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Menominee Iron Range: [specimens 261119-26165]. No. 182 1895

Bayley, William Shirley, 1861-1943

[s.l.]: [s.n.], 1895

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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 $2 \times 2\frac{1}{2} \times \frac{1}{4}$ 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.

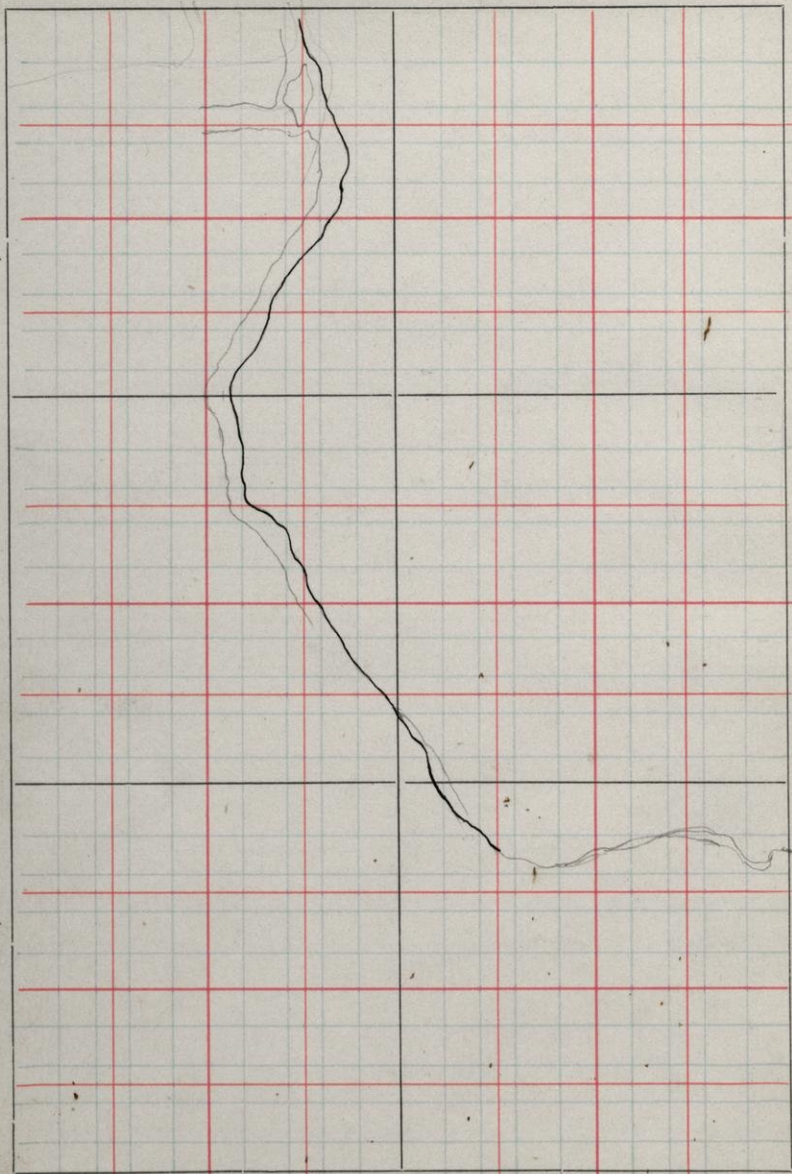
W.S.B.

182

S.

T.

R.



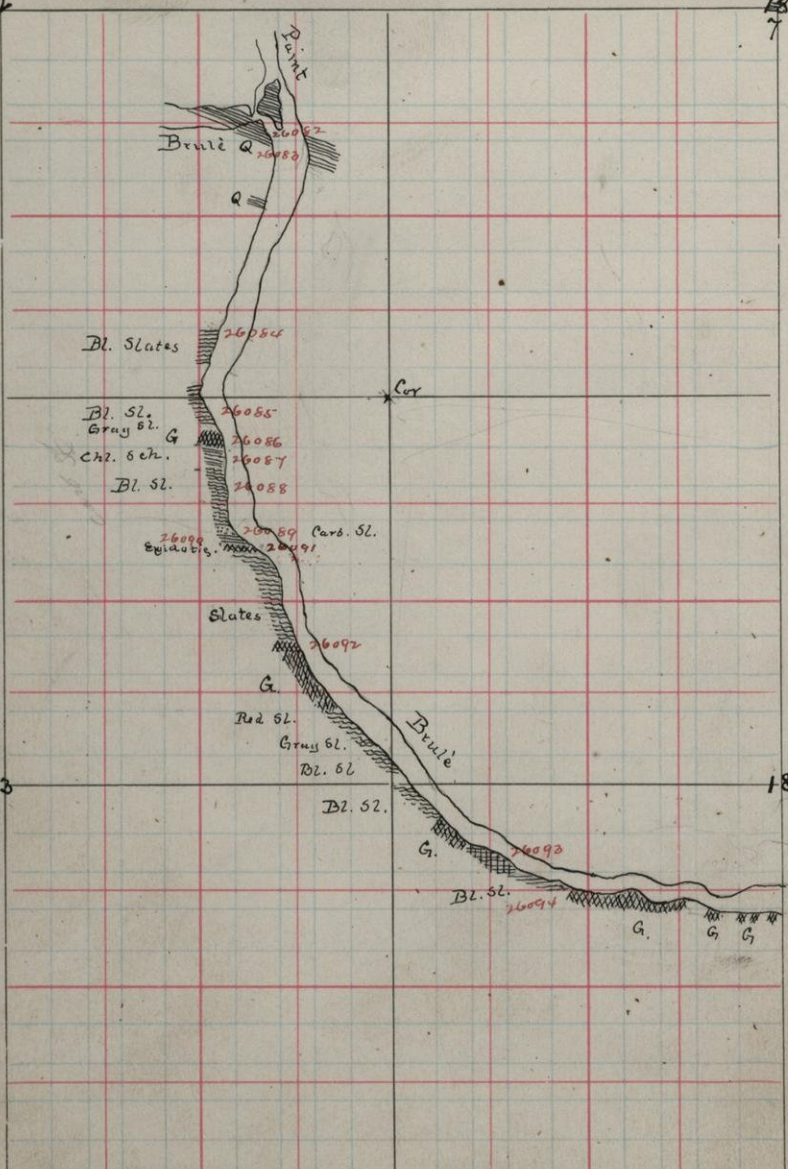
S.

T.

R.

12

18
7



J. H. R. 31 & 32

Section along Bourle River

See May Brooks Map. Pl. IX. Geol. Wisc.
Vol III.

Made a careful examination of the west and south bank of the Bourle River, from the mouth of the Point River to the mouth of the Michigamme, for comparison with May Brooks's investigations.

At the mouth of the Point river, and along the Bourle for some distance west of its mouth and on the bank of the Bourle are ledges of quartzite and quartz mica schist striking 20° N of W and dipping 40° S. W.

- 26082 The quartzite is massive and is speckled with little layers of black mica.
- 26083 The schist possesses no peculiar features worthy of mention.
- 26084 From 600 to 700 S of the mouth of the Point river are black slates which schistosity strikes 10° - 15° S of W and dips 60° with S. With a few minor interruptions the slates extend 300 paces, when they are replaced by gray slates.
- 26085
- 26086 At 900 S. is a knob of greenstone

Map. p. 1.

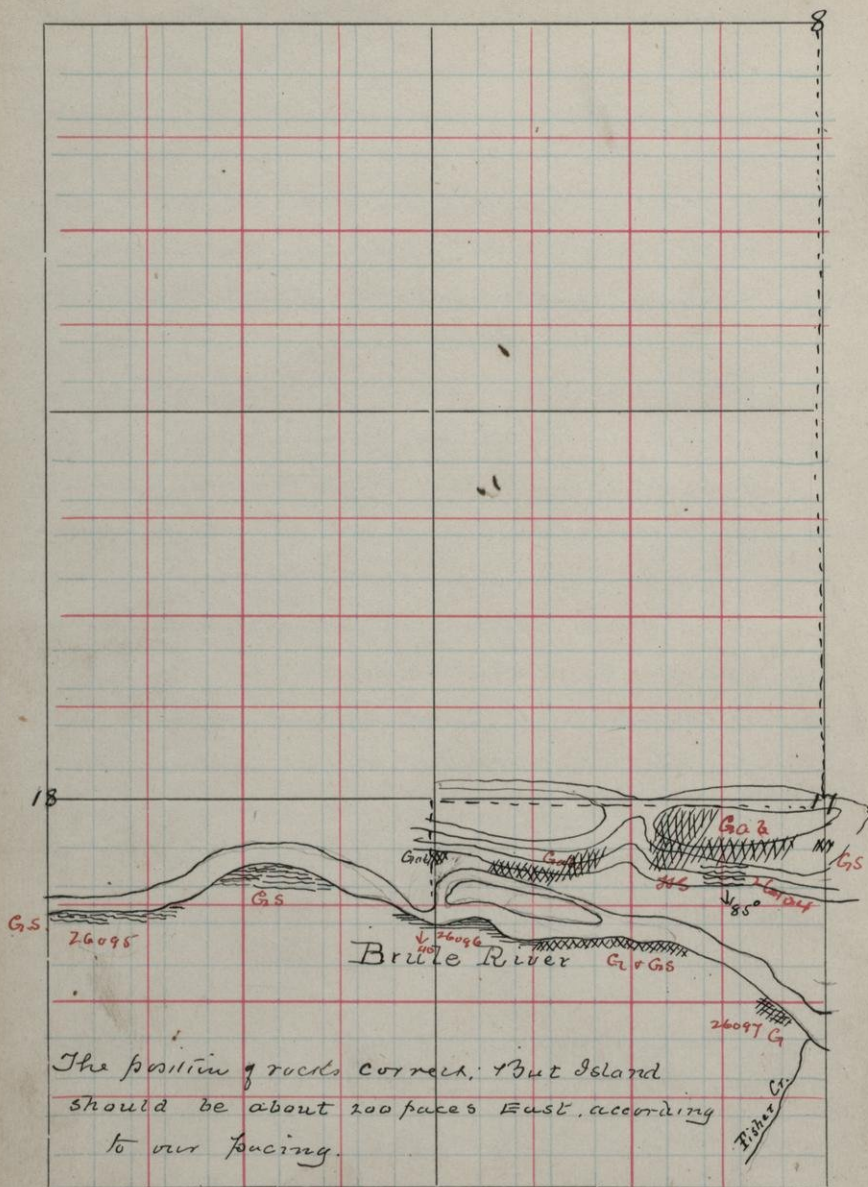
J. H. R. 31 and 32.

- 26087 South of which are chlorite & chlorite, which may be only chlorite phases of the green stones.
- 26088 South of this again are black slates, extending down stream 170 paces, when
- 26089 appears a bed of very black carbonaceous shales 50 ft thick
- 26090 Following this is a bed of whitish, rotten rock that seems like a friable sandstone, then a narrow band of
- 26091 a green, epidotic rock that appears to grade into the black slates to the north and into red slates south, which continues to 1500 South.
- 26092 A greenstone knob occurs at 1500-1700 paces South, and then appear red, gray and black slates in order, followed by another greenstone. South of the greenstone is another chlorite & chlorite, and at
- 26093 2400 paces from mouth of Paint is a white altered rock whose nature could not be determined. It may be a sandstone or a greenstone.
- 26094 Black slates occur for 50 paces beyond this and then another knob of greenstone

S.

T.

R.



is met with.

Beyond this again are massive and schistose greenstones forming a high knob on river bank.

Beyond this point the variety of rocks met with is less numerous as the stream flows with the strike of the series.

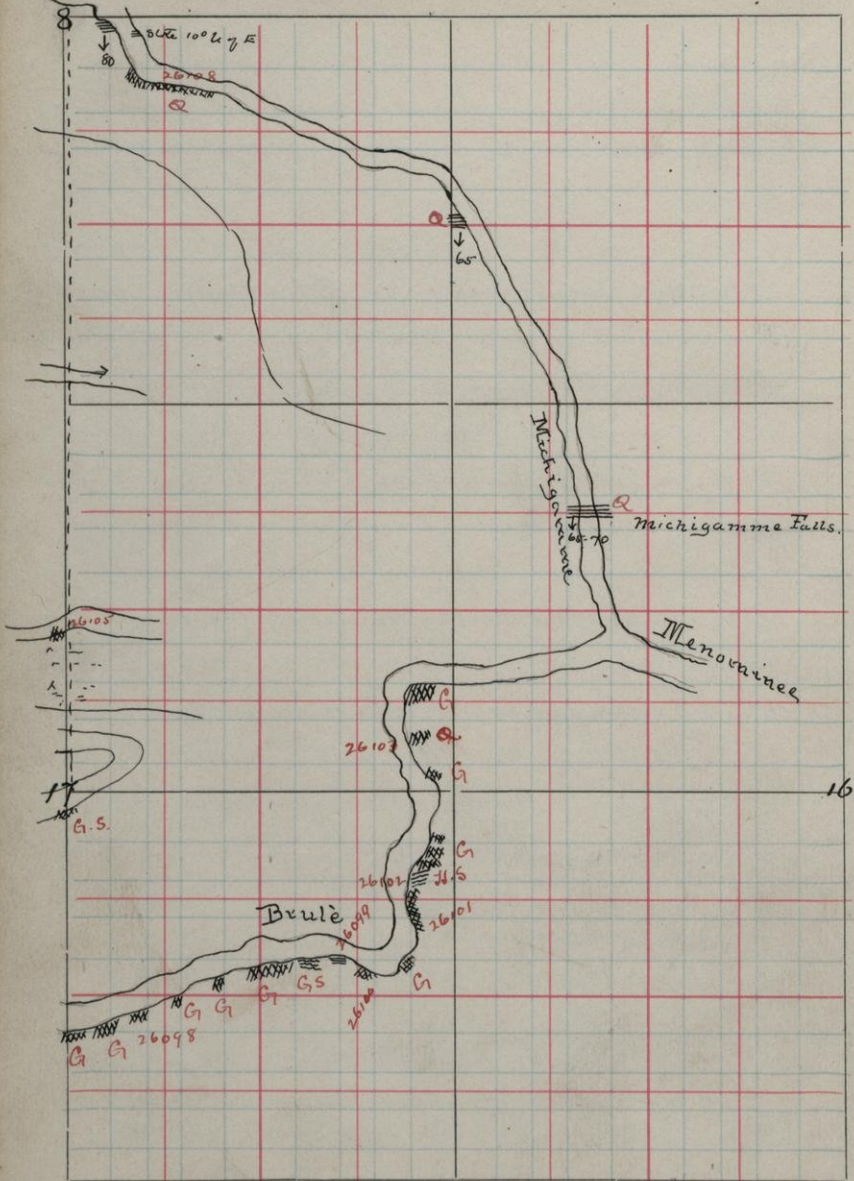
The greenstone schist stretches for about 1/4 mile along the south bank continuously.

- 26095 Specimen from first S. of center Sec 18.
- 26096 At about the crossing of Sec line between Secs. 18 and 17, black slates again make their appearance striking west E.W. and dipping 40° S.
- and beyond these greenstones and greenstone schist occurs miles westward for a mile.
- 26097 From ledge of greenstone 100 paces W of mouth of Fisher Creek.

S.

T.

R.



26098 Other greenstones occur at intervals as indicated, the next specimen being taken at 200 E of Mouth of Fisher Creek.

