-23.

249 *

250 //

251 ⊕

253 //

252 //

Center 23

 $\frac{1}{4}$ S.
22-23.

248

41806

Sect 27. 39-17. 600 paces west, 300 paces south of 1/4 Sec 22-27. Outcrop on bank of river about 100 paces east of the falls. It extends up to the falls & is of the same kind of rock. A very schistose, much cracked rock. It has dark and light layers, shows hornblende crystals. Strike 20° W of N. Dip 65° S.W. Has a 15 inch vein of quartz in it of same strike and dip.

At the Falls, there are many veins of quartz from an inch to a foot thick. These veins thin out into tails. The falls seems to be due to the number of quartz veins at this place.

249

41807

Sect 23. 39-17. 430 paces south, 200 paces east of cor 14-15, 22-23. Small irregular outcrop of a quartzite. Rock is very schistose. Couldnt see any bedding.

250

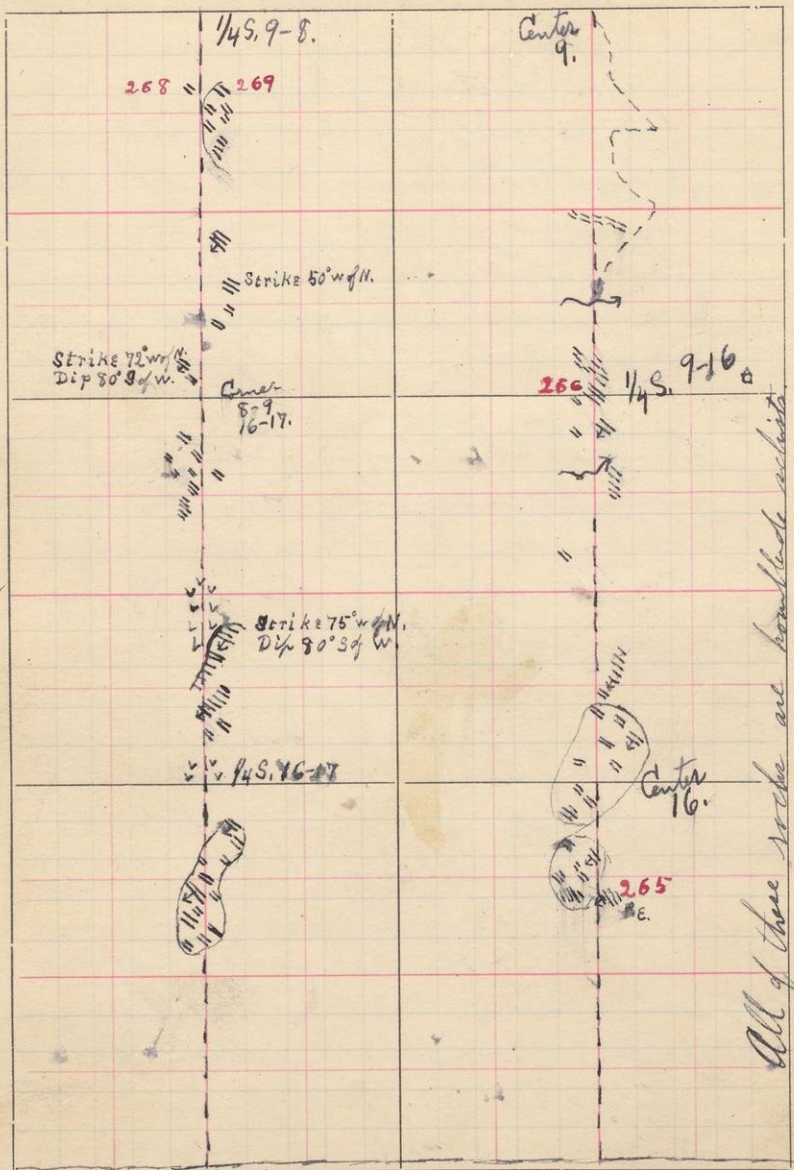
41808

Sect 23. 39-17. 500 paces south, 200 paces east of Cor 14-15, 22-23. High irregular outcrop of hornblende schist like that of sect 22. 39-17. Looks much like a very large boulder.

27 S.

T. 39. N

R. 17. E.



All of these rocks are hornblende schists

251
41809

Sect 23. 39-17. 900 paces south, 200 paces east of cor 14-15, 22-23. A ^{shallow} ~~wide~~ wide valley filled completely with irregular broken stones. All of these are conglomeratic. Couldn't see any ledge.

252
41810

Sect 23. 39-17. 460 paces west of center 23. A high elevation of rock in a level country. The rock is a hornblende schist.

253
41811

Sect 23. 39-17. 250 paces east, 225 paces north of center 23. An irregular outcrop of a fine schistose rock in which hornblende crystals are seen. Does not show schistosity very much. It is not cracked very much. It has light & dark layers in it. Large hornblende crystals in the dark layers. Almost identical with those of sect 22.

254
41812

300 paces east of $\frac{1}{4}$ S. 14-23, 39-17. A conglomeratic boulder beside the road. The matrix is hornblende schist.

255
41813

Sect 14. 39-17. 750-800 paces north, 375 paces east of $\frac{1}{4}$ S. 14-23. An outcrop on an elevation in a level country. Many irregular rocks in a large pile & covering a large area. They all are conglomeratic.

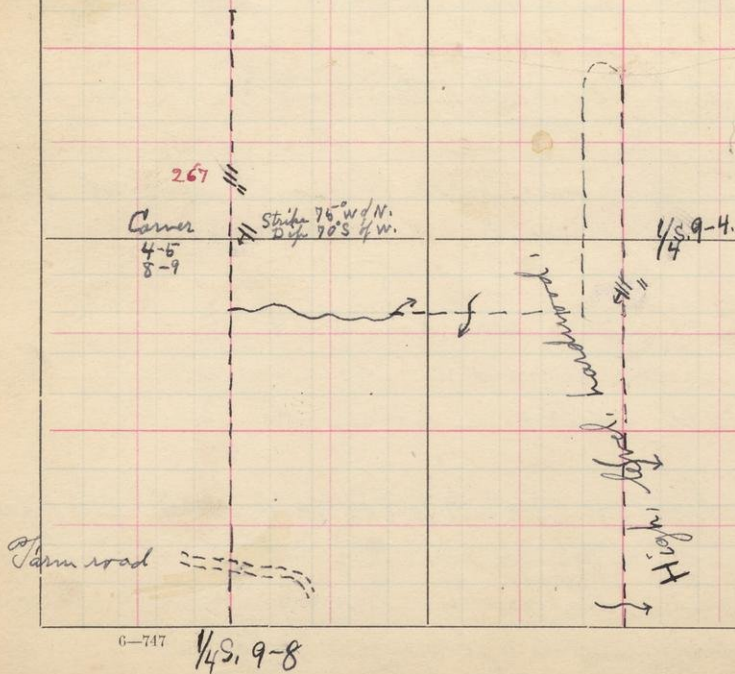
29 S.

T. 39. N.

R. 17. E.

✓

Hornblende schists.



265

41894

Sect 16. 39-17. 700 paces north of $\frac{1}{4}$ S. 16-21. ✓
 An irregular outcrop forming a hill about
 10 ft high. A fine grained hornblende
 schist composed of dark & light layers.
 It extends as a high hill 50 paces to the east.
 Strike 70-80° west of north. Slip 75-80° south of east.
 This hornblende schist is of different degrees
 of fineness: the finest varieties resemble
 a greenstone at first.
 More quartz veins are found in the
 coarse grained varieties but not in the
 fine grained.

266

41895

At $\frac{1}{4}$ S. 9-16. 39-17. Here is a quartzose ✓
 vein running 70° W of N in hornblende schist.
 Inside of this vein is a smaller one
 composed of large vitreous quartz chunks
 in a white mineral (feldspar). A few
 hornblende crystals are scattered through it.
 The large vein is 25 ft or more thick.

150 paces south of $\frac{1}{4}$ S. 9-4. Small irregular ✓
 outcrop in level hardwood. of same hornblende schist.
 Strike 70-80° W of N. Slip 70° S of W.

267

41896

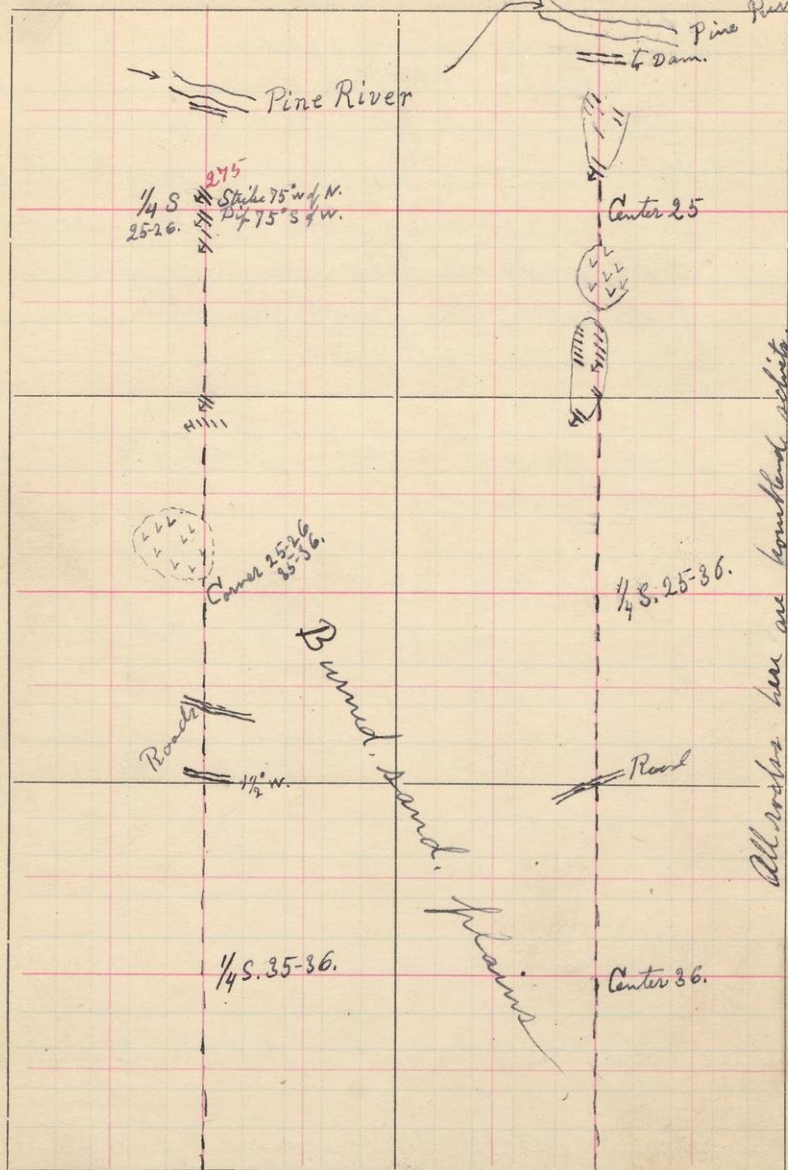
Sect 4. 39-17. 170 paces north of cor 4-5, 8-9. ✓
 Irregular outcrop in level country, hornblende schist
 Extends south 30 paces.

31

S.

T. 39. N.

R. 17. E.



268

41817

Loc 9, 39-17, 100 paces S, 25 paces west of
 $\frac{1}{4}$ S. 8-9. Outcrop of a variety of
 hornblende-schist.

269

41818

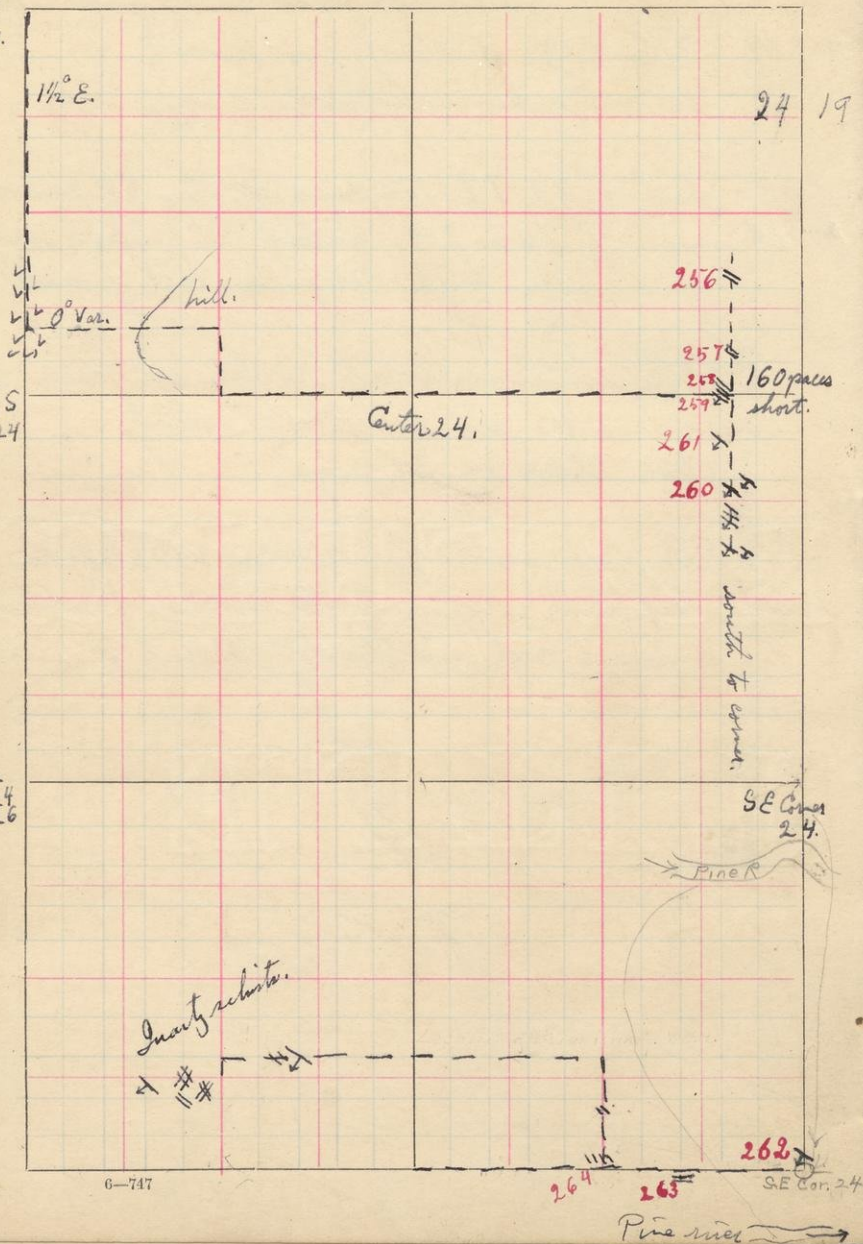
Loc 9, 39-17, 100 paces south, 50 paces
 east of $\frac{1}{4}$ S. 8-9. Outcrop at north end
 of a very high irregular hill of hornblende-schist.

All unnumbered rocks on pages 27
 and 29 are hornblende schist.
 Also those on 31 page.

The rock about $\frac{1}{4}$ S. 25-26, 39-17, form a
 steep hill sloping to the river and extending
 eastward and westward for about a mile.

R. 17, E.

Corner
13-14
23-24.



Loc 24. 39-17. 800 paces south, 100 paces east of Corner 13-14, 23-24. is a high land rising from a swamp & extends east. Found no rocks.

At 800 paces south, 300 paces east is a higher land with hills on it. Berops sink down but not to ledge.

256

41819

Loc 24. 39-17. ~~300~~ paces Boulders, diffent kinds. ✓

257

41820

Boulder. as found later. ✓

258

41821

Loc 24. 39-17. 20 paces west, 20 paces north of $\frac{1}{4}$ S. 24-19. An outcrop traced 25 ft N.W. Strike 80° W of N. Dip 70° S of W. A schistose quartzose rock. ✓

259

41822

Loc 24. 39-17. 25 paces west of $\frac{1}{4}$ S. 24-19. ✓
An irregular outcrop of a dark, fine grained rock. Same strike & dip as above.

260

41823

Loc 24. 39-17. 240 paces south of $\frac{1}{4}$ S. 24-19. ✓
Strike & dip same as No 258.