At 400 E there juts out into the river a point of schistose rock striking a little N of E. It resembles a slate, but in the same ledge are green-

26100 Stone Schists?

During rest of trip along the stream saw only greenstones & schists (Ex. 26103)

26101 At the bend near the W 1/4 Sec 16 are very coarse greenstones, something different from all others met with -

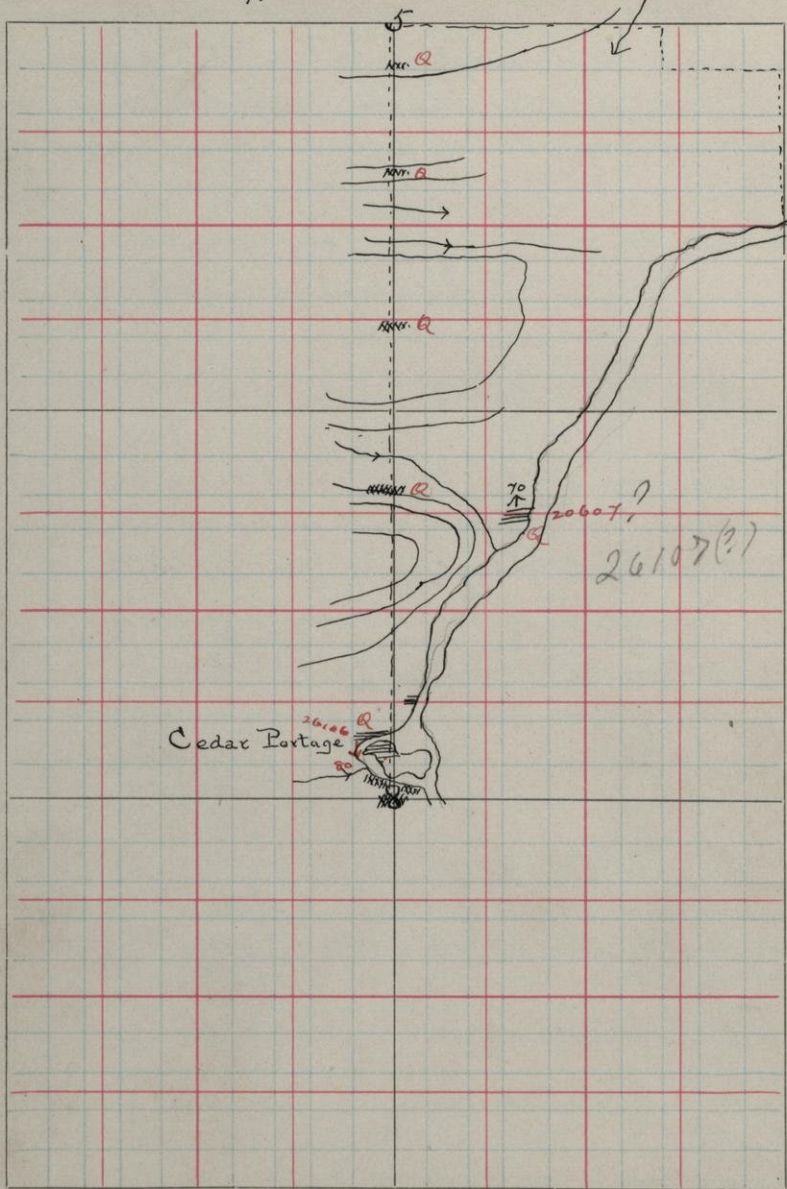
26102 A little to the north it seems to pass into hornblende schist striking 120 N of E.

26103 The only ledge other than greenstone along this side of the river is about 200 N of W 1/4 part Sec 16. This is a micaceous quartzite.

S.

T. 41

R. 31



Map p. 304.

J. H. P. 31

From point where section line between 18017 crosses river run north to see line then east to center of Sec 17, north to center of 5, East 1/2 mile, south to Michigan river and down this river to its confluence with the Brule.

In section 17 run in side of gab-bro hill, which on its south side is faced by a layer of a fine grained slaty rock resembling a black slate,

26104 or more nearly a Hornblende schist. Specimen from 150 ft. S. of center Sec 17. Schistosity \rightarrow ESW. Dip 85° S.

26105 At 370 ft of center ~~Sec 17~~^{30.0} on west side of an old logging road is a small exposure of a white slate that may be a quartz schist.

At the river bank in the center of Sec 8 are exposures of quartzite, striking 5° N of E and dipping 80° S.

26106 Specimen from N end of little island at Cedar Portage.

All the other rocks as far north as now extended are quartzite?

Map, p. 5 & c.

J. 211. P. 31

26107 W. W. side of Michigamme at 300 paces
S. W. of $\frac{1}{8}$ post between D. & of Sec 5 and
N. E. of Sec 8 is a ledge of quartzite?
striking 20° N of E and dipping 40° N E

All along the river from Cedar portage
as far as 600 paces East of the island
is exposed a low ledge of rotten
quartzite^d like that at the dam. This
is interbedded with hard quartzite?
which outcrops as ledges in the river
at various places.

26108 is specimen of the soft, micaceous
quartzite^d

Again near the point where the East
line of Sec 8 crosses the stream is an
other ledge of quartzite^d, this one
strikes nearly E W and dips 65° to S.

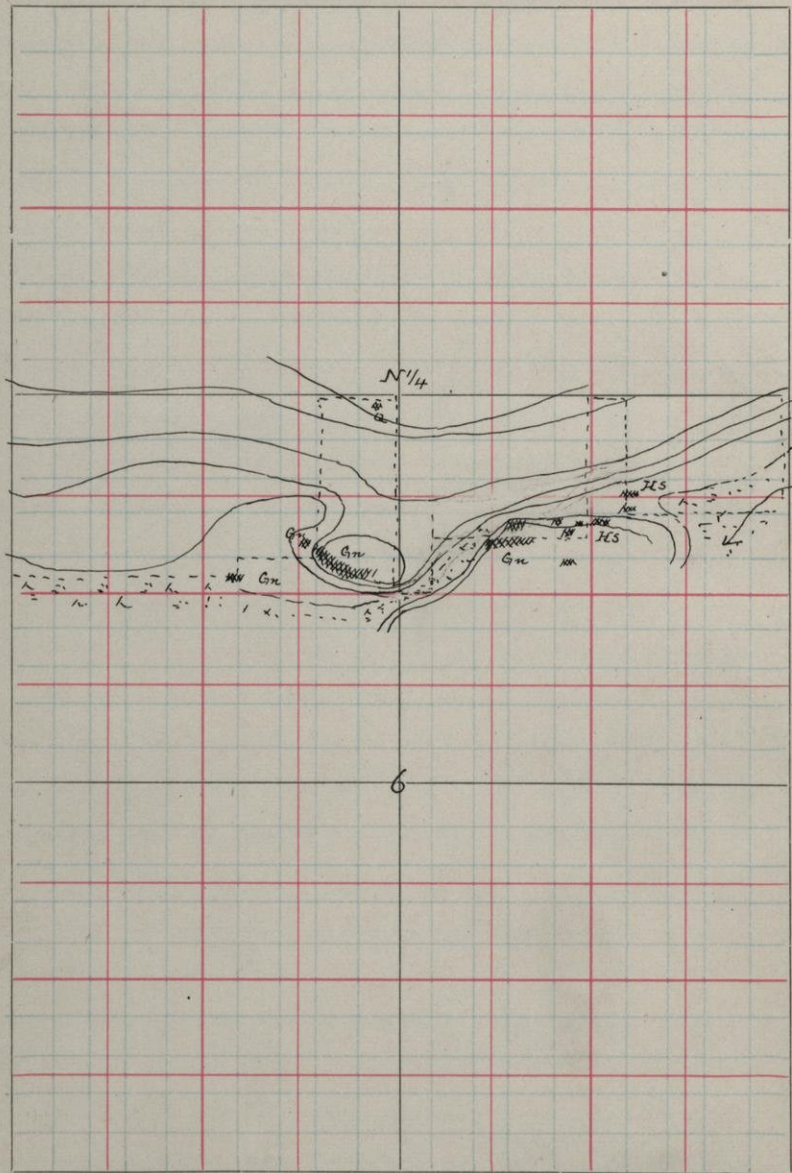
26109 At the Michigamme Falls, near the
mouth of the river the rock is a
course vitreous quartzite^d, containing
little quartzite^d. The rock is heavily
bedded. Strikes E W and dips 65° to S.

V

S. 6

T. 41

R. 29



Southern Boundary
of
Metropolitan Area
[Western Portion]

Ran along southern edge of Metro-
politan Area in Dec 1 & 2. T. 41-30
and Dec 6. T. 41 R. 29.

The distribution of the rocks is
represented on maps with letter sym-
bols, which explain themselves. The
contacts of granites^d and quartzites^d
were not seen but limits^d or areas
are well defined.

26110 At 30 paces S of NW 1/4 Dec 2. 41-30
a specimen of crushed gneiss was
taken. It resembles very strongly
a Palmer gneiss. It is unquestion-
ably a granite^d.

26111

p. 13.

15

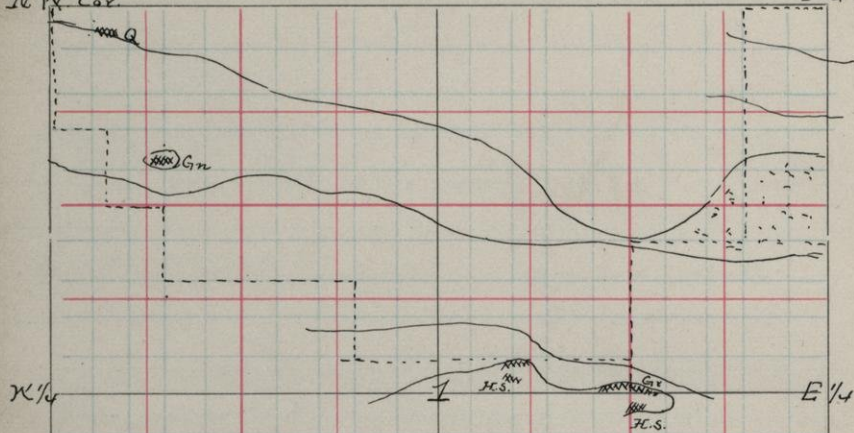
26118

S. 1
N.W. Cor. 2

T. 41

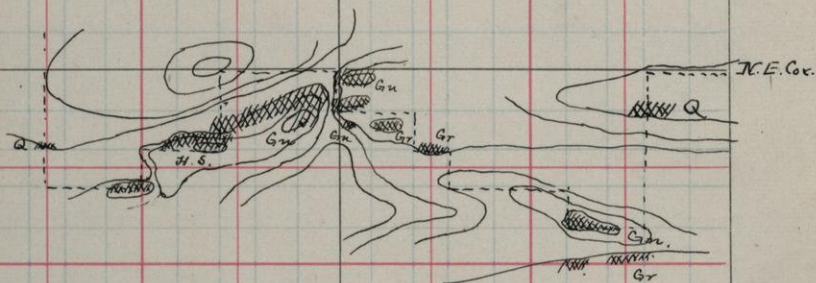
R. 30

N.E. Cor.



N 1/2 Sec 1. T 41 R 30

N.W. Cor.



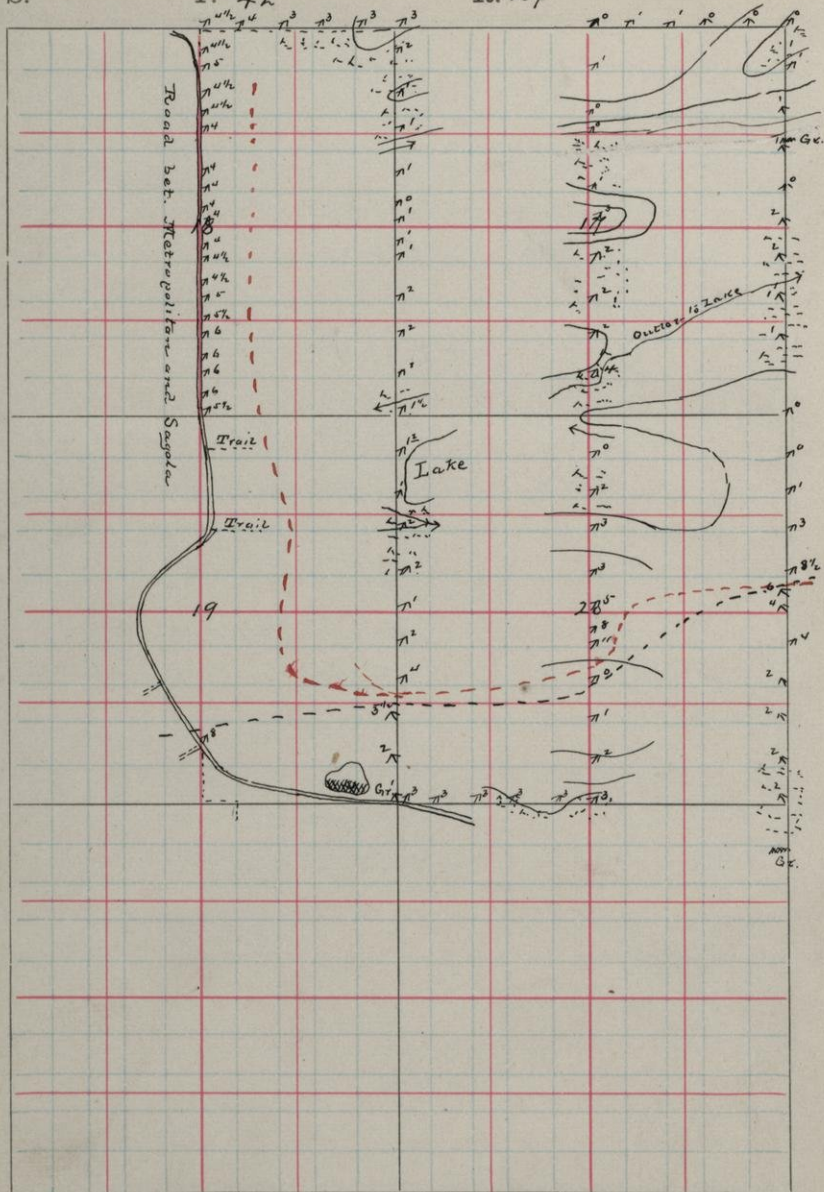
N 1/2 Sec 2

2

S.

T. 42

R. 29



J. 42. R. 29

An Examination of Secs. 17, 18, 19 and 20 in J. 42 R. 29 was made with a view to ascertaining, if possible, whether or not a magnetic line traverses them.

The result seems to show that, while there is more or less attraction in the sections, no well defined line crosses them. The western variation near the S.E. cor Sec 19 cannot be depended upon, as witnesses the variation 1 W. and 3 E at the same point, the former being taken in the afternoon at 4 1/2 P.M. and the latter in the morning at 10 A.M. The only sudden change in variation is on the E side of Sec 20. This may indicate a local attraction or a short line.

Note however the existence of gravelly outcrops in the region

Black and red heavy dotted lines indicate possible lines of attraction.

The Algonkian Area
ⁱⁿ
Northern Portions of the
Towns

42-28 and 42-29.