261

41824

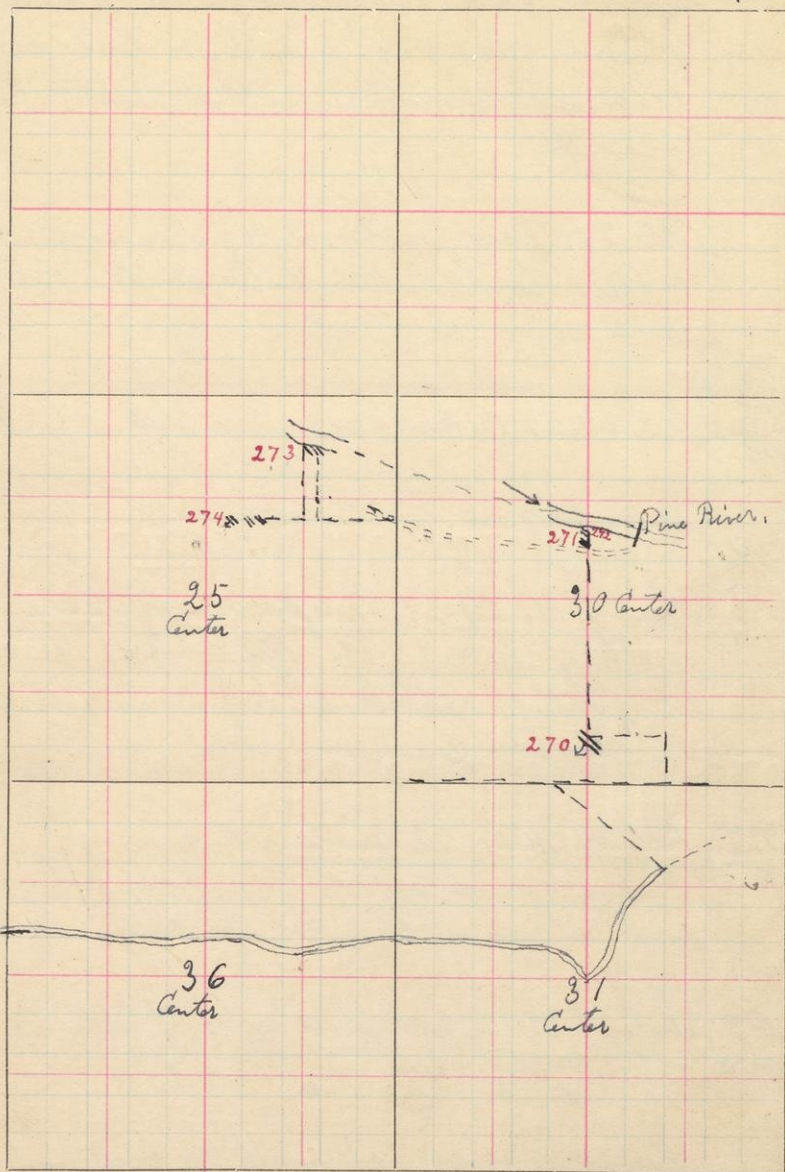
Loc 24. 39-17. 100 paces south, 60 paces east of $\frac{1}{4}$ S 24-19. Flat ledge. Strike of schistosity 80° W of N. Dip 60° S of W. ✓

3 35-

S.

T. 39, N.

R. 17, E. & 18, E.



262

41825

Loc 24, 39-17, 50 paces north of Cor 24-19 ✓
 An irregular outcrop on the brow of a hill
 sloping to Pine River. A very homogeneous
 rock, no light & dark bands. Could not
 get dip & strike.

Loc 24, 39-17, 1300 paces west, 300 paces north of ✓
 S E Corner 24. A small outcrop of quartz schist
 same as 264. Strike 80° E of W. Dip 80° N of W.
 There are small hornblende streaks or layers
 parallel with its strike & dip. Many outcrops
 on a hill extending 50 paces N.

Loc 24, 39-17, 390 paces east, 140 paces north of ✓
 S W Corner 24. A quartz schist outcrop on a
 hill extending 50 paces E. S E. Strike 75° N of W.
 Dip 70° S of W.

263

41826

Loc 24, 39-17, 300 paces west, 15 paces south of ✓
 S E Corner 24. Outcrop of a ledge extending
 E-W a few hundred feet parallel
 with the river.

264

41827

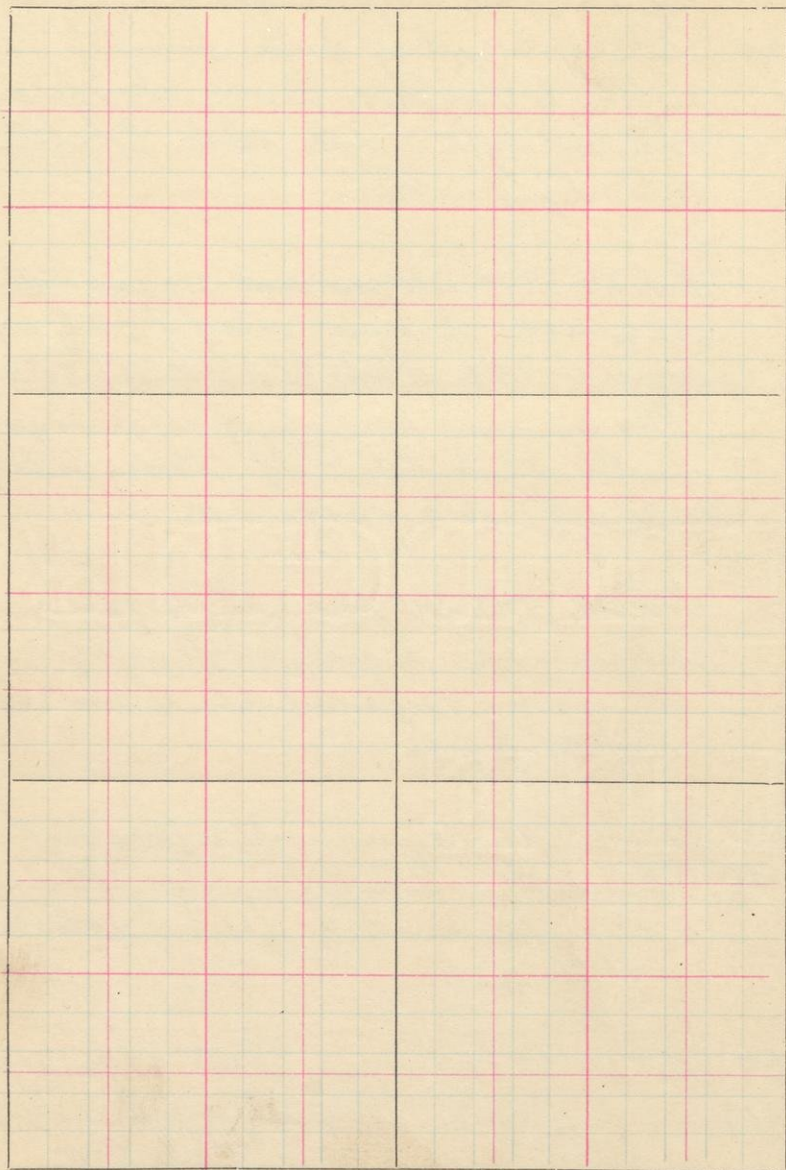
Loc 24, 39-17, 500 paces west, 40 paces N of ✓
 S E Corner 24. A quartz schist outcrop on
 a hill 50 paces E-W. Strike E-W.
 Dip vertical.

3 37

S.

T.

R.



N.E. from Center 31 a rock was mapped. Here are high round topped sand & gravel hills. Many very large boulders are found, they are hornblende schist, quartzite & some slate, granites & conglomerates. Brooks don't bottom on ledge & a road was cut through one of the hills & exposed only sand & gravel. The large, half buried boulders resemble ledge but they are of different kinds with different strikes & dip. & near together. The brook has a very deep channel & is the outlet of a large marsh.

270
41828

Loc 30. 39-18. 150 paces north, 15 paces east of $\frac{1}{4}$ S. 30-31. A hill formed by rock as seen by numerous outcrop all over it.

Hill extends about 50 paces E-W.

A dark fine grained schist. This hill is on a slight ridge extending W. N.W. Strike of schistosity 50° W of N. Could not see bedding, but think it is parallel to schistosity. Dip 80° S of W.

271
41829

Loc 30. 39-18. 1265 paces N of section line 15 paces E of $\frac{1}{4}$ S, 30-31. This is from the north side of the high hill south of the river.

272
41830

Loc 30. 39-18. 345 paces N. 15 paces east of center 30. Irregular outcrop of same banded & hornblende schist fac. found all over the hill.

3 39

S.

T.

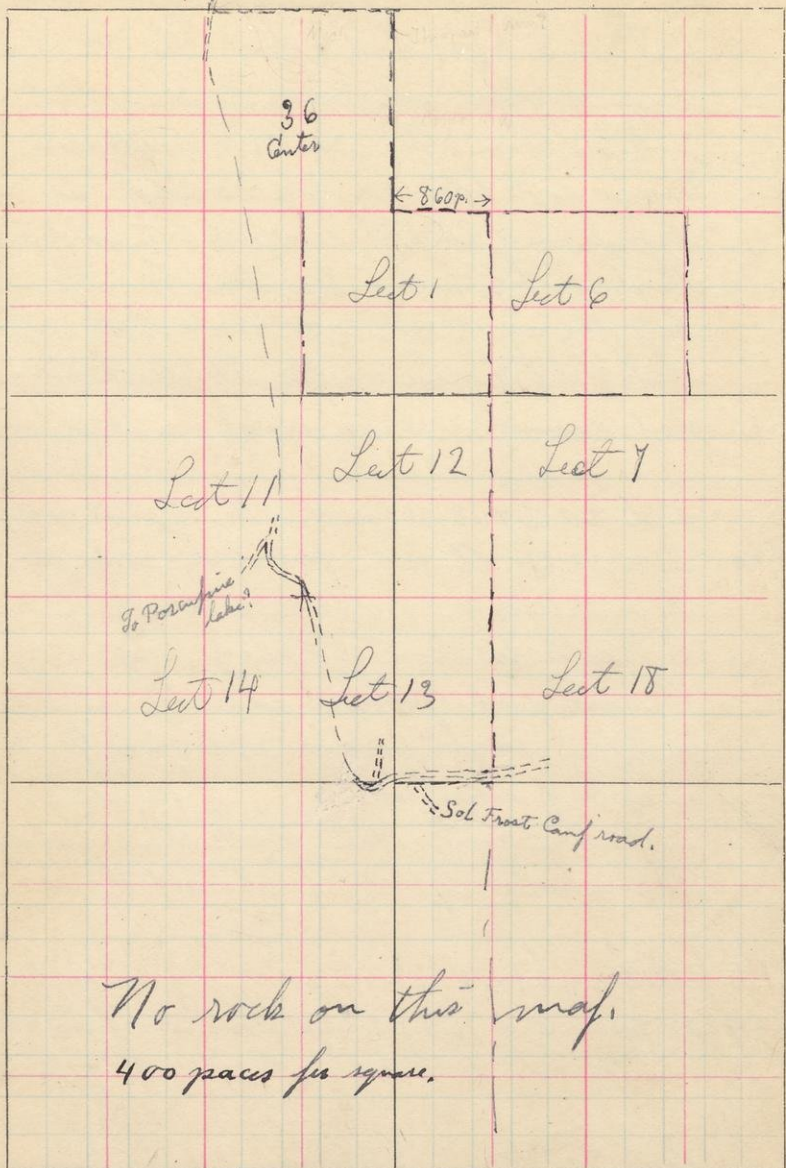
41. N

R.

15 E

T. 41. N

T. 40. N



No rock on this map.
400 paces per square.

R. 15. E.

R. 16. E.

273

41831

Sect 25, 39-17. 445 paces W. 730 paces N of
 1/4 S. 25-30. A fine grained gr. dark rock
 on bank of river. Not very schistose or
 much cracked. Has lines in it with
 strike 80° W of N. Slip 65° S of E.

274

41832

Sect 25, 39-17. 1350 paces east, 400 paces
 north of 1/4 S. 25-30. Irregular outcrop on
 the very high hill land extending E-W.
 More or less covered. Strike 75° W of N.
 Slip about 70° S of W.

275

41833

1/4 S. 26-25, 39-17. Specimen from this
 hill near the 1/4 S. Strike 75° W of N.
 Slip 75° S of W. Hornblende schist.
 dark & light layers.

6-747

3
41
S.



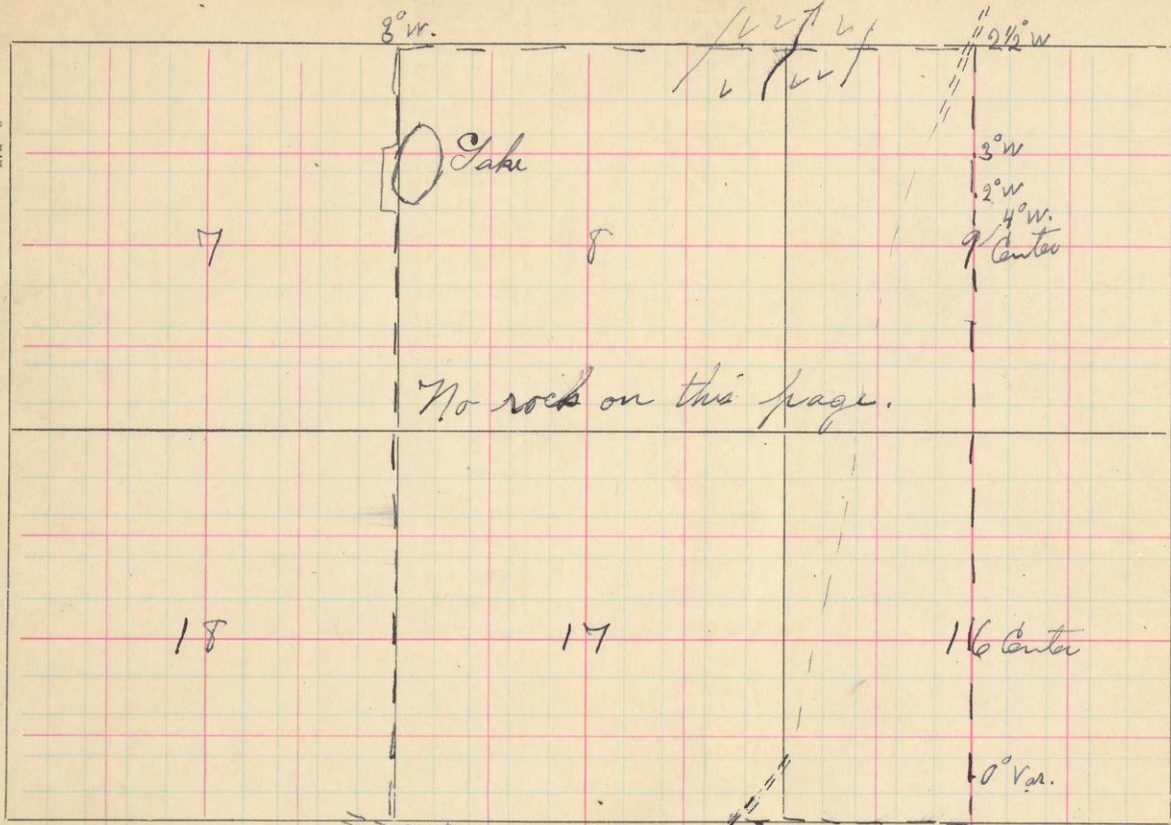
R.

46
S.

T. 40. N.

R. 16, E.

6-737



49 S.

T. 40. N.

R. 16. E.

6-747

9

10

11

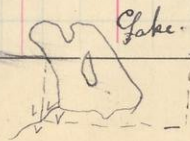
16 Center

*276

15

14

No rocks on this page.



276.

41834

Sect 15, 40-16. 1190 paces SW from
^{1/4 S. 10-15}
~~Corner 9 10, 15-16.~~ Probably a large boulder
 on the side of a slight elevation.
 It is in a large sandy country with
 no creek for 3 miles. No other
 rocks in this whole region.

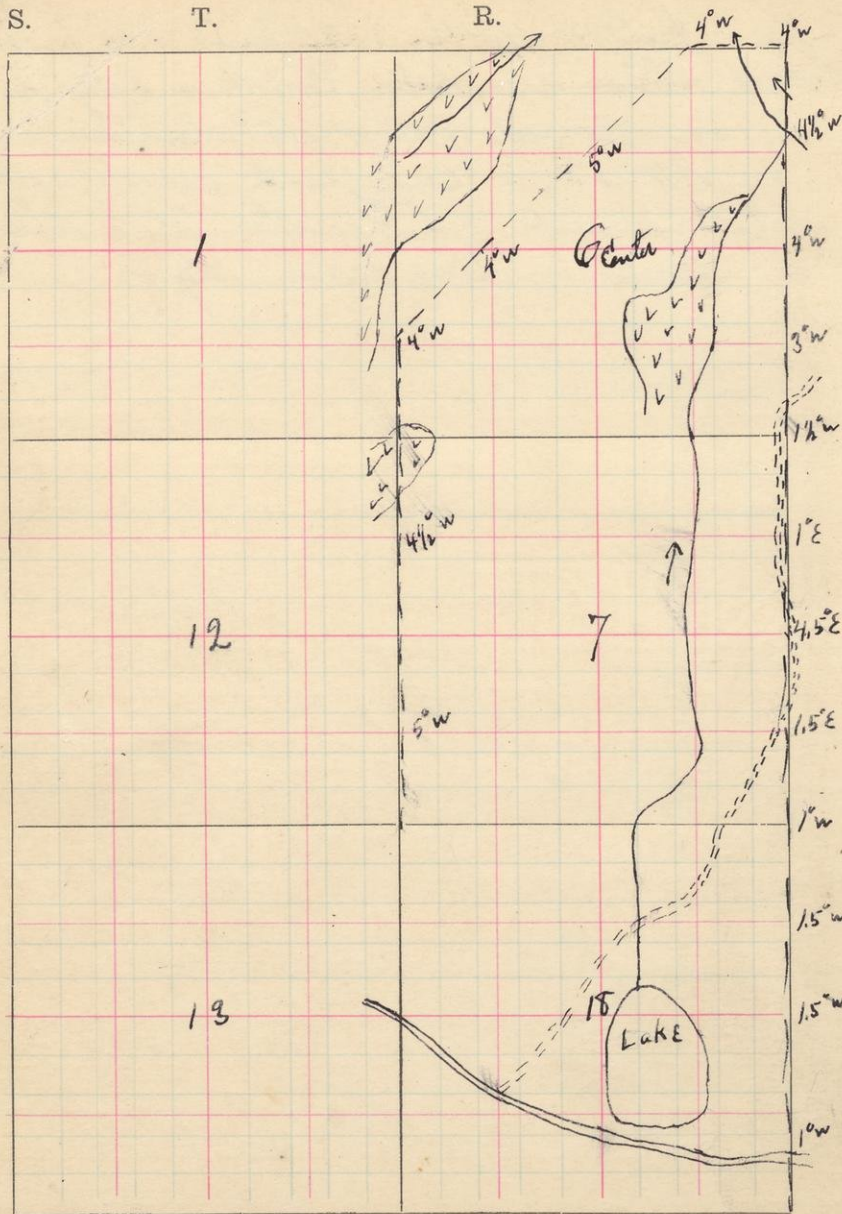
49

S.