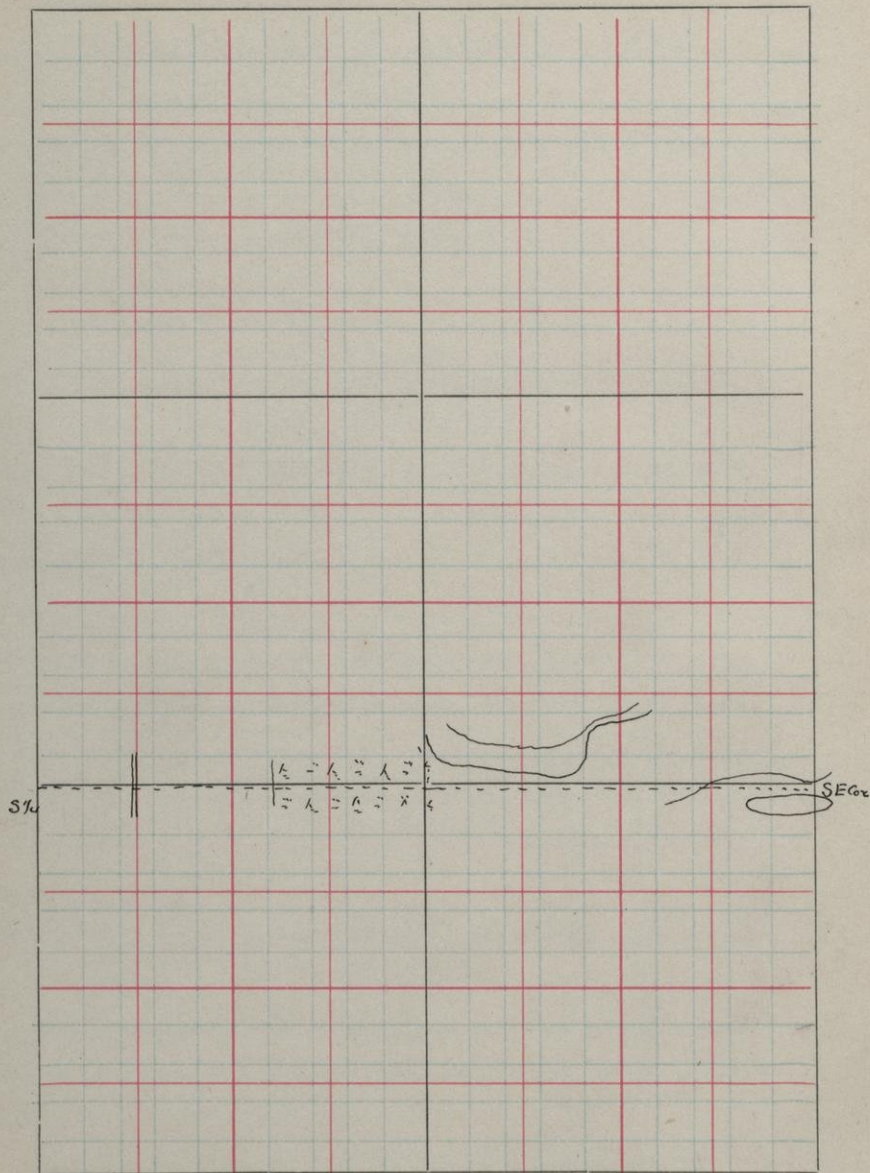
The discovery of a squeezed conglomerate at the Dam of the Sturgeon River in Sec 17 or 18 T. 42-28 led to the attempt to outline the area of which it is a part. This area is bounded on the north and on the south by the basement complex, but east and west its limits have not been determined.

Traverses were made as frequently as was thought necessary and the rocks observed were plotted. An attempt was made to work out structure, but this did not yield important results.

S. E 8

T. 42

R. 28



J. 42 R. 28

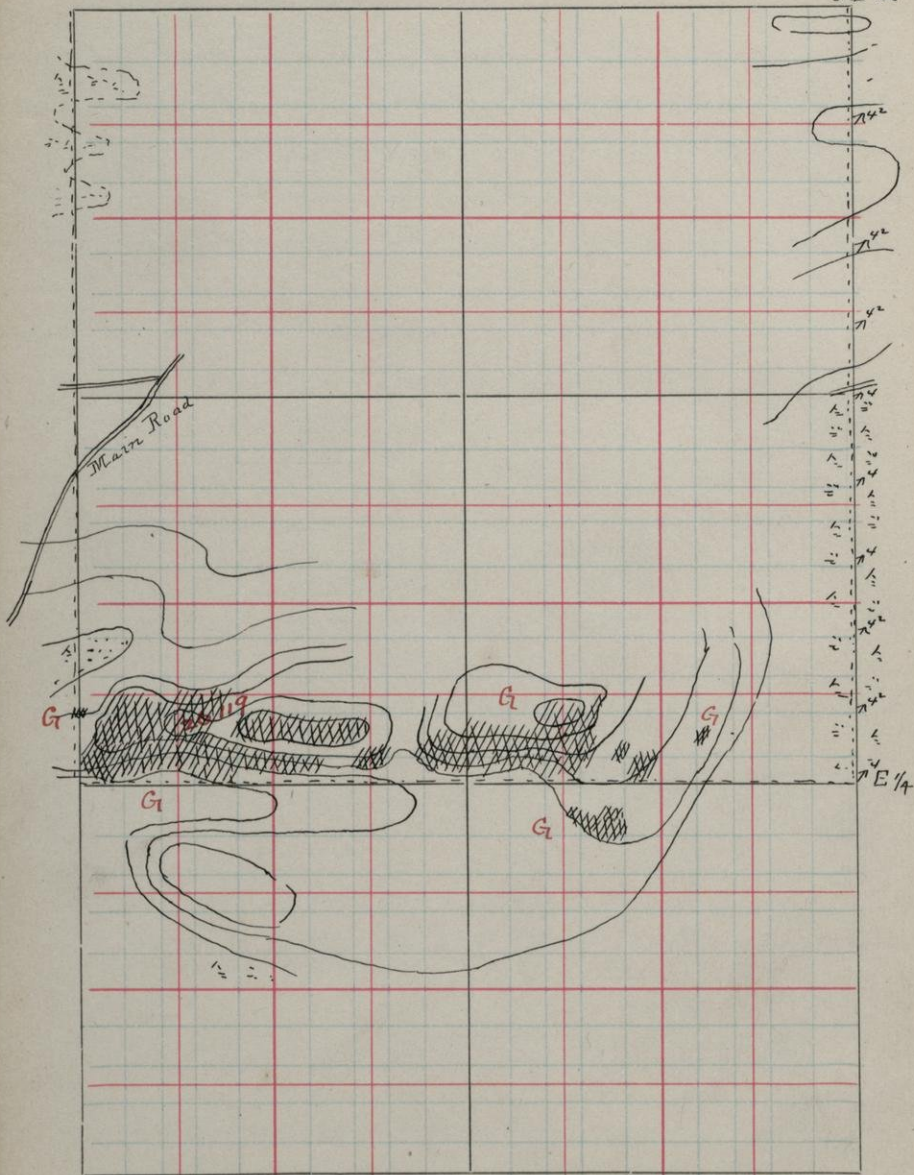
Along the S. line of the S.E. 1/4 Sec 8
no rocks were seen.

S. 17

T. 42

R. 28

NE 1/4



J. H. R. 28

Along the E side of the $\frac{1}{4}$ Sec 17 no rocks were seen.

Along the S. side of this $\frac{1}{4}$ Sec, a great ridge of greenstone was met with.

26119

From top of ridge near Center Sec 17.

The ridge runs nearly $\frac{1}{2}$ mile along this line. It varies slightly in texture, but in the main is constant in its features. At times on the southern edge of bluff it is schistose, when it resembles a lamblende schist. There is nothing to show that it is not in the Algonkian. The rock may be classed as a magnetic diabase.

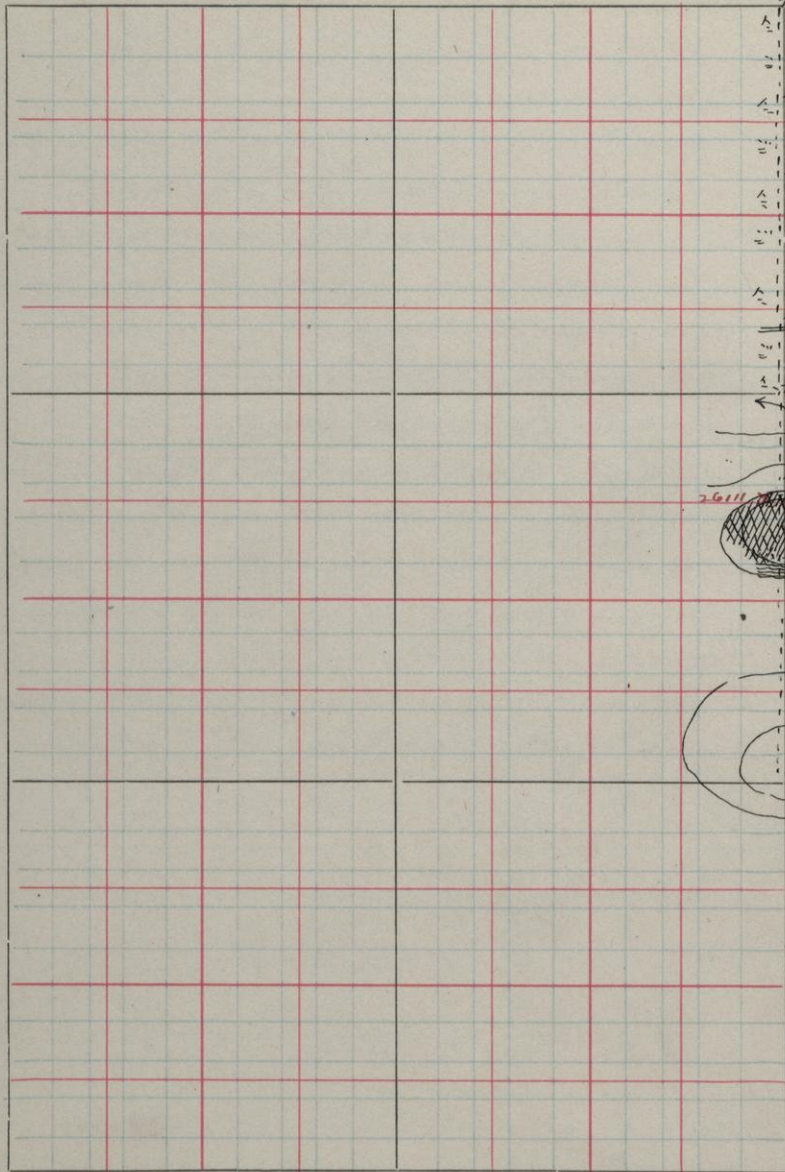
Along the west side of the $\frac{1}{4}$ no rocks were discovered other than the greenstone.

Magnetic variation shows nothing.

S.E. 17

T. 42

R. 28



F. 42 R. 28

The E line of the S.E. 1/4 Sec. 17 crosses a ridge of rock at 300-400 ft of S.E. cor Sec.

26111 On the north side of the hill at 375 ft of S.E. cor. is a well defined low banded schist

On the south side of the hill, on top, this rock is in contact with a well banded more acid rock, that appears to be a gneiss. It forms the south side of the cliff. Next to the low banded schist

26112 the acid rock is porphyritic, like a porphyroid, and a little further away

26113 it is finely and evenly banded, with a ribbon texture, as though an acid effusion, that had been sheared

Magnetics variations show nothing.

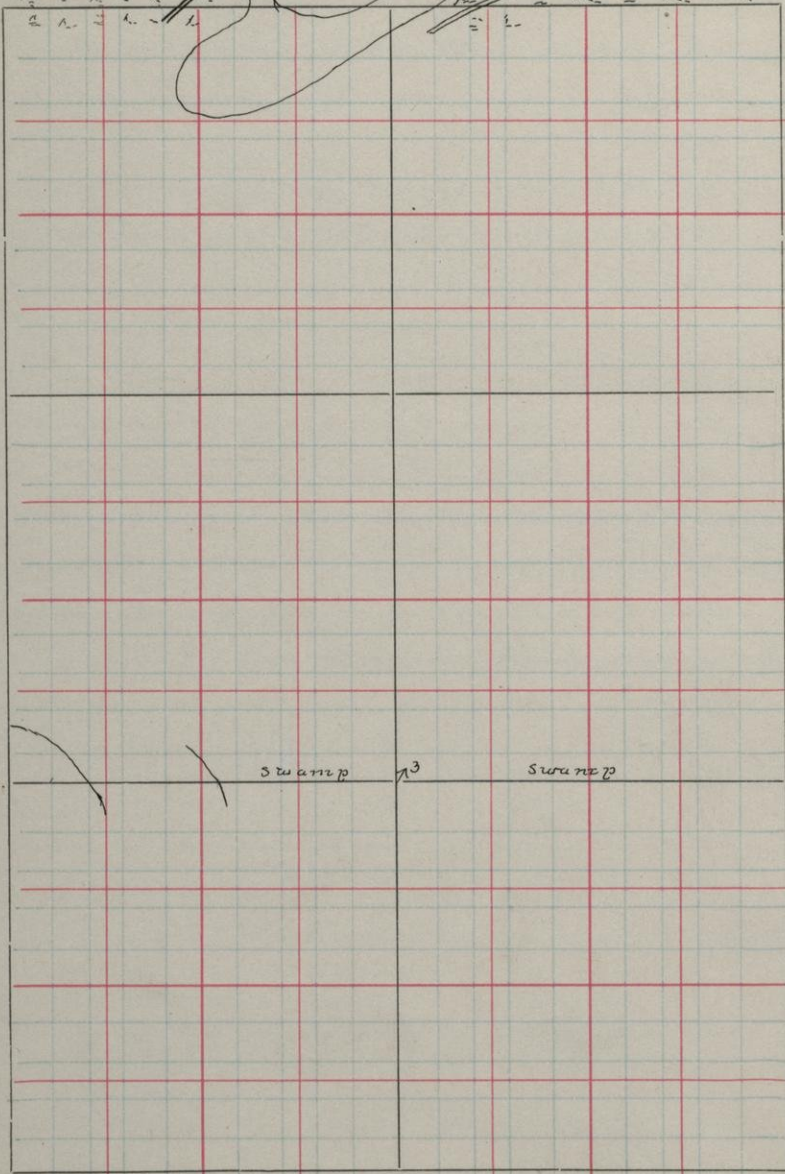
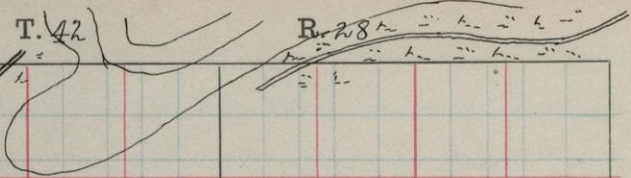
S.W. 16

T. 42

R. 28

h h h h
a a a a

h h h h
h h h h



S w c r.

Swamp

3

Swamp

S 1/4

T. 42 R. 28

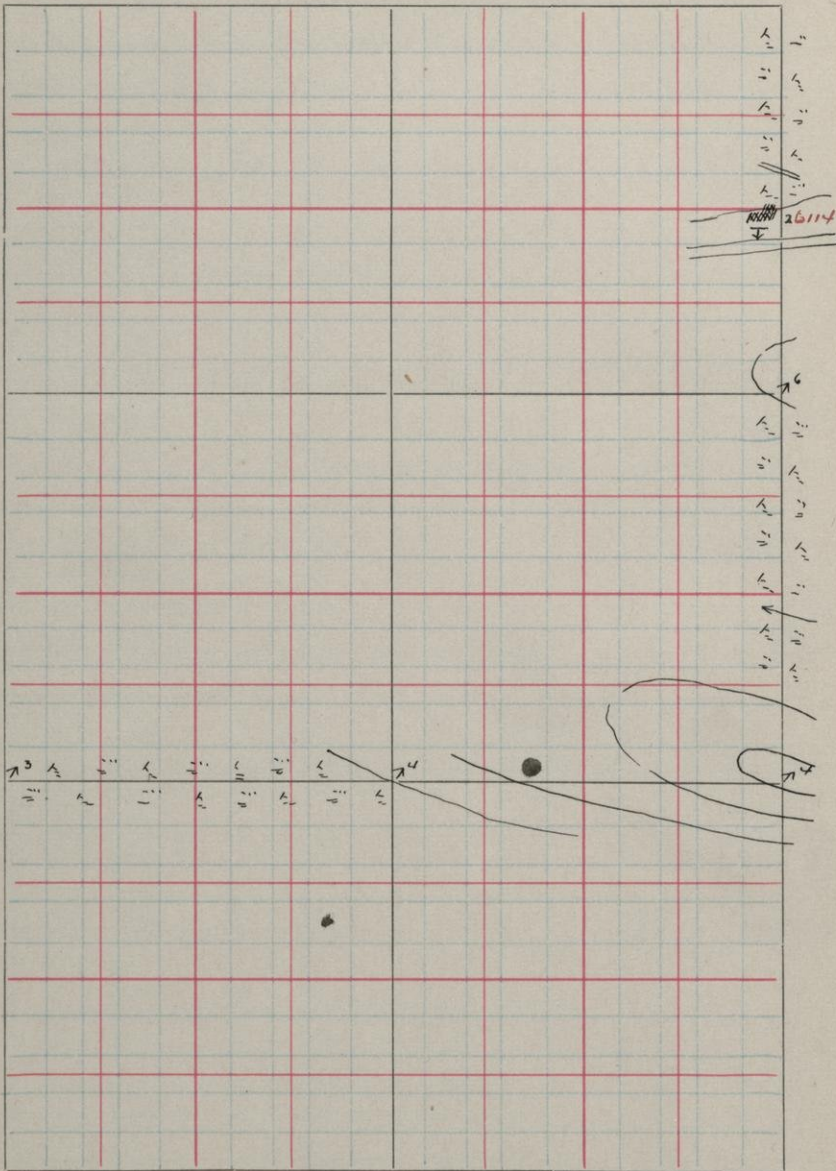
S line of SW $\frac{1}{4}$ Sec 16 crosses no
rocks

N line of SW $\frac{1}{4}$ Sec 16 shows no rock.

S.E. 16

T. 42

R. 28



T. 412. R. 28

No rocks along S. side of Sec 16.

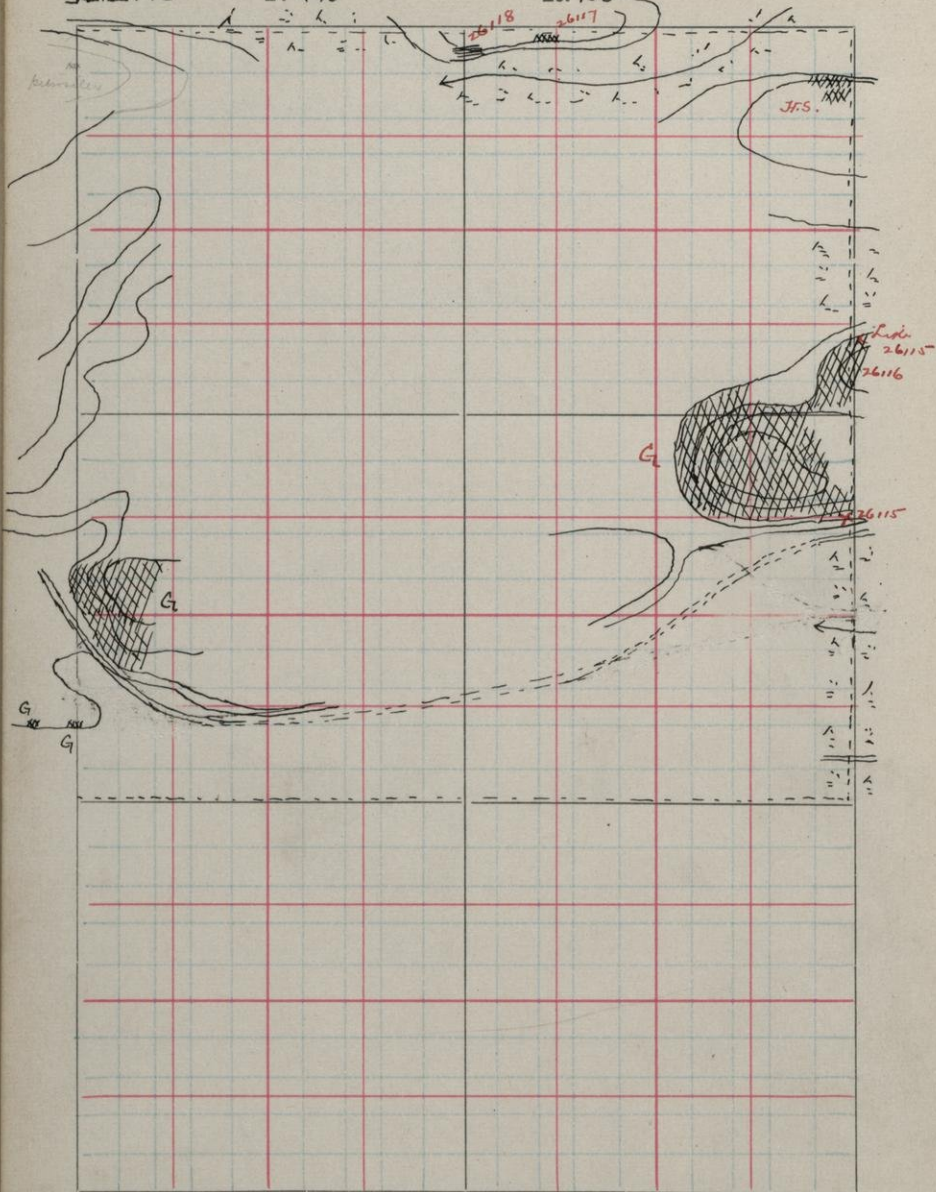
Along E side runs a ledge at

26114 750 ft of O.C. Cr. The ledge consists of
a very fissile limestonoid schist.

N.E. 16

T. 42

R. 28



J. 42 R. 28

The E line of NE $\frac{1}{4}$ Sec 16 crosses a great hill of Diabase at 1400-1600 ft of SE cor Sec,

26116

The rock is mainly a Diabase cut by quartz veins. It is coarse grained gray, and it exhibits the Diabase structure in a weathered surface.

26115

On the South side of the hill it is fine grained and dense and is banded like the acid rock 26112.

Well down on the north side of the hill the ribbon, dense variety is again found. It looks more as though the Diabase is intruding in the banded rock, than that latter is a peripheral phase of former.

From blende schist is at 1950 ft.

26117

Along the north side of the $\frac{1}{4}$ Sec. crossed a light colored and banded acid rock, like granite, at 400 W of NE cor Sec 16,

26118

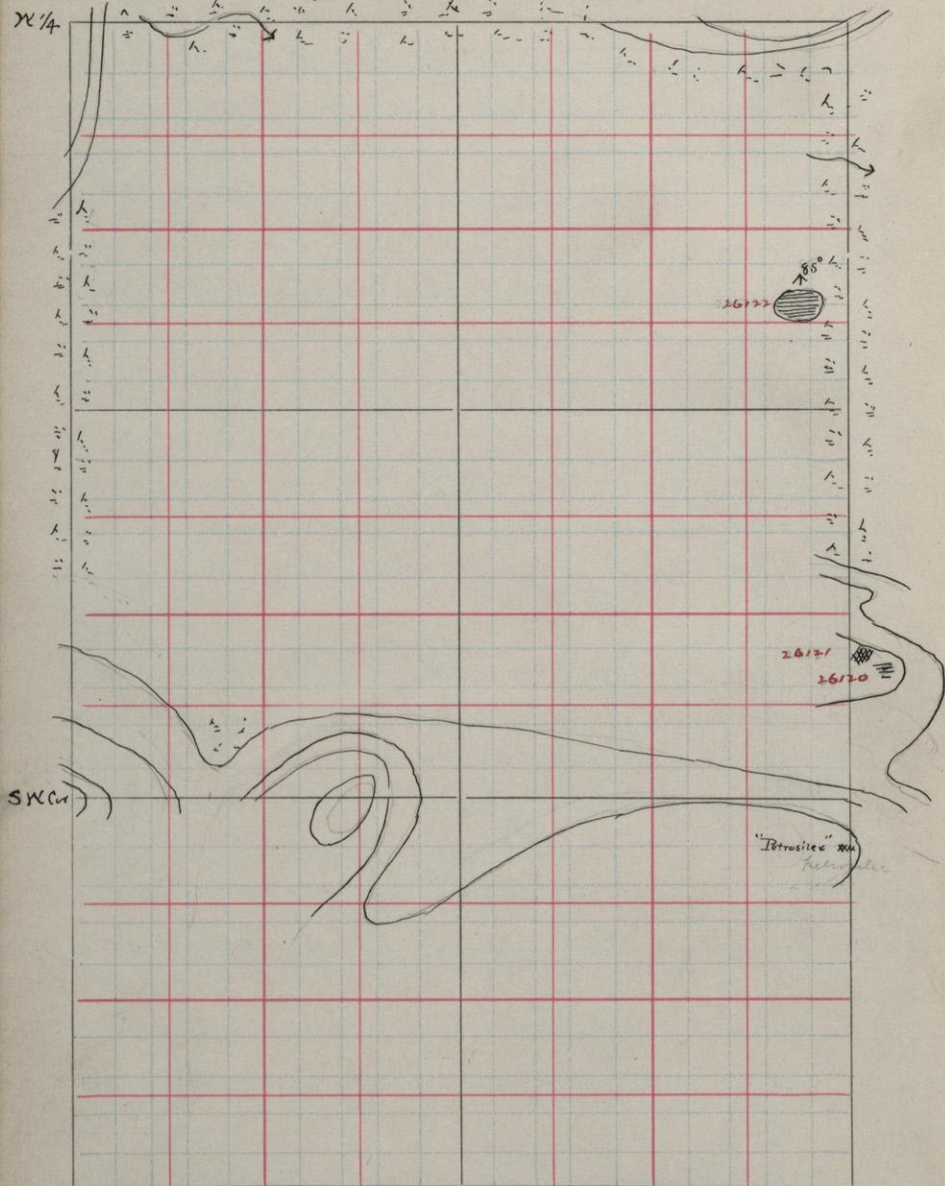
and at 500 W. at base of hill a fine grained acid rock resembling a 'peridotite'. Its band strike is $21-40^\circ E$ and dip vertically.

S. W 9

T. 42

R. 28

N 1/4



SW Cr)

"Petrosite" mks

J. 42 R. 28

The N line of the SW $\frac{1}{4}$ 16 shows no rock.

For map see p.

The W line of the NE $\frac{1}{4}$ 16 crosses greenstone as indicated by Map. p. 16.

26119

p. 12.

The South line of SW $\frac{1}{4}$ Sec 9 crosses no rocks.

The E line of the SW $\frac{1}{4}$ Sec 9 is mainly through swamps.

26120

At about 200 N. 95° W of SE Cor Sec, however, are two ledges on the slope of the hill. One

26121

is banded dense mica schist, and the other a banded hornblende schist marked with reddish bands, like red quartz etc.

26122

At 685 N and a little west of the SE part of the section, in the swamp, is a low knob of squeezed conglomerate, like that at the Dam to be described later. It strikes N 75° E and dips 85-87° N.

The W and N lines of ^{SW $\frac{1}{4}$} Sec 9 cross no rocks.

N.E. 9

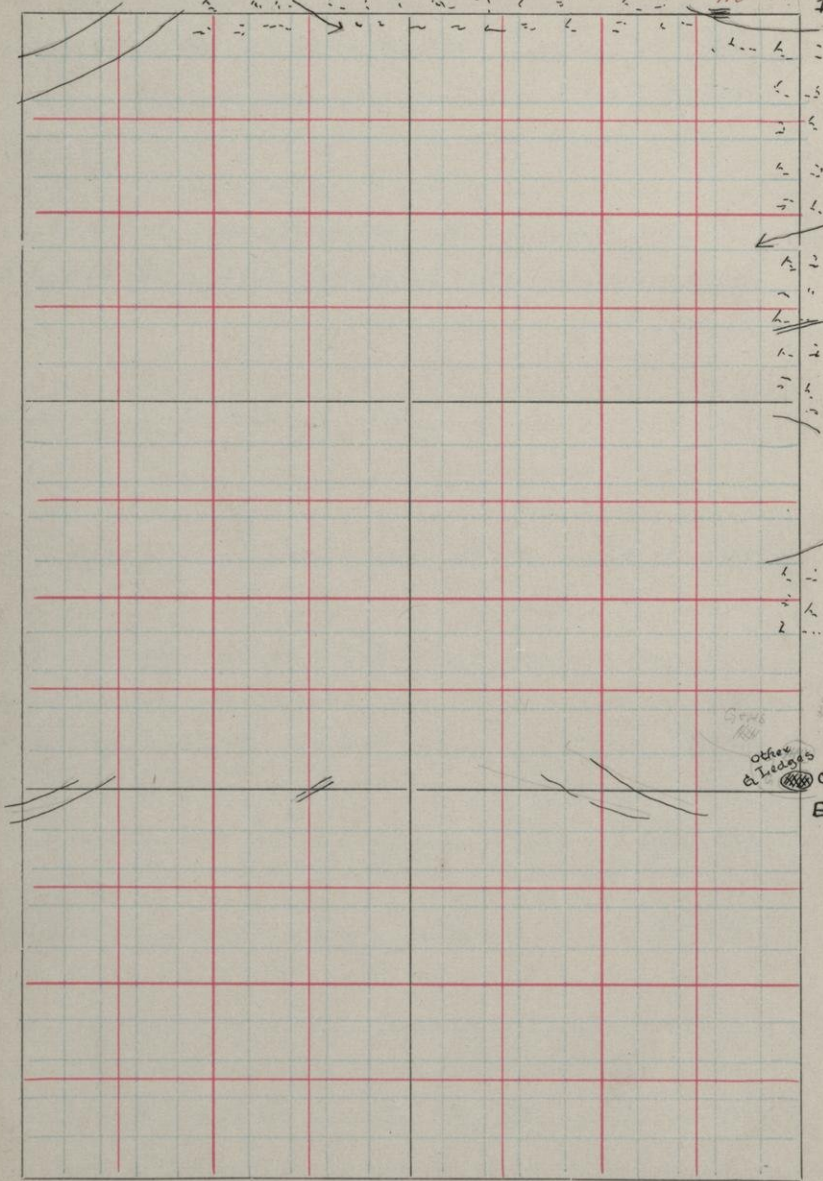
T. 42

R. 28

m = 20.10

m

N.E. Sec.



Other
 & Judges
 Ca
 E 1/4

J. 42-29

The S. line of the N.E. 1/4 Sec 9 is over swamp
most of the way. Just W of the E. 1/4 part
of the section, however, is a group of green
stones and hornblendes (chert?), the latter
of which may represent the basement
complex.

The E line of N.E. 1/4 Sec 9 crosses no rocks
until it passes the corner (N.E.), where
its extension cuts two ledges of a flesh
26123 colored marble at 75 W, and 100 W of
S.E. cor Sec 9. Strike 10° W of E. Dip 74° S.

No rocks other than a single marble
ledge was seen in N line of this 1/4 Sec.
The marble like that of Campbell, is at
150 W. of N.E. cor Sec 9

26124 p. 21

to

26158

S. 1/4 #

T. 42

R. 28

S. 1/4

S. 1/4

S. 1/4

J. 42-28

The 0. line of SW $\frac{1}{4}$ Sec 4. Crosses no rock
ledges.

The 11 line of SW $\frac{1}{4}$ Sec 4 crosses no rock.

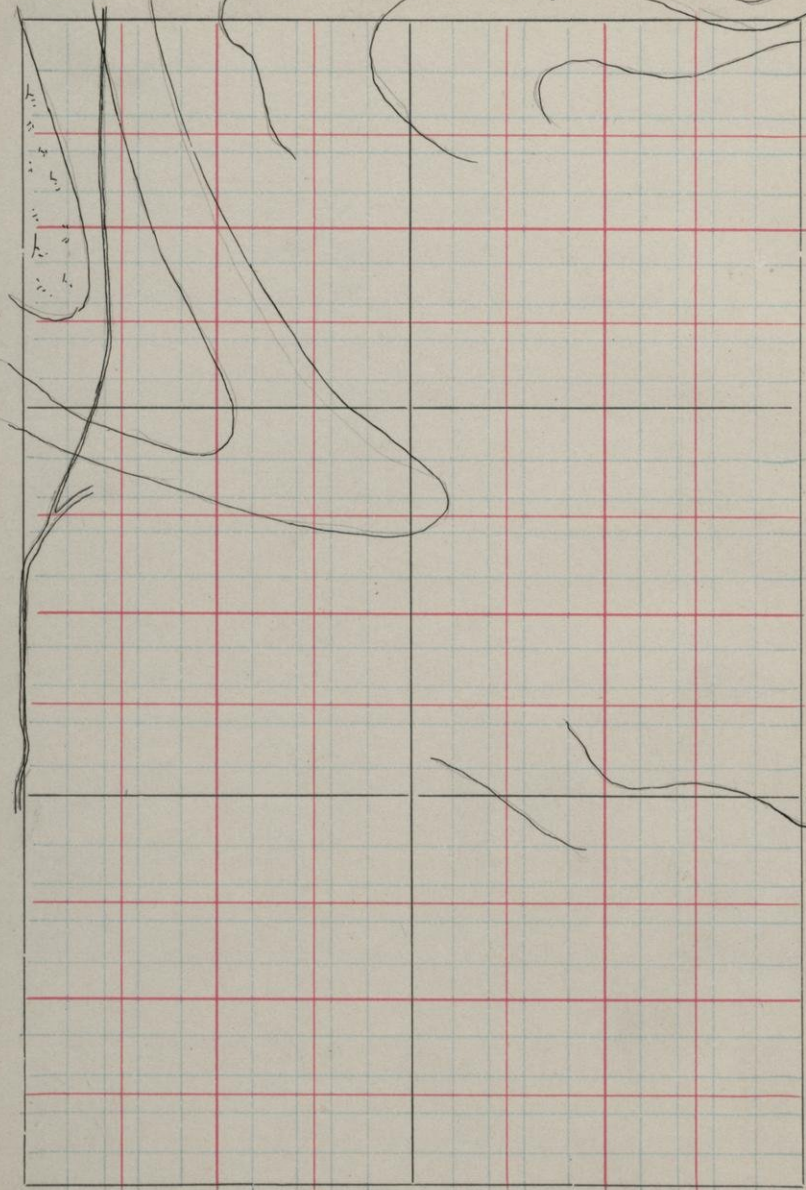
The 11 line of SE $\frac{1}{4}$ Sec 4 crosses no rock.