T.

R.

T. 40. N.



Map on page 49. A sandy
wooded country. Many gentle
sand & gravel hills. No steep
bluffs nor ledges.

251 S.

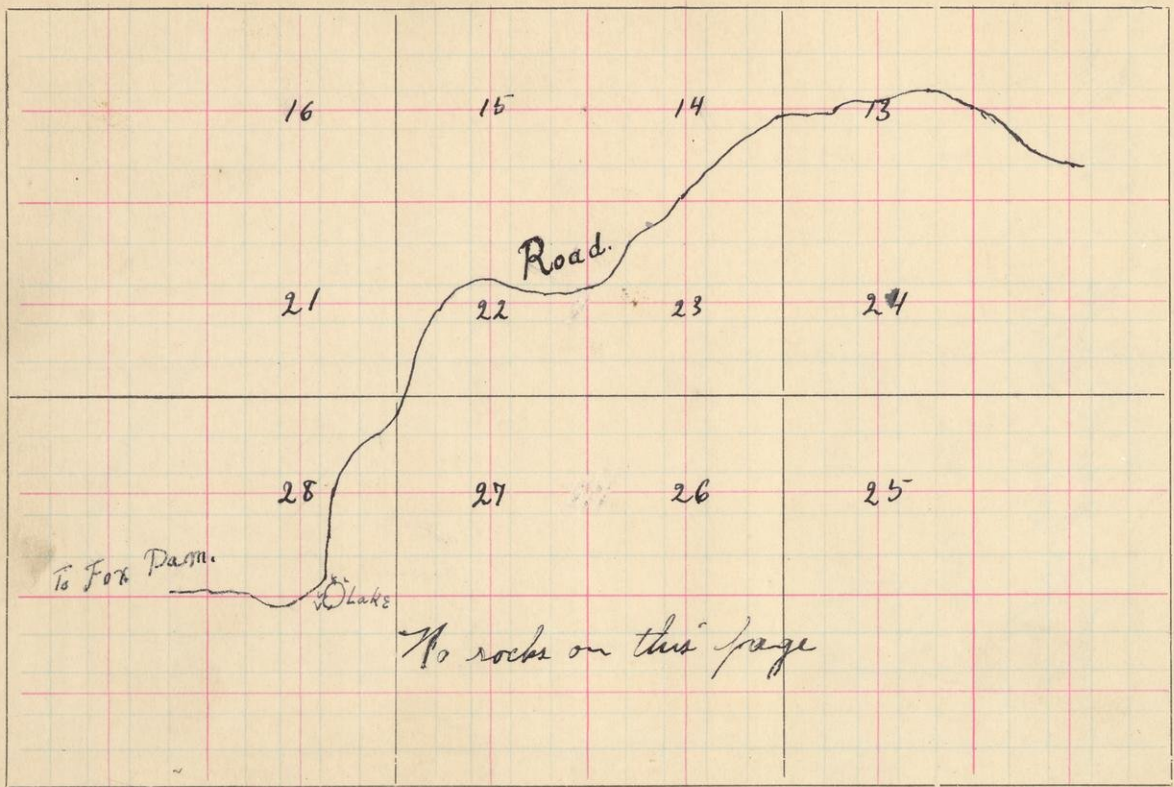
T.

40. N

R.

14. E.

6-717



No rocks on this page

Map on page 51. is of a road in the township west of the township in which we camped next after the Burshaw place.

53

S.

T. 41. N.

R. 14. E.

Am
22-23
26-27

277

278

Same as 278

280

283

26

Center

Granite with quartz veins.

281

282

277

41835

Sect 27. 41-14. 480 paces S of Corner 22-23, 26-27.
A rounded much broken greenstone knob.
Strike of schistosity 70° W of N. Slip. Irregular
veins of quartz.

278

41836

Sect 26. 41-14. 490 paces south of Corner
22-23, 26-27. Same variety of rock as 277,
but coarser structure. The south part
of this outcrop shows feldspar crystals on
its weathered surface. There is no mark
of separation between those parts showing
feldspar & those not showing it.

279

41837

A dull dark greenstone dyke cutting
through rock 278. It is not
porphyritic. Has fine hair like, irregular
white veins running through the dyke.
Some of these white veins run for a short
distance into No 278 but the greater
majority stop when they reach No 278.
The line between 278-279 is very sharp
and no contact metamorphism is noticed.
Dyke is from $1\frac{1}{2}$ to 4 ft thick & 25 ft long.

280

41838

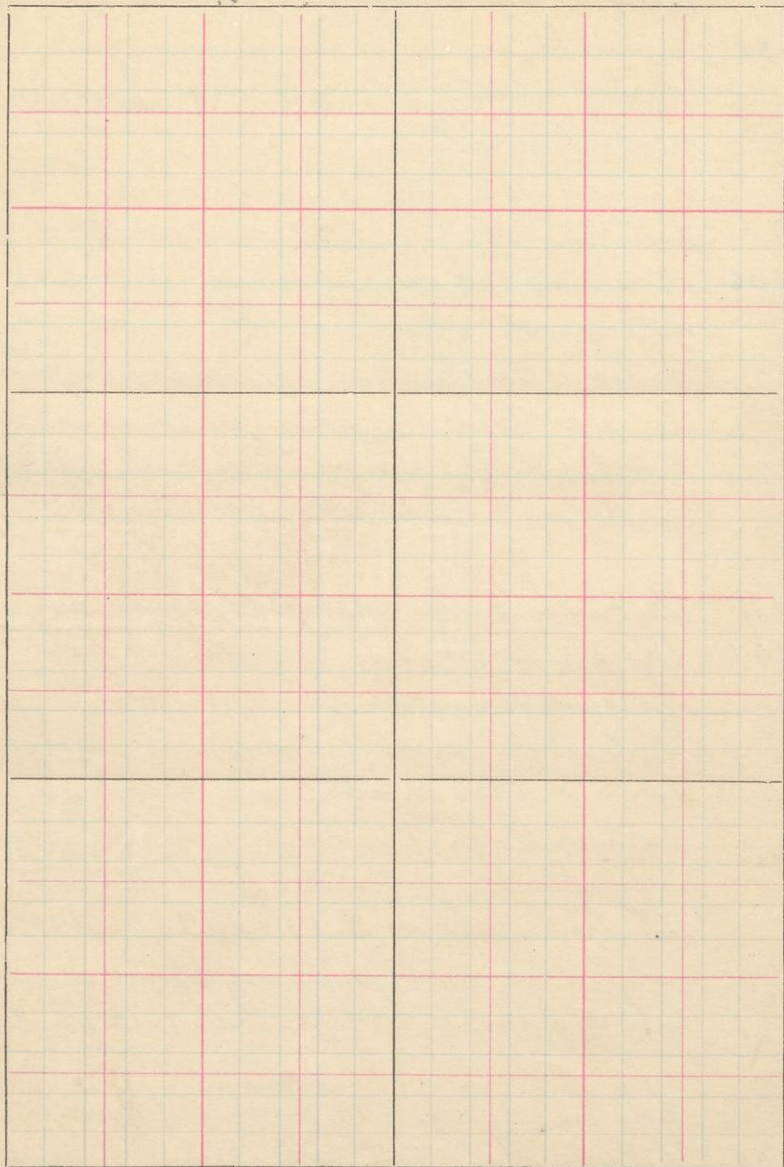
Sect 26. 41-14. 800 paces ^{50 paces E} S of Corner 22-23, 26-27
A large flat oval hill. Here is a granite vein
 $1\frac{1}{2}$ inches thick in the greenstone. Also $\frac{3}{4}$; 4, 6, inches,

55

S.

T.

R.



At 160 paces S of $\frac{1}{4}$ S. 26-27, Here the
 ledge looks like a nub of granite veins
 with irregular greenstone masses inclosed,

281.

41839

Loc 35. 41-14. 50 paces S of Cor 26-27. 34-35
 A greenstone exposed by overturned tree.
 Shows sldes for on its weathered surface.

282

41840

Loc 34. 41-14. 400 paces S. 400 paces W of
 Corner 26-27. 34-35. From a vein of red
 rock (granite?) in a red granite outcrop
 in the middle of a large swamp. The red
 granite hill is 40 paces long (E-W). The
 granite is a very coarse one.

From 400 paces south, 500 paces west of
 Corner 26-²⁷ 34-35. west to section
 $\frac{1}{4}$ line, then north to center 27, are
 found numerous boulders of red granite.

At 200 paces south of center 27 is a very
 large outcrop of red granite. but not as
 coarse as No 282.

283

41841

Loc 27. 41-14. 40 paces N. 60 paces E of
 center 27. A round knob about 30
 paces long (E-W) in a level country.
 It is a white granite.

57

S.