S.E. 55

T. 42

R. 28

E 1/4



J. 42. R. 28

The S. line of SE 1/4 Sec 5. crosses no rocks

The W line of SE 1/4 Sec 5. crosses no rocks

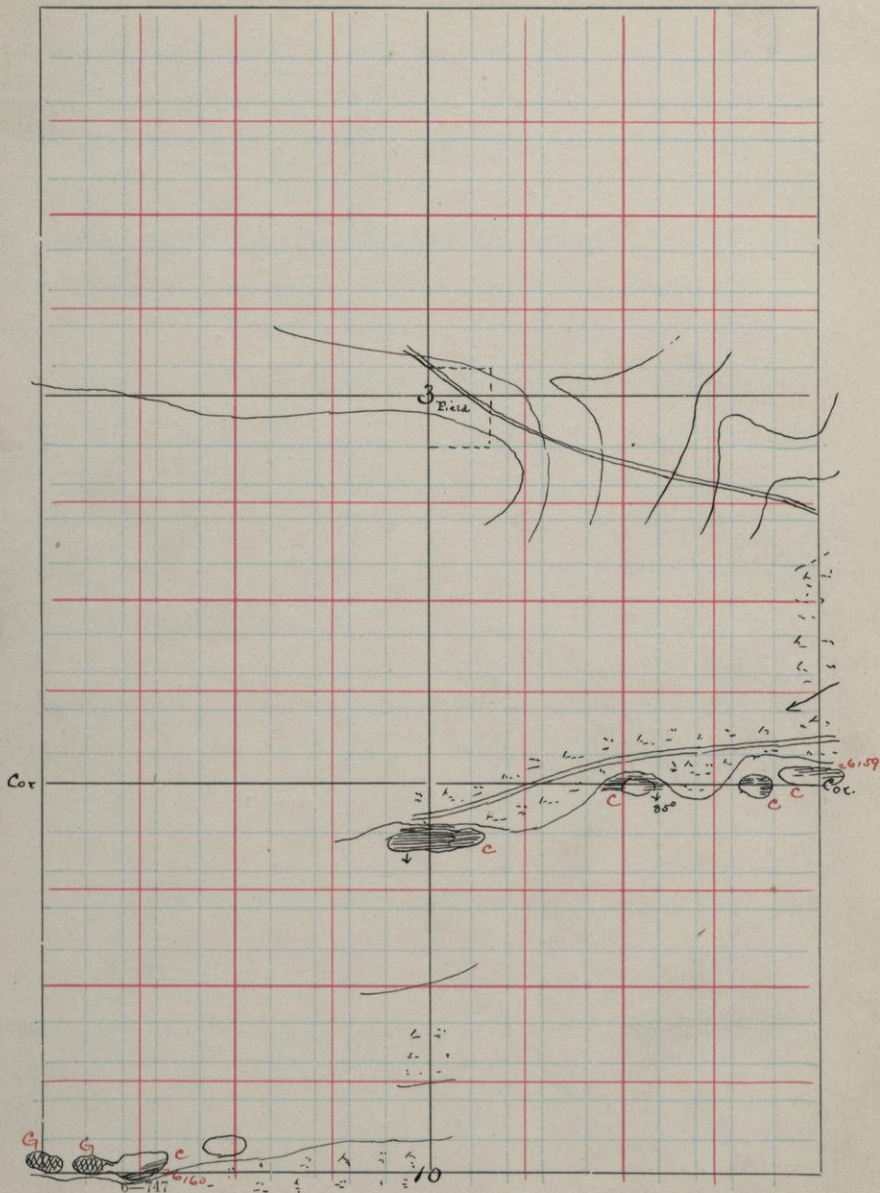
The N line of SE 1/4 Sec 5. crosses no rocks

The N line of

S. $\frac{3}{10}$ 14 8

T. 42

R. 28



The E. W. center line of Sec 3. 42-28
crosses no rock.

The East line of the section from the E 1/4
past to the SE cor crosses no rock until
the corner is reached. There is a ledge of
the Schistose conglomerate like that found
in the Swamp (SW Sec 9). It is not quite
so conglomeratic as this rock, being more
nearly a schistose recrystallized granite.

26159 Specimen from 75 ft of SE cor Sec 3.

Strike 120° N of E. Dip vertical.

The same rock extends all the way to the
S 1/4 part of the section.

Near the NW 1/4 Sec 10. Several knots of
greenstone are found. At the East end of
one of these knots, at 730 W. of Center
Sec 10. is schistose conglomerate again.
This is on S.E. side of greenstone, hence
later rocks are probably Algonkian.

26160

Strike of conglomerate 20° N of E. Dip nearly
vertical.

The west end of knot is greenstone and
greenstone schist.

26161

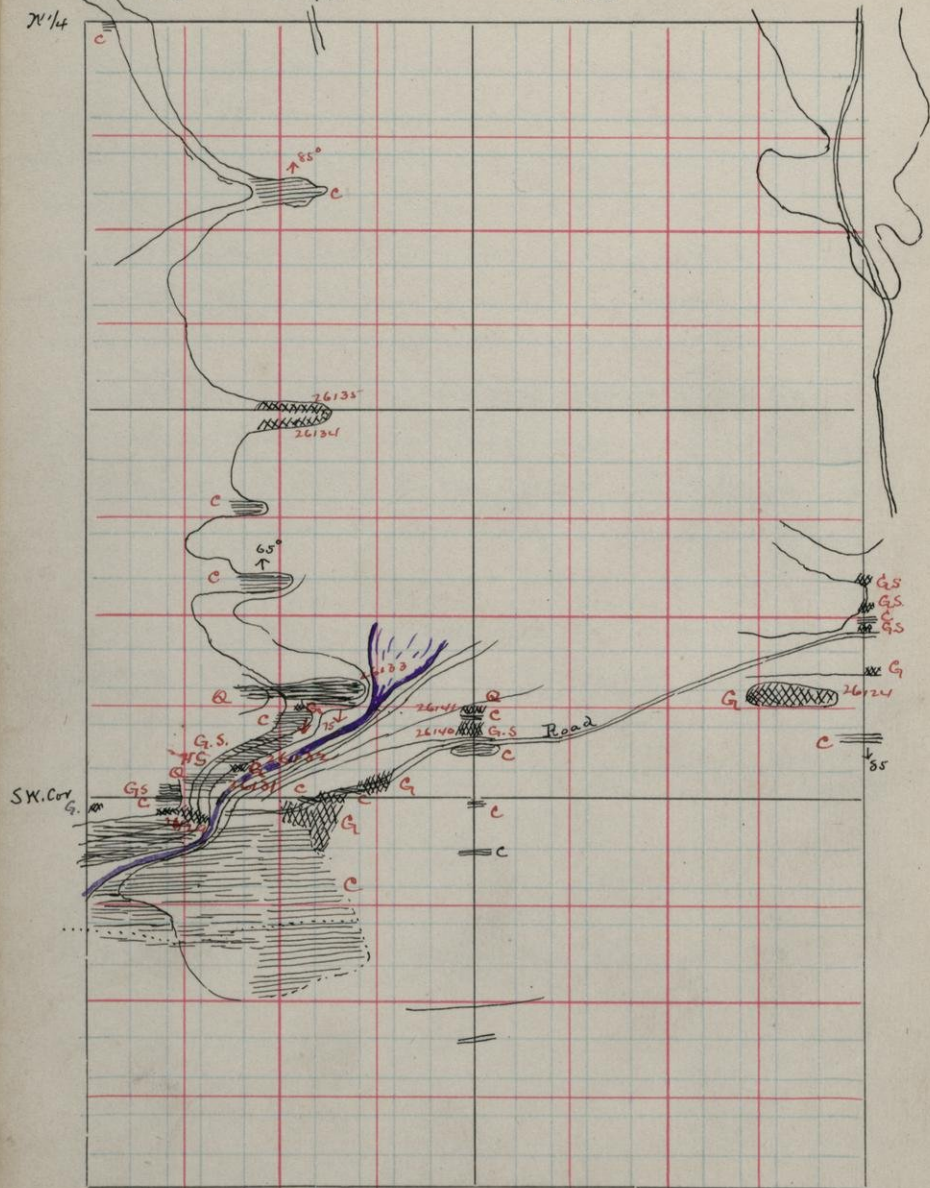
p. 37.

S.W. 8

T. 42

R. 28

N¹/₄



In the SW $\frac{1}{4}$ Sec 8. T. 42 R. 28 we find the best exposures of the Conglomerate? Both sides of the Sturgeon River from the Dam, both up and down stream, are composed of greenstones and conglomerate; the best conglomerate being S. of the Dam. At 80 U. of S $\frac{1}{4}$ Sec 8. is a rather small ledge of the Conglomerate, with a sandy quartz matrix, and pebbles of quartz and granite. It strikes 15° N of E and dips 85° S.

26124

At 145 U. is a long ledge of greenstone

26125

Schist, which in a fresh fracture is less

15

26127

the mottled

p. 25-27

26129

See page 27

26130

The west bank of the river above the Dam is principally greenstone and hornblende schist. Immediately

26131

North of Dam, well up on the bank is a dense dark rock (marked "Q") which is either a quartzite or a dense hornblende schist

26132

North of this is greenstone, and north of this a greenstone or hornblende schist, again resembling quartzite?

This apparently passes westward

into greenstone schist.

At about 150 paces up stream from the Dam Conglomerate begins. This conglomerate strikes 10° S of W and dips South at a high angle.

26133

At 150 ft of S. line of Sec. is a ridge of dark rock resembling 26132. It is in all probability a quartzite. Its band strike E to W and dip. 45° S. North of this in the same ridge is a little conglomerate with a quartzite matrix, striking and dipping like the quartzite.

At 500 ft. 250 E of SW cor Sec 8 is a knob of Diabase, which on its South side is schistose and seems to be involved with the conglomerate, at least what is taken to be a schistose greenstone contains large nodules and stringers of quartz and quartzite. The Diabase looks like a dyke or like a few, following in either case the bedding of the conglomerate.

26134

26135

Massive Diabase from north side of hill.

26136-39 p. 28

At 800 N. 230 E of Sw cor Sec 8, is another ridge of reamorphosed granite, or granitic sandstone. On south side of the ridge, the layers are slightly curved, the general dip being almost vertical, but inclined to the south. The main dip however is 85° N.

26140 At 500 E. 80 N. of Sw cor Sec. 8, is a ledge of greenstone schist just north of the road

North of this and in contact with it is a conglomerate, and north of this at

26141 500 E. 125 N. is a quartzite, composed largely of epidote, hornblende and quartz - thus resembling very much the peculiar quartzite (26133) of which this is an eastern strike.

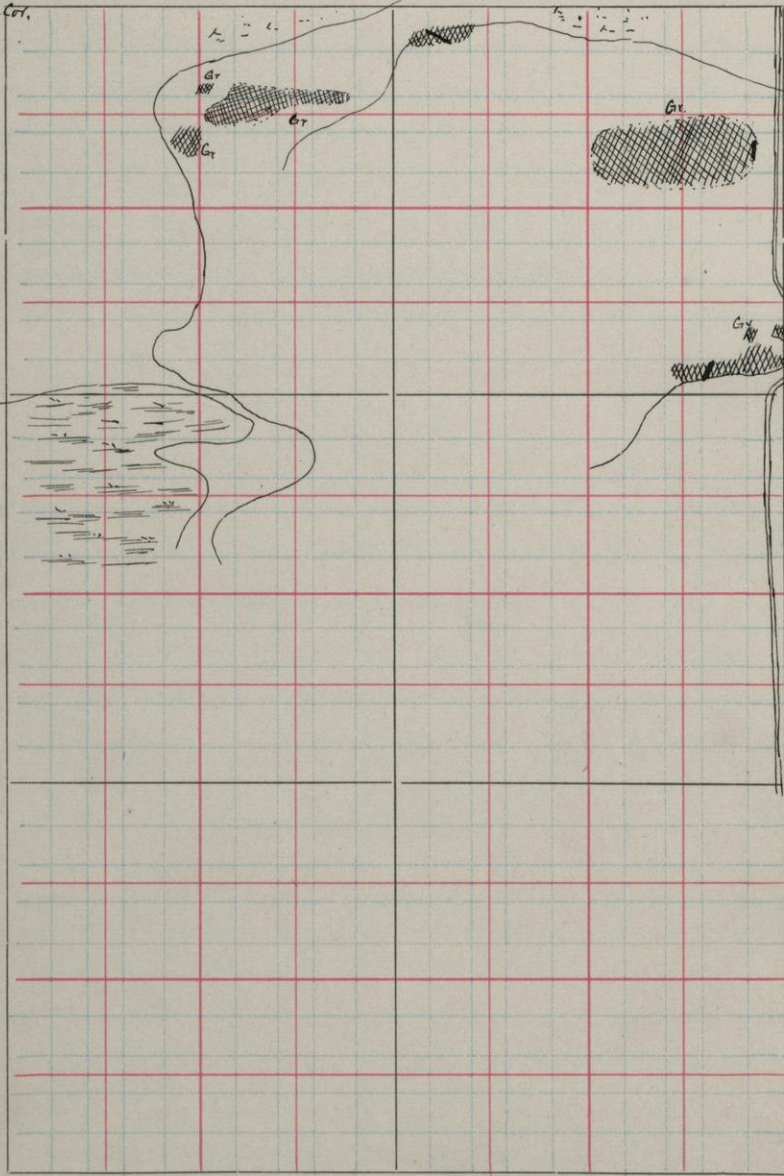
The greenstones seem to cut the conglomerate in all directions, following preferably a direction parallel to the strike of the layers. That some of the greenstone is not interleaved with the conglomerate is shown by the relations of the two rocks as seen at 300 E. 50-100 S of Sw cor Sec 8. Where a knob of green-

N.W. 8

T. 42

R. 28

N.W. Cor.



N.W.

T. 42 R. 28

stone cuts off the conglomerate in its strike. This greenstone is exactly like the other greenstones of the region. The natural inference is that they are all intrusives.

In the north half of the T. W. 1/4 Sec 8 the only rocks observed were red granite. The granite is slightly schistose and at first sight it resembles the fine grained schistose conglomerate. They are distinguished, however, by the fact that the granite contains porphyritic crystals and 'eyes' of feldspar, whereas the eyes of the conglomerate are mainly quartz lenses.

26125

At 669 N of Cen. Sec 8 is one ledge of the granite. Here the schistosity is a triple N of E. and its dip apparently high to the north.

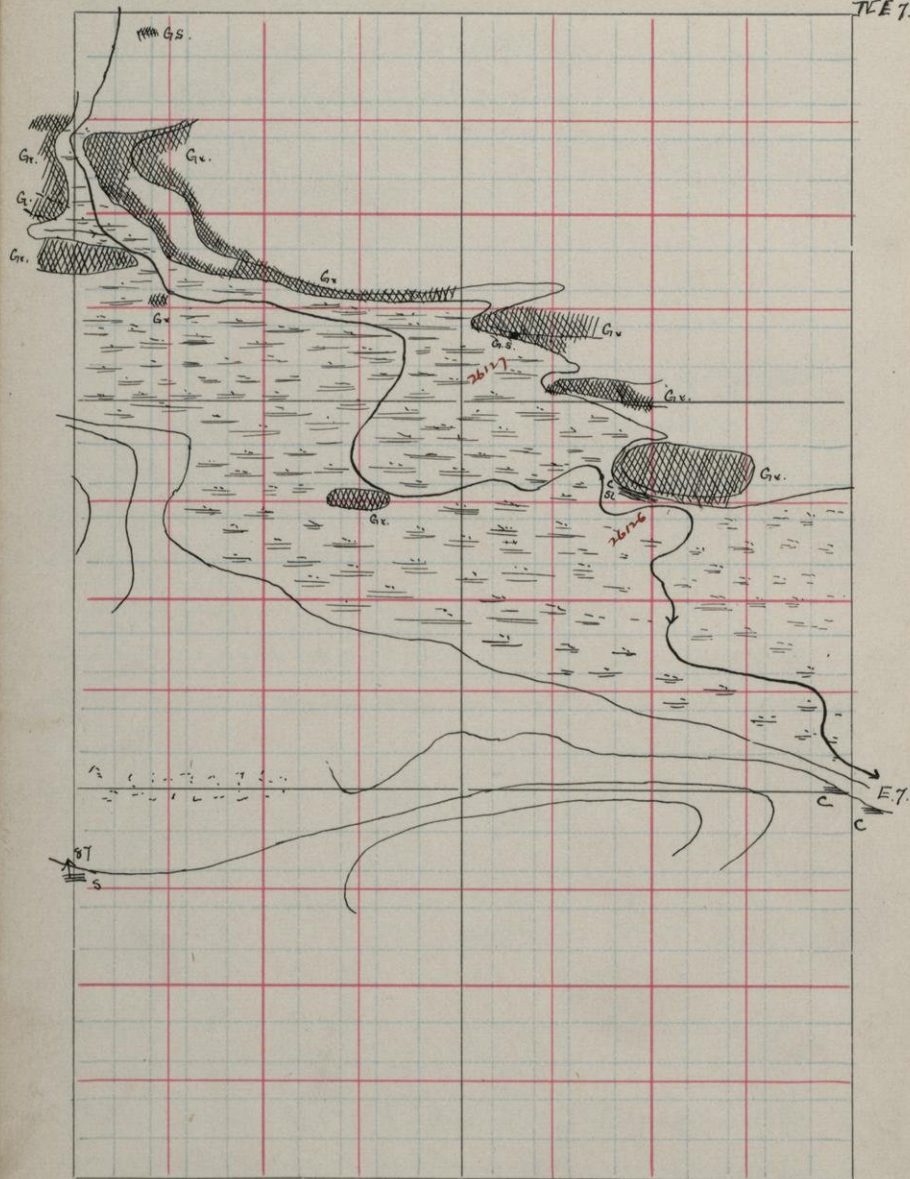
At 800 N to W. of Cen. Sec 8 begins another ledge of same rock. It is cut by greenstone dyke of small size, and is involved with small quantities of schistose greenstone or with hornblende schist.

N.E 7

T. 42

R. 28

N.E 7.



J. 42 R. 28

The $2\frac{1}{2}$ Sec 7, J. 42. 28 is mainly granitic as indicated on the map - the northern half of the Section being almost solid granitic ledge like the granites in Sec 8.

At 630 S. and 200 W of $2\frac{1}{2}$ Sec 7 on the South side of one of the largest of these ledges, one that can be seen for several miles from the South and West, and at its base is only contact seen between the granitic and the sheared conglomerate. The exposure is small, but the rock is unquestionably

- 26126? Conglomerate? It strikes 30° 0° E and dips high to the north. It is closely associated with a black banded rock that seems to be slate.

- 26127 All the exposures N & W of this are of granitic. At one point it is cut by a banded schistose greenstone that resembles slate.

Massive greenstone dykes cut the rock in many places.

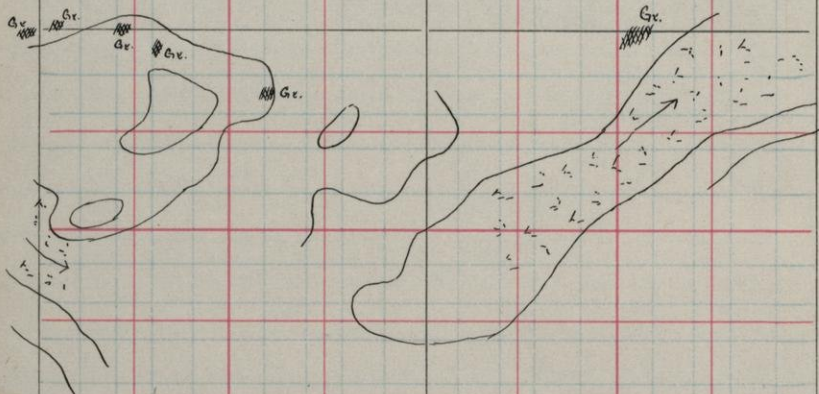
N.W. 7

T. 47

R. 28

N.W. Cor

Granite Ledges



N.W. C.

J. 412 R. 28

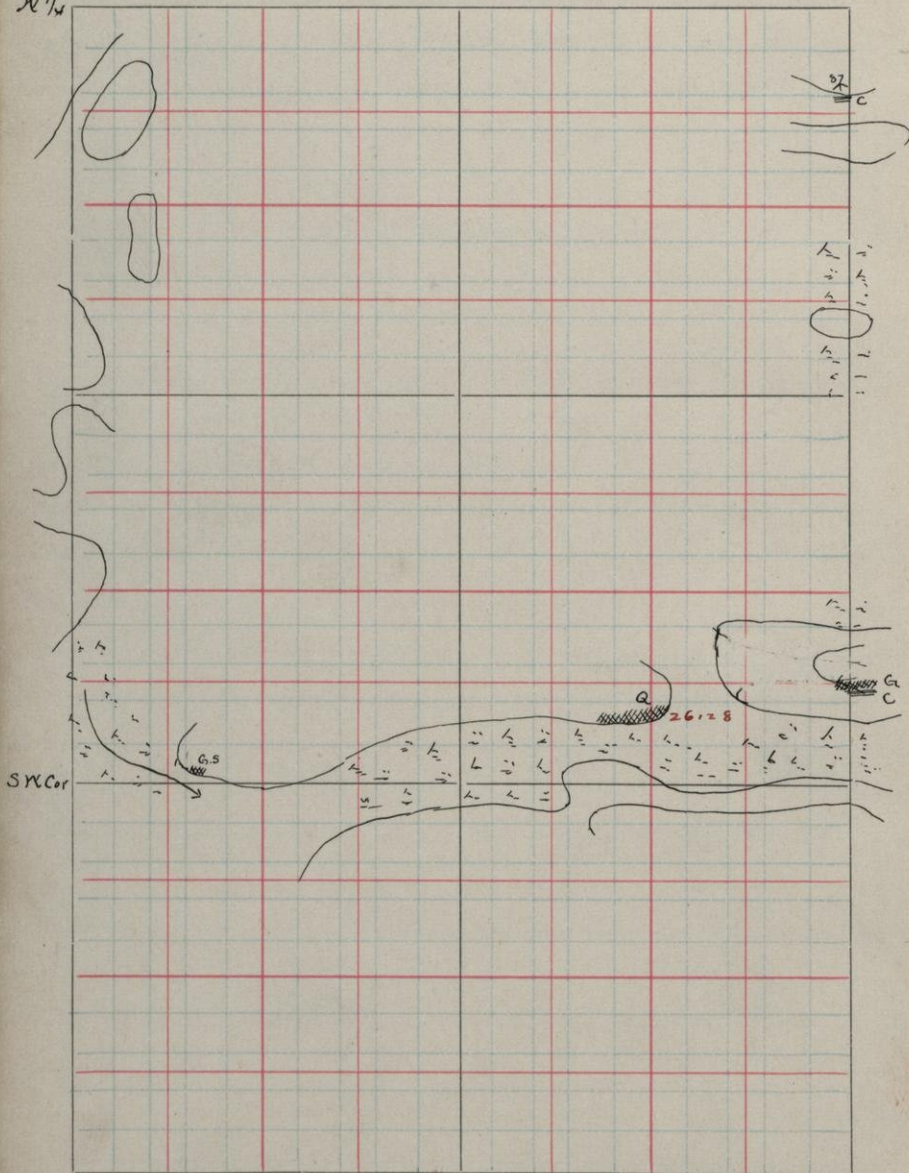
In the S. 1/4 of NW 1/4 Sec 7. a few ledges
of the usual red granite were located.

S.W. 7

T. 42

R. 28

20/14



J. 42 P. 28

In the SW $\frac{1}{4}$ of J. 42 P. 28 is a
 26128 ledge of dark quartzite^d, weathering red
 like the finer conglomerates. The layers are
 badly outtiled^d but the general strike is
 E-W. Dip could not be determined. In
 some places it is as low as 35° W.
 Loc. 175 N. 1300 W of S.E. cor Sec.

26129 Greenstone from hill west of Dam, near
 N.W. cor Sec. 7, J. 42-28. Dip in conglomer-
 ate^d.

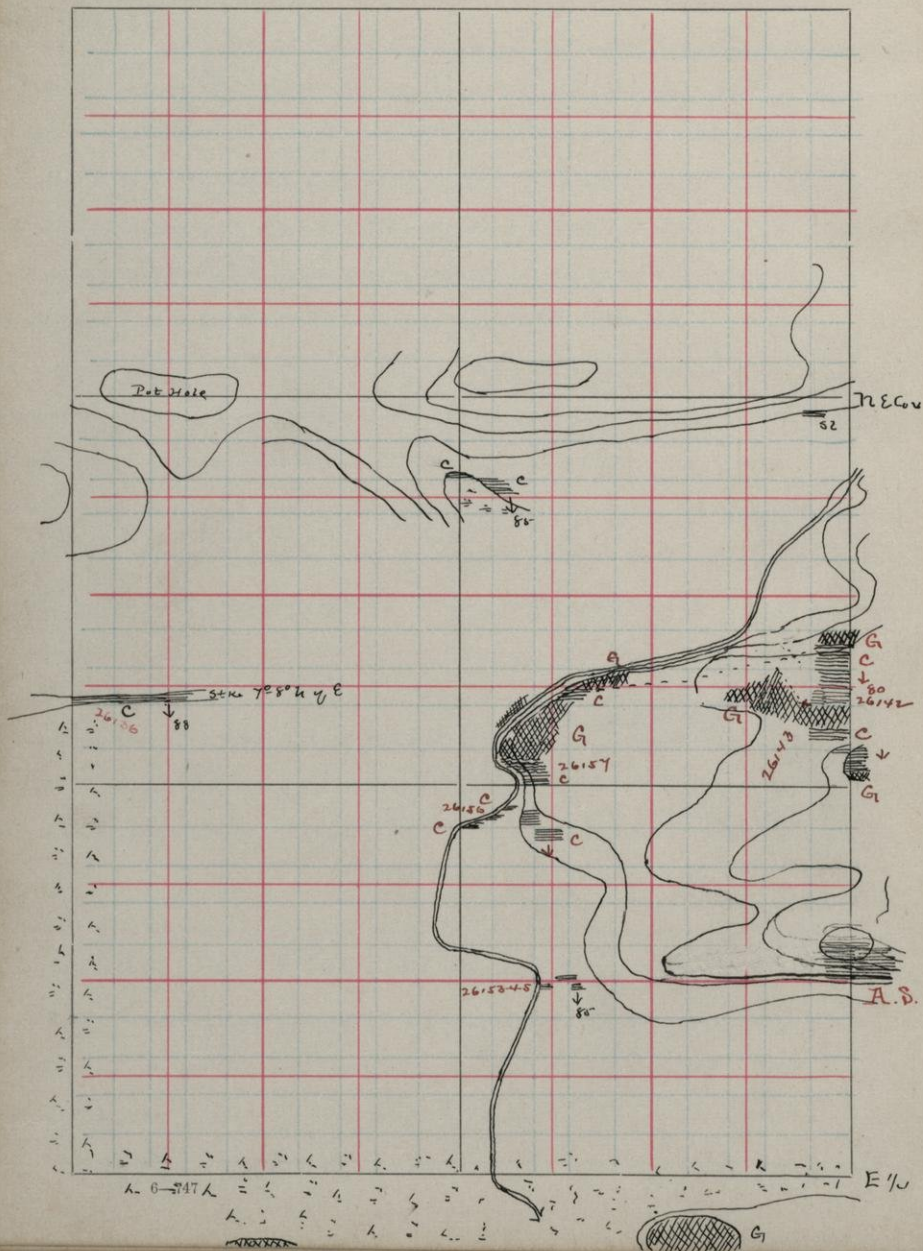
26130 In places the greenstone is Ochistose to a
 high degree when it becomes a chert^d
 chert.

The South line of the NE $\frac{1}{4}$ Sec 7 contains
 no rocks other than two conglomerate ledges
 at the E $\frac{1}{4}$ post.

Map. p. 25.

The E line of the SW $\frac{1}{4}$ Sec 7 carries a ledge
 of friable conglomerate^d at 200 paces S of cen-
 ter and a ledge of greenstone and conglom-
 erate^d at 200 N of S $\frac{1}{4}$ post.

26131 p. 21
 26135



J. 112 R. 28

On north line of T. E. 1 to 18 J. 112 R. 28
found ledges of conglomerate around
a swamp, south of the 1/8 post and
a small ledge of slate near the U. E. Cor.

On the East line of T. 1/2 Sec. and along the
Sturgeon River, however, ledges are plen-
tiful

Along the west side only no ledge was
26136 seen - at 400 S of U. E. Cor. where there
is a perpendicular ledge of fine grained
feldspathic quartzite

26137 p. 30

26140 See page 23 and

South of the S. line are two knots of mas-
sive greenstone in swamp.

From 300 - 500 S. of U. E. Cor Sec 18 is a series
of conglomerates, recrystallized granules and
greenstone bluish.

26142 Recrystallized granules from 370 S of U. E. Cor 18

26143 Greenstone Schist " 400 S. 206 S "

The rock's all dip south, the amount of
dip where it can be measured being
80° - 85°

26144-152 73

Neaps p. 28.

J. 412 R. 28

At 700-750 S of NE cor Sec 18, is the west end of a bedded schist resembling an actinolite schist, described further under 26137-26139.

At 248 N. 610 E of center Sec 18, on the river, is a ledge of peculiar rocks making into the river. They seem well banded and bedded, but appear to be greenstone. They resemble on a fresh fracture the actinolite schist on their strike to the east.

- 26153 The main mass of the rock is a cherty schist. This is banded with a more re-
- 26154 sisting quartz-greenstone schist, and
- 26155 with ridged bands of a cherty looking rock. It looks as though these rocks represented an iron formation in which an chlorite-actinolite schist is the predominant member.

At 450 N. 520 E of center the finer grain and phases of the conglomerate occur. There are interbanded with a darker sandstone and with bands of a crystalline rock resembling an amphibolite schist.