19

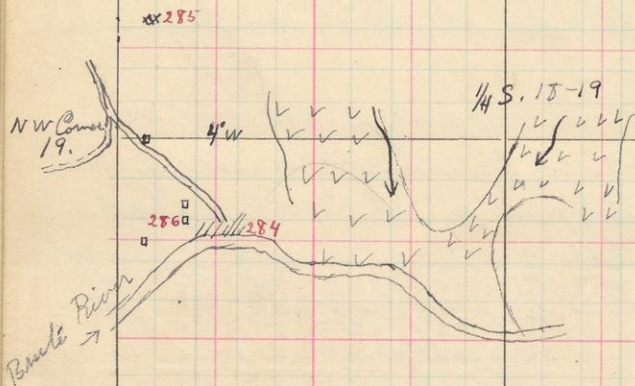
T.

42, N.

R.

25, W

Mich.



Found nothing in the
fits not numbered.

File under 41-15 E

284

H. 1842

Loc 19. 42-35. 760 paces west, 245 paces south of $\frac{1}{4}$ S. 18-19. A slate outcrop on the bank of the Drute. Couldnt see bedding. Strike of schistosity 50° E of N. Dip 85° NW. The outcrop extends 125 paces along the bank.

285

H. 1843

Loc 18. 42-35. 325 paces north, 92 paces east of Corner 13-24, 18-19. Three outcrops of chert in an E-W line. Some coarse pebbles in them. It has a pinkish tint. Couldnt determine strike nor dip.

286

H. 1844

Loc 19. 42-35. 200 paces south, 170 paces east of Corner 13-24, 18-19. 40 paces from river. A test pit. of chert, ore & black slate. The slate seems to be the same as that on the river bank.

59

43
42° N.

Hampden

34. ~~W~~ E.

S.

T.

R.

open pit



(a)

(b)

Slate
ChertSlate
Chert
Ore specks.Strike 25° W. N.
Dip 75° W.

290

Dip 60° W.

Center 36

1/4 S
35-36Chart
L. ore

0291

Sand

Isabella Mine

SW Corner 0-747
36.

1/4 line

Sect 36. 42-84. 359 paces north, 194 paces east of $\frac{1}{4}$ S. 35-36. On outcrop of chert and slate, ferruginous, on the south side of the road. The slate is folded ~~on~~ with, in general, a E-W strike, dip nearly horizontal.

Sect 36. 42-84. 345 paces north, 180 paces east of $\frac{1}{4}$ S. 35-36. Slate & chert. The slate is not very schistose. The rock is folded in waves 6-7 ft from crest to crest.

Sect 36. 42-84. 342 paces N. 162 paces east of $\frac{1}{4}$ S. 35-36. Folded slate & chert on the north side of the road.

10 paces SW from above is an outcrop of folded slate & chert.

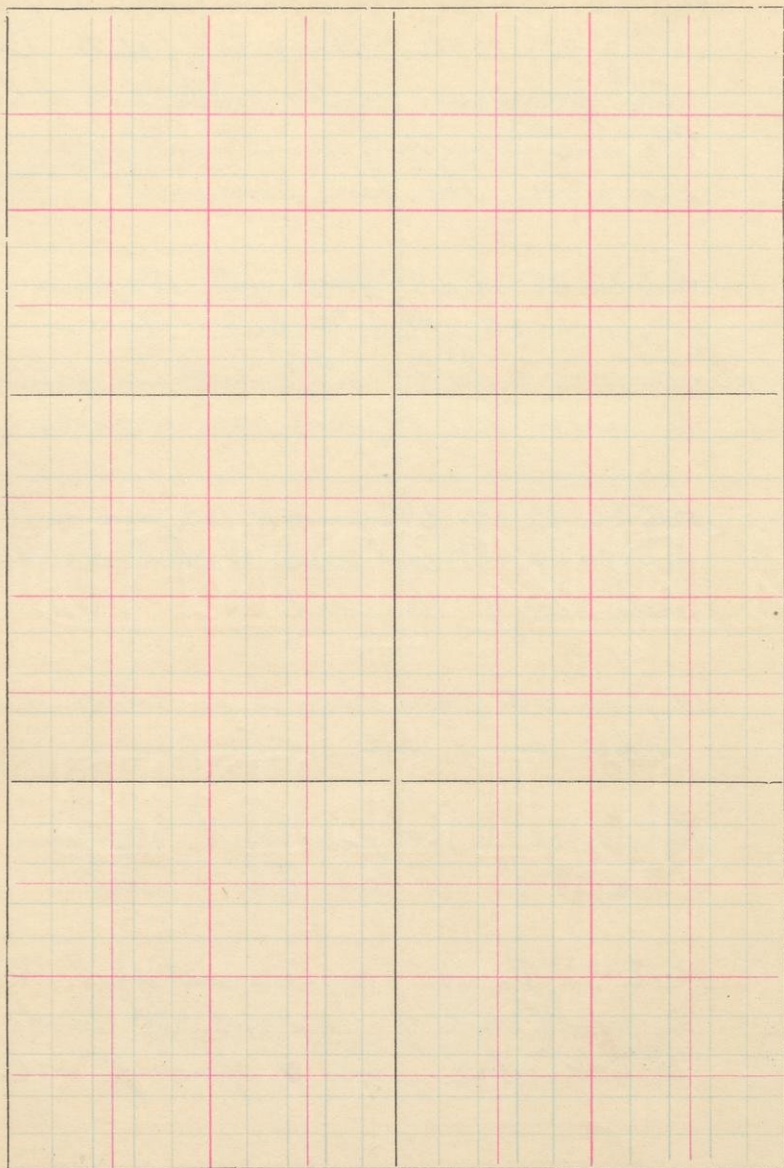
Sect 36. 42-35, 300 paces north, 120 paces east of $\frac{1}{4}$ S. 35-36. Folded slate & chert.

Sect 36. 42-34. 300 paces north of $\frac{1}{4}$ S. 35-36. On south side of road at the bend. Folded chert, slate & specks of ore.

67
S.

T.

R.



Point (b) can best be found from the small
detail map of Groen River & Stanbrough. 62

100 paces south of (b) on the west side of
the road. An outcrop of wrinkled layers
of chert & slate. Slate is brown & ferruginous.
General strike 5° W of N. Dip about 80° W.

250 paces south, 20 paces E of (b) an outcrop
of chert & brown ferruginous slate.
General strike 22° S of W. Vertical.
The layers are wrinkled & folded.

290

41846

300 paces south, 10 paces east of (b).
Outcrop of black jasper. banding distinct,
gentle wrinkles. Strike 20° E of N.
Dip 74° N.W.

440 paces south, 50 paces west of (b).
Black banded jasper.
Strike 23° W of N. Vertical.

515 paces south, 15-35 paces east of (b)
outcrop of twisted & sheared jasper.
Dip 60° W.

291

41847

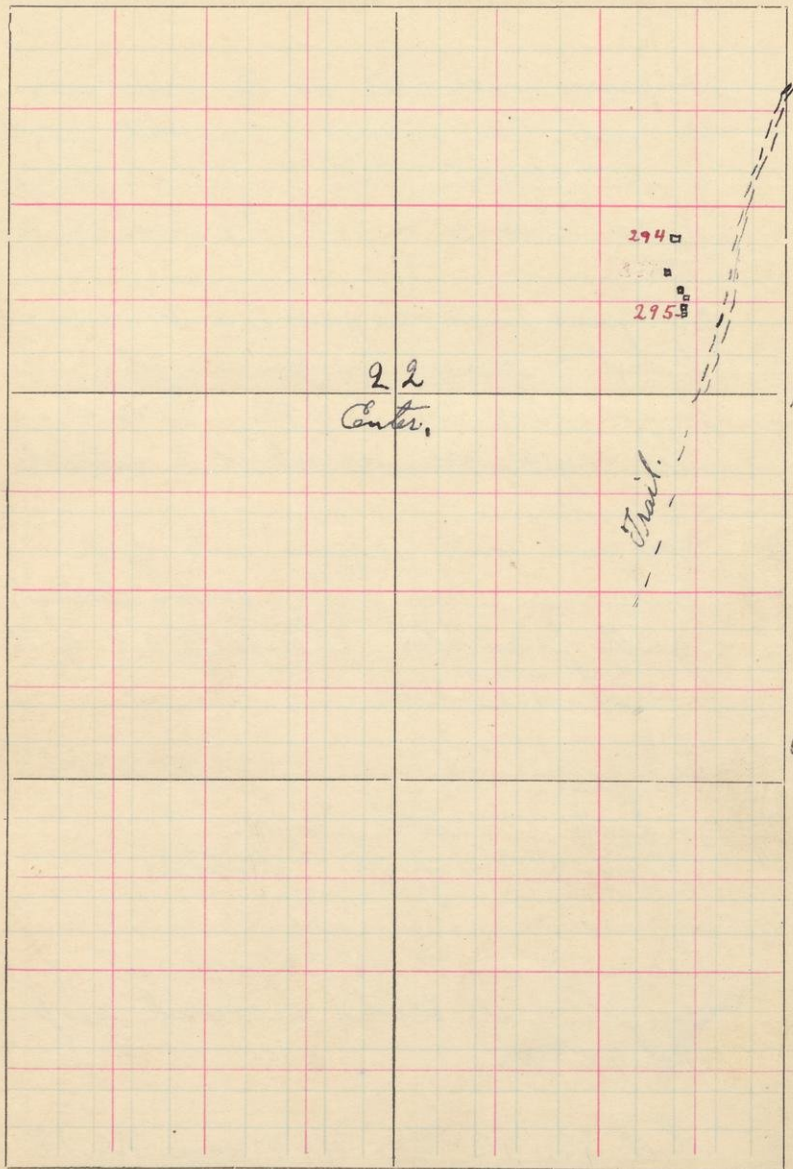
Loc 36. 42-34. 440 paces N. 150
paces east of S.W. Corner 36. Rock from
a test pit.