26156

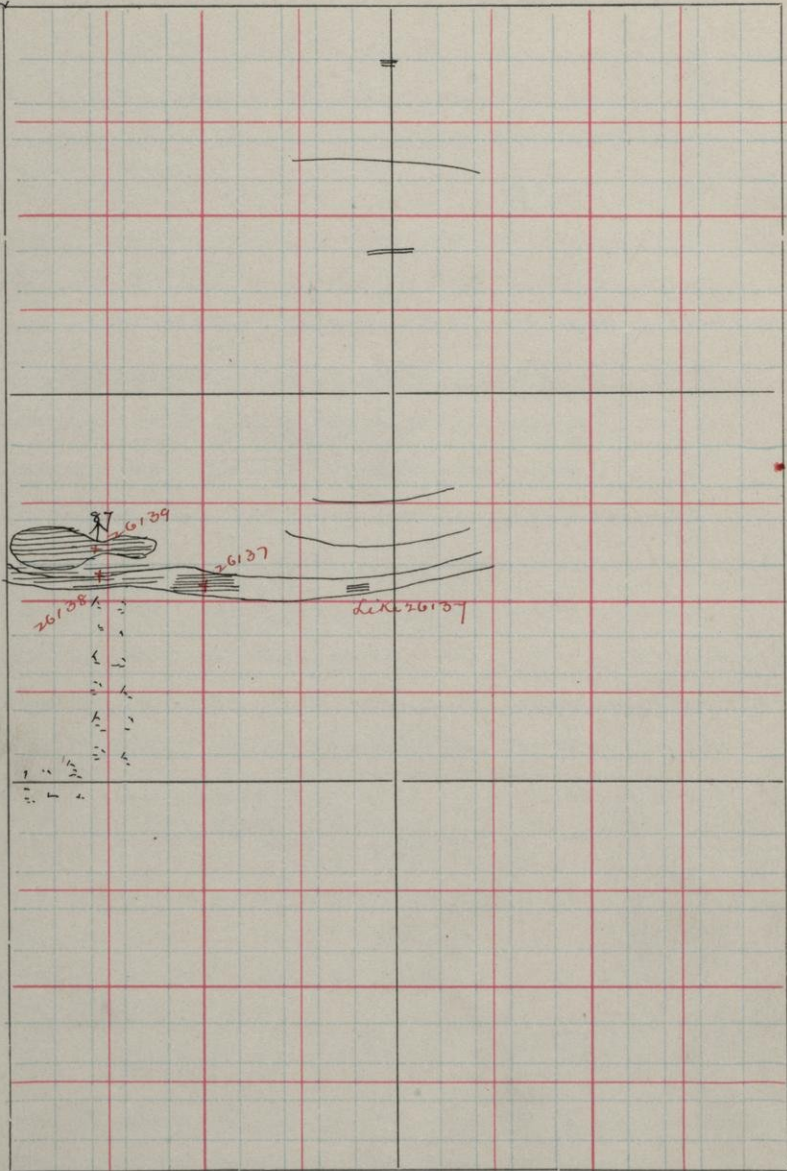
Specimens of the feldspathic sandstone, et

N.W. 17

T. 42

R. 28

N.W. 17



N.W. 17

1	1/2
2	1/2
3	1/2
4	1/2
5	1/2
6	1/2
7	1/2
8	1/2
9	1/2
10	1/2

Map. p. 28

T. 42 R. 28

fine grained conglomerate between
Schist bands.

Greenstone knots and conglomerate
layers alternate as river is ascended.
At the center of the N.E. 1/4 Sec. 18. the
south side of fine grained greenstone
26157 knots is bordered by a chlorite schist
spangled with chlorite plates.

26158 p. 36.

N.W. 1/4 Sec 17. 42-28.

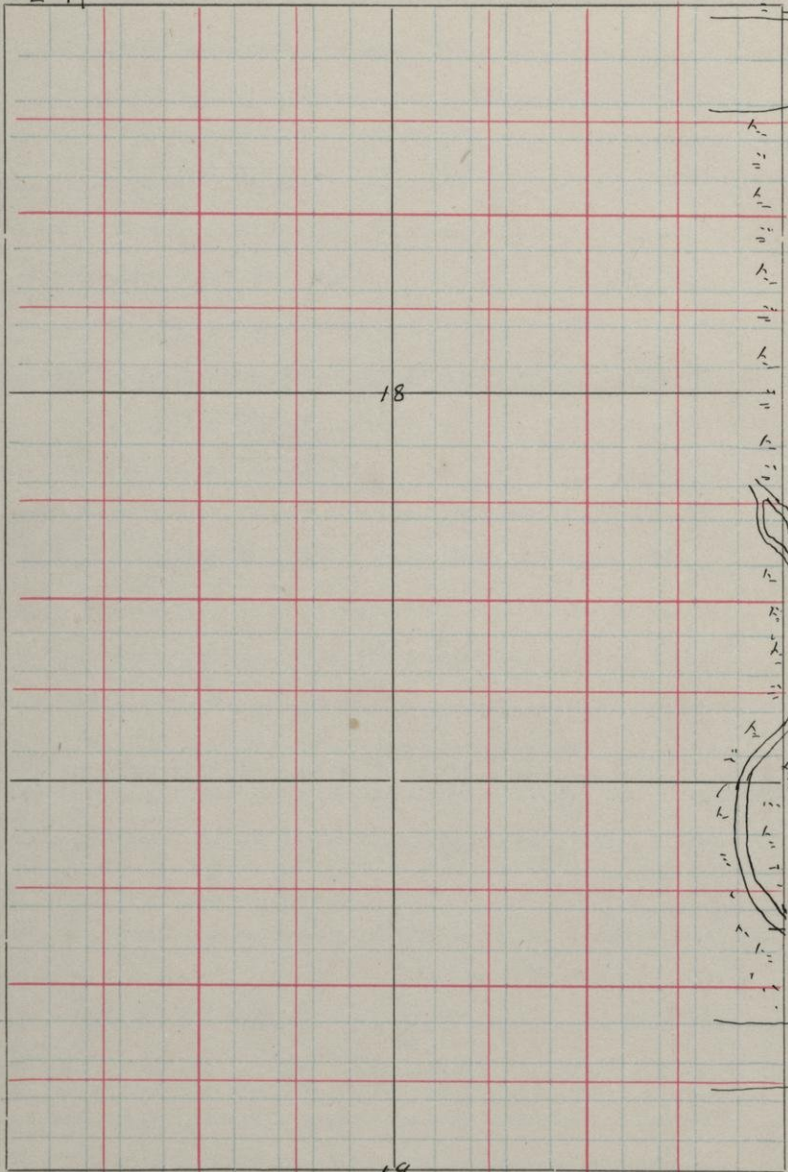
at 200 E 300 N of 0 1/4 p. Sec 17, west of
swamp is a large E.W. south facing
ridge of rock and sand, with rock striking
E.W. and dipping very high, nearly ver-
tically to the north. In places the rock
26127 is much decomposed, when it resembles
one of the younger actinolite schists of the
Marquette range. On the high bluff,
further west the rock is better pre-
served. The schist is in contact with
26138 a fresher quartzitic rock, which some-
what resembles the Humboldt Mt. Acti-
olite schist. Specimen shows interstratified
flint and the rock like 26137.

26139 Some layers contain lenticles of white

S.E 18
N.E 19

T. 42

R. 28



S 1/4

SE Cor

J. 42 P. 28

quartz or feldspar that show plainly
 on a weathered surface, like a squeezed
 conglomerate, but which is probably
 composed of squeezed and drawn-out
 quartz layers.

The E line of the SE $\frac{1}{4}$ Sec 18 and the
 N. half of the E line of NE $\frac{1}{4}$ Sec 19
 are mainly through swamps.

26140

6

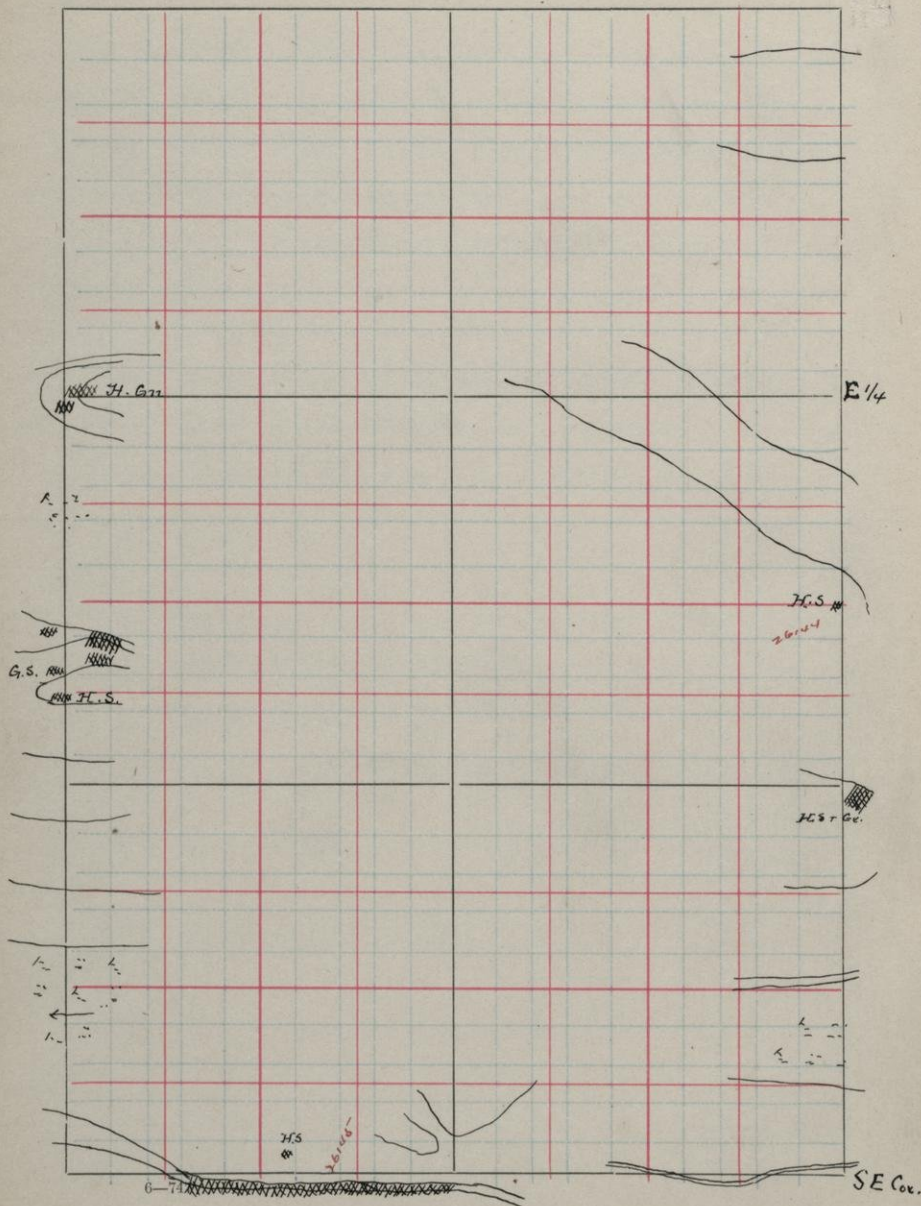
26143

p. 23.

NE 19
SE 19

T. 42

R. 28



The S half of NE 1/4 Sec 19 (East line)
is also in swamp or over sand hills.

The East, south and west lines of
this 1/4 Sec. however, are over Horn-
blende schist^o and granite^o.

26144 At 250 S of the E 1/4 part of Sec 19 is
a small ledge of hornblende-schist.
And at 500 S. are ledges of schist cut
by granite^o.

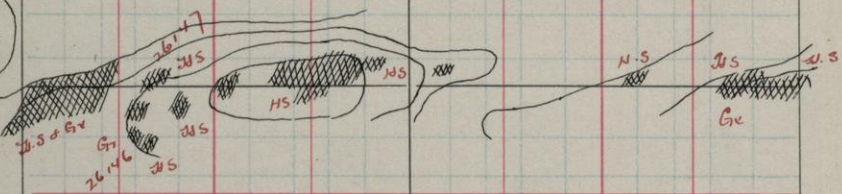
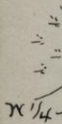
26145 From 500 to 900 W of S E cor of
Sec 19, the S. line is bordered to the
south by a ridge of hornblende schist
or gneiss cut occasionally by gran-
itic veins. These rocks belong in all
probability^o with the basement complex

NW 19

T. 42

R. 28

NW Cor



J. 42 P. 79

The run from the Lewis sec 19 to the
the W 1/4 post is all the way over the base-
ment complex which is well exposed.

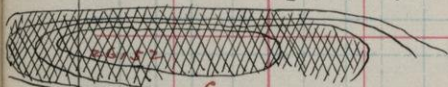
At 850 W of Lewis is a large exposure
26146 of a white granitic, coarse and pegma-
titic looking. It cuts hornblende
26147 gneiss.

S.W. 18

T. 42

R. 28

W 1/4	1	2	3	4	5	6	7	8	9	10	11	12
1	2	3	4	5	6	7	8	9	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	26



26157

C₂

1
2
3
4
5
6
7
8
9
10
11
12

26150

26148-9

80

S.W. Cox

J. 42. R. 28

A little Knoll at 82 N, 20 W. of S.W. Cor
 Sec 18, shows, under the moss, a schis-
 tise black rock, like a Lomblende-
 schist. On the north side of the Knoll
 is also a banded rock, which weathers
 red and resembles somewhat the 'acti-
 vete schist' further East. Can not
 decide whether a clastic rock or not.
 As well as could determine the
 strike of the banded rock is 20° S of W.
 and its dip 80° S.

26148 The Lomblende schist.

26149 The banded rock.

A little to the north of this Knoll is
 another from which a fresher speci-
 men was taken

At 822 N of S.W. Cor of this same Sec.
 is the south face of a high rough bluff.
 On its south side is a dark hard
 rock that is taken for a quartzite?
 or a gneiss

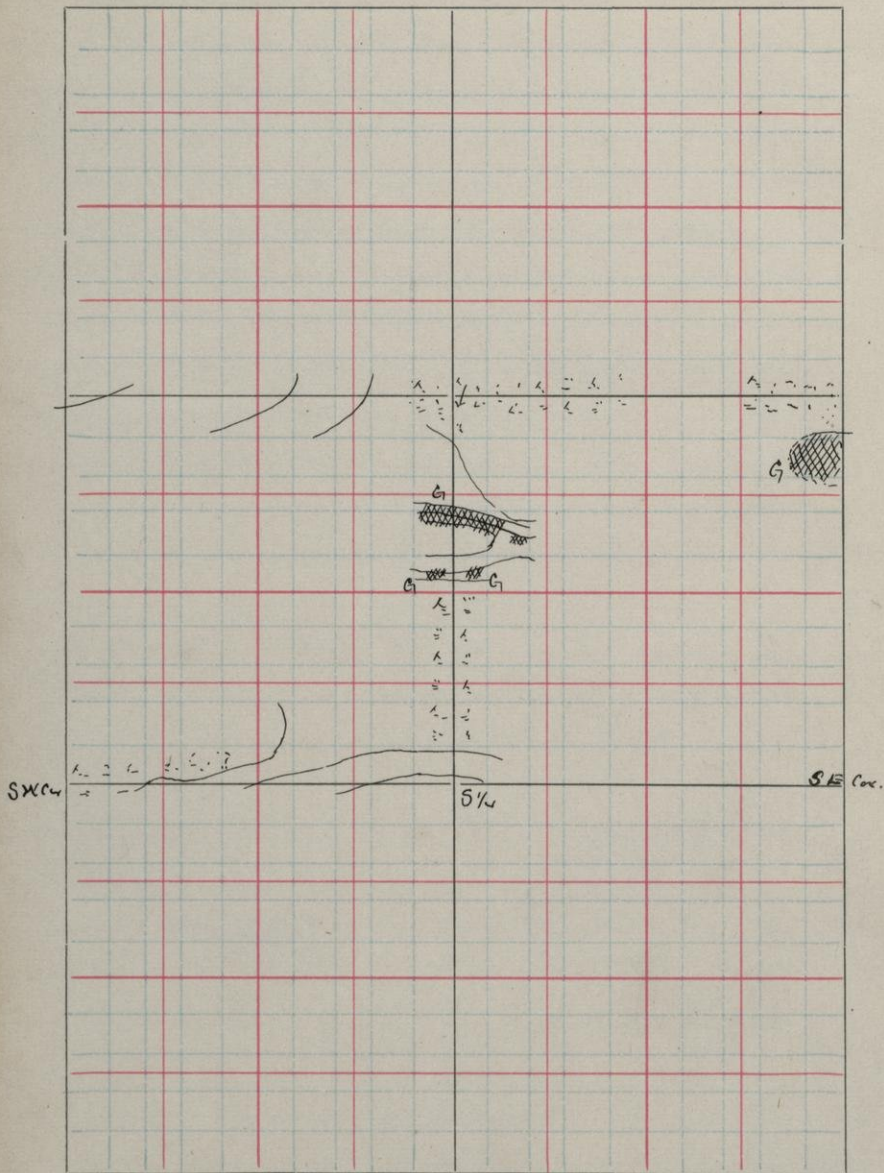
26152 Coarser specimen from near top of
 ridge. Diabase.