83

S.

T. 42. N.

R. 85. W.



287

41848

Sect 22. 42-35. 670 paces south,
825 paces west of Corner 14-15, 22-23.
A test pit of slate, ferruginous, on
hoor of a hill.

294

41849

Sect 22. 42-35. 590 paces south, 300
paces west of Corner 14-15, 22-23.

A black slate test pit.

(This is the same as No 287. Rock
from the same test-pit. Located
by different compass-men and
from different starting points.)

295

41850

Sect 22. 42-35. 775 paces south, 290
paces west of Corner 14-15, 22-23.
A quartzite test-pit. Red colored.

785 paces south, 285 paces west
of Corner 14-15, 22-22. A quartzite test-pit.

The other mapped pits have nothing.

65
S.

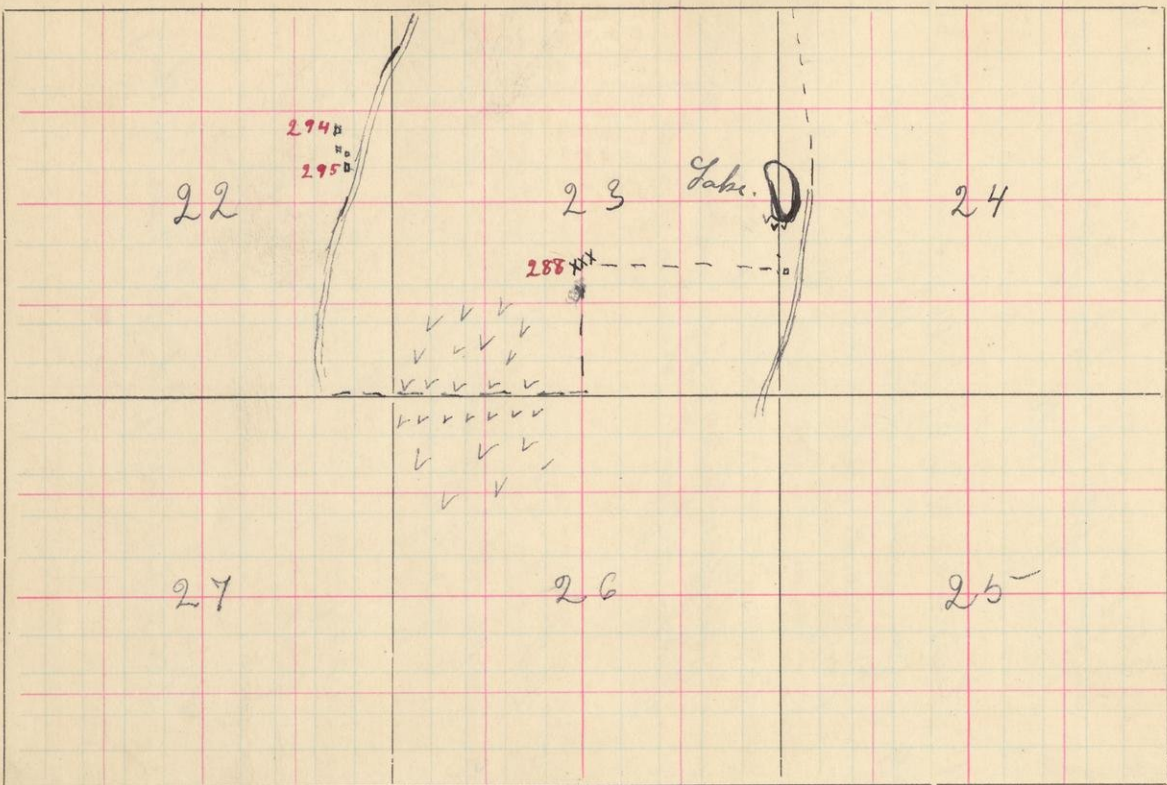
T.

42, N

R.

85, W.

6-7-17



288

41851

Loc 23, 42-35, 700 paces north
of 1/4 S. 23-26. A large chert
outcrop on the north-west side of a
high hill. The outcrop extends NE
about 160 paces. Red tinted.
Couldnt see bedding.

289

41852

Specimen from a well 400 paces
north of, 20 paces west of the
SE Corner 24. (This seems to
be a mistake.)

68

West Exploration Shaft. 90 paces ^{west} ~~east~~
112 paces north of $\frac{1}{4}$ S, 35 - 2.
The rock pile had non-schistose slate (faint
rock), chert and ore.

Test pit 20 paces S, 12 paces E of above
shaft. No rock throw out.

Test pit 132 paces S, 65 paces east of
Exploration Shaft. Black, graphite slate,
chert, quartz, lean ore, & pyrites.

140 paces N of $\frac{1}{8}$ S on the east $\frac{1}{8}$ line.
On the west side of the road, a slate
outcrop with chert bands.
Strike of schistosity E-W. Dip 85° N.

220 paces N of $\frac{1}{8}$ S on east $\frac{1}{8}$ line.
On side of road an outcrop of slate.

360 paces N, 575 paces W. of SE Cr 35 Test pit, chert, ore

185 " " 675 " " " " "

335 " " 600 " " " " "

320 " " 595 " " " " "

320 " " 570 " " " " "

310 " " 595 " " " " "

310 " " 610 " " " " "

69

S.

T.

R.

[illegible]

830 paces N. 610 paces W of SE Cor 35,
East pit of slate, chert. no ore.

310 paces N. 625 paces W of SE Cor 35,
East pit of slate & chert.

310 paces N. 640 paces W of SE Cor 35-
Slate chert & lean ore.

290 paces N. 610 paces W of SE Cor 35-
Red iron-schistose slate (paint rock).

292, 293 Specimens same as those
collected by Dr Bayley.

71

S.

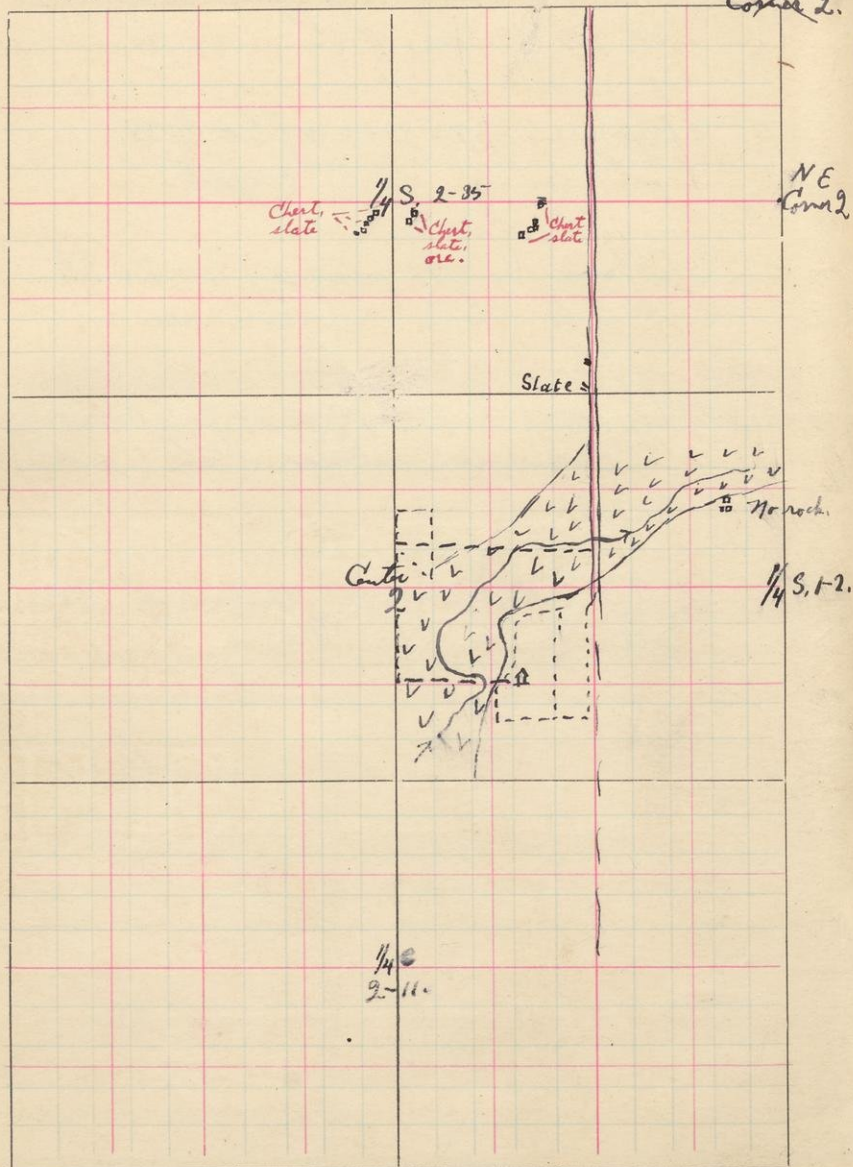
2

T.

42 N.

R.

35 W.

~~NE~~
Cone 2.

2.
Sect 2. 42-35. 417 paces south, 500 paces west of NE Corner 2. A slate ledge judged to be just below surface. It is a hill in the road scattered with slate fragments.

485 paces south, 500 paces west of NE corner 2. A slate outcrop.
Strike about 40° W of N.

Sect 2. 42-35. 625 paces west of NE Corner 2. In the road extending 25 paces is an exposure of slate with a E-W strike.

640 paces west, 55 paces south of NE Cor 2.
Test pit of slate & chert.

640 paces west, 65 paces S of NE Cor 2.
Test pit of slate & chert.

650 paces W, 65 paces S of NE Cor 2.
Test pit. slate & chert.

665 paces W, 80 paces S of NE Cor 2.
Test pit. slate & chert.

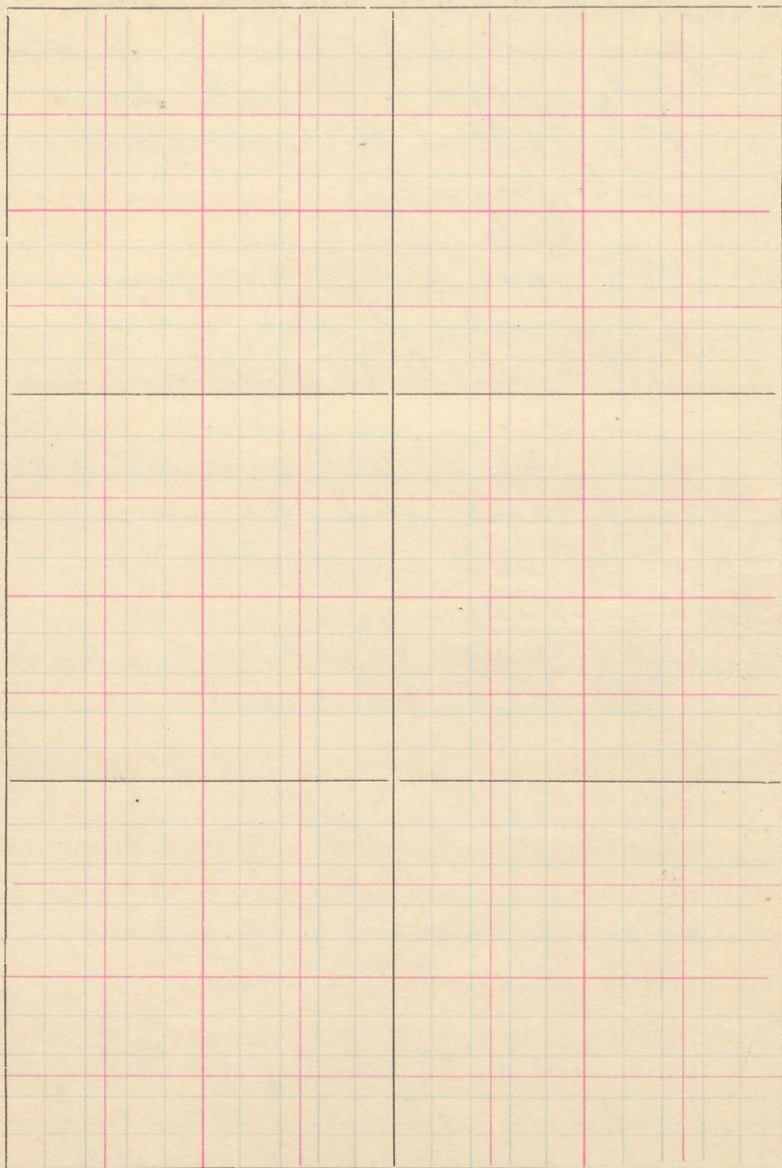
50 paces W, 80 paces S of $\frac{1}{4}$ S. 2-35,
Test pit. chert & slate.

73

S.

T.

R.



60 paces W, 45 paces S of $\frac{1}{4}$ S. 2-35.

70 " " , 55 " " " " " "

75 " " , 75 " " " "

100 " " , 75 " " " "

The above are test-pits of chert & slate.

73

S.

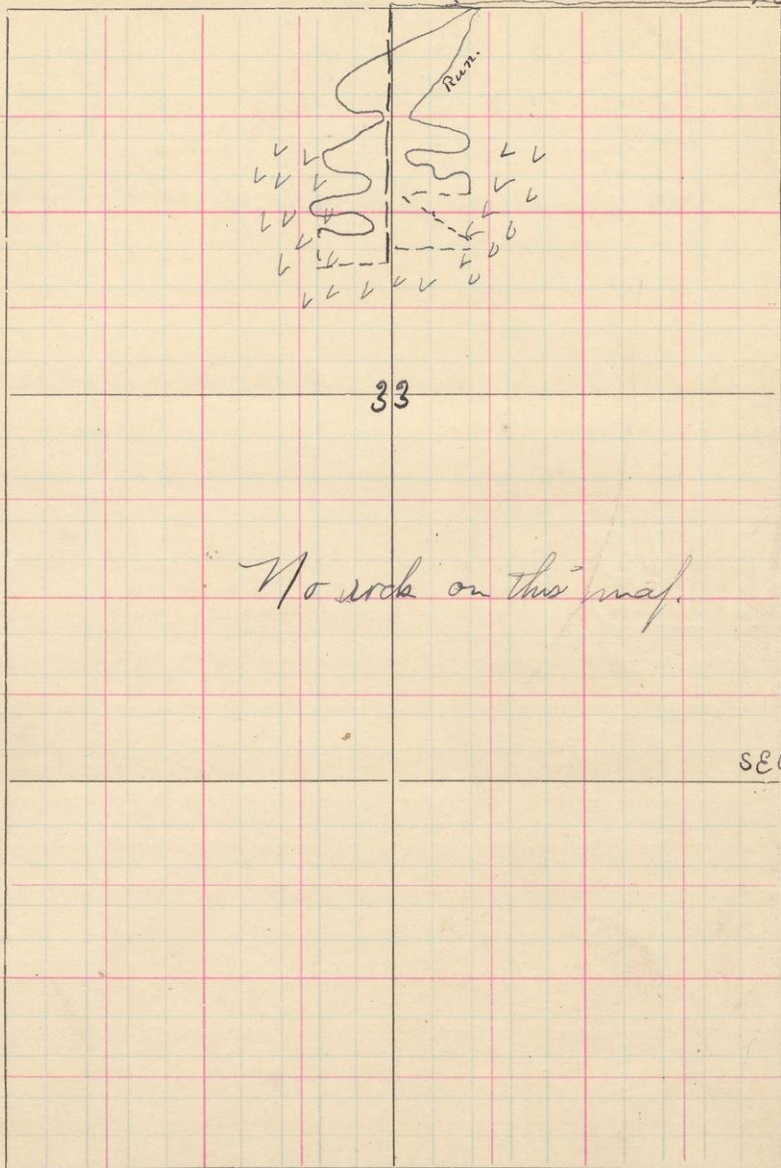
T.

45

R.

Road

NE Cr



Diamond Drill holes west of Menimo

Measured from the SW corner of the iron
bridge across the Iron River, west of
Menimo mine.

604 paces W, 265 paces S of SW Corner of
bridge. A diamond drill hole in a
level field; place now nearly covered
over. 18 paces N of E-W road.

~~45 p~~ 225 paces S, 680 paces W of
SW corner of bridge. A diamond drill
hole. The pipe yet remains in place.

620 paces W, 110 paces S of SW Corner
of bridge. A diamond drill hole
in edge of cedar, tamarack swamp.
The iron pipe yet remains in place.

1/8 S.

0-217

• Slate
 Slate, low chert.
 Highly ferruginous slate.
 • Slate, chert.
 • slate, ore specks.
 • slate, low.
 • slate, low chert.
 • black ore chert.

Slate trench.

Lag house.

• Slate
 • ferruginous slate.
 • Red shale, chert.
 • Graphite.

graphite

graphite
slate

1 blue square
 = 25' face.

Leet 31

Leet 32

Leet 6

Corner.

Leet 15

77 S. 32

T.

40. N

R.

8

2

1/2 S.