26153-57 p. 29.

S. 13

T. 42

R. 29



T. 42. 29

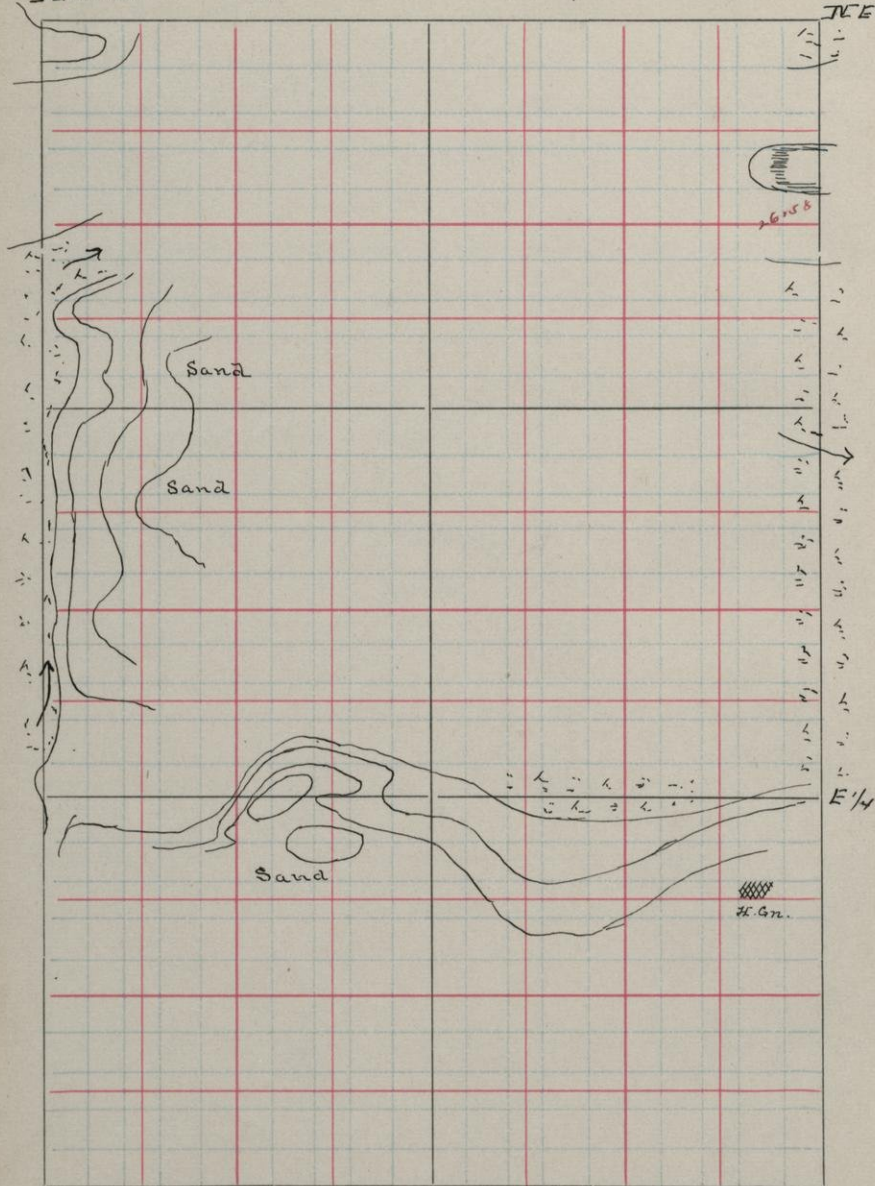
In the S $\frac{1}{2}$ Sec 10 T. 42 R. 29 only one
thick of greenstone was crimed.

NE. 23

T. 42

R. 29

NE 1/4



J. 412 R. 29

The NE $\frac{1}{4}$ Sec 23-42-29 is principally sand, drift, etc.

26158 At from 140 to 190 S of the NE cor Sec 23 is another block of the peculiar banded hornblende schist, like that found a mile east. It strikes about NW and is vertical.

Near the E $\frac{1}{4}$ part of the section is a small ledge of hornblende gneiss

26159 p. 21.

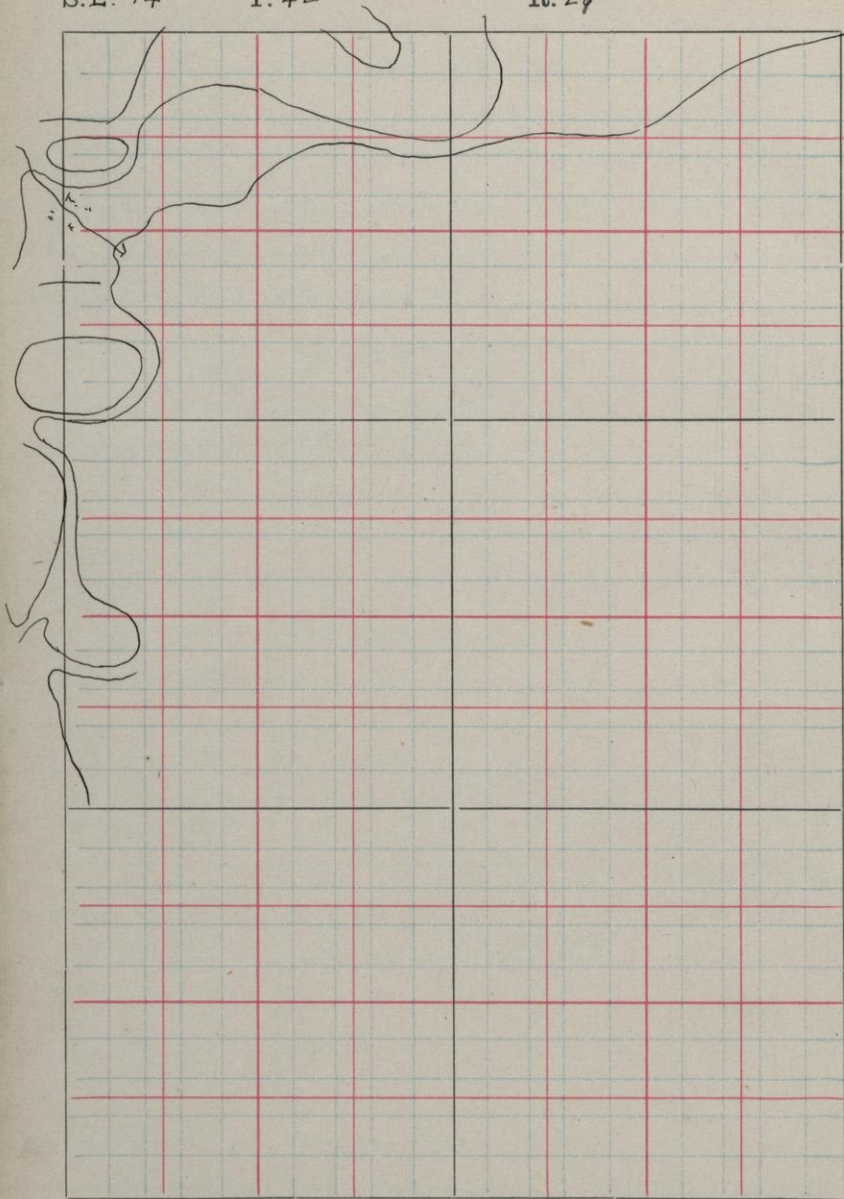
26160

S.E. 14

T. 42

R. 28

E 1/4



S.E. Cor.

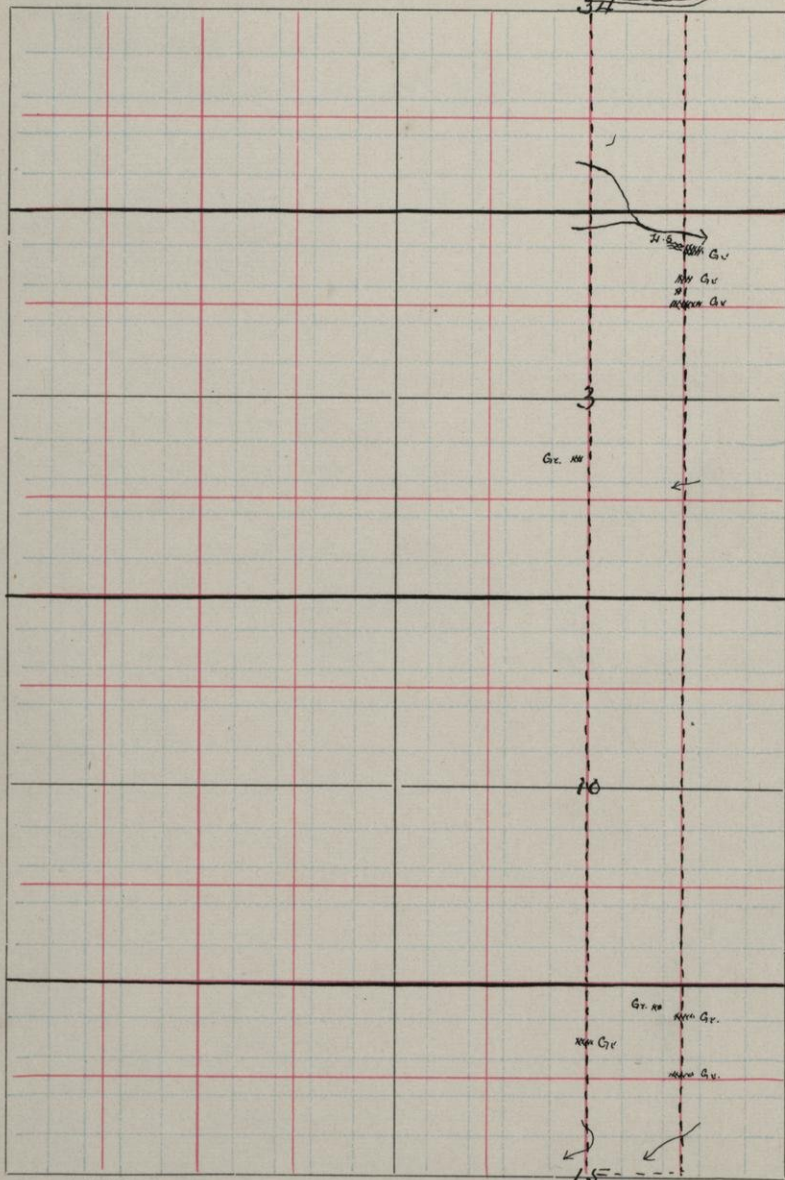
J. H. R. 29

The O.E. in Sec 14 is covered with drift
hills.

S.

T.

R.



T. 42-R. 29.

From road at 500 W of E line Sec 3, ran South through Sec 34-43-29, Secs 3, 10 and 15 T. 42 R. 29, then 500 W and north again.

In Sec 3. Several ledges of granite and hornblende schist, the former certainly, the latter, were seen in the N.E. 1/4 of the Section.

- 26161 Specimen from N. side of bluff. 150 S. 500 W. of N.E. cor Sec 3. Hornblende schist.

Again near the center of Sec 3, a small ledge of granite was found.

In Section 10 no rocks were observed, but in the N.E. of Sec 15, there are several ledges of granite, as indicated in the map.

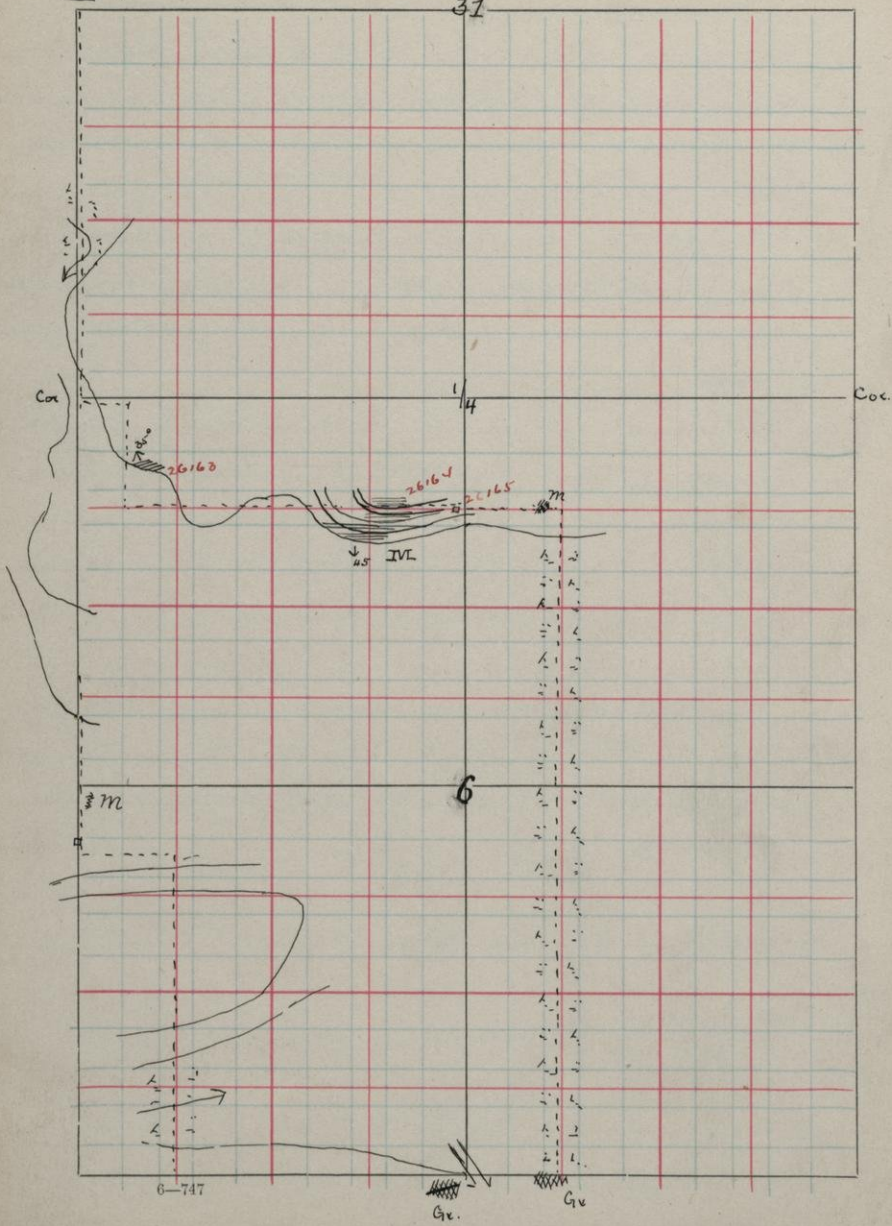
- 26162 is specimen of red granite from 485 S. 500 W of N.E. cor Sec 15.

S. 31
6

T. 43
42

R. 28
28

31



6-747

Gr.

Gr.

J. 42043 R. 28

Several ledges of rock other than gran-
ite were known to exist in Sec 6. T. H. R. 28
A search was made for them with the
following result.

26163

at 150 E. 175 S of NW cor Sec 6 is a small
ledge of pink marble on the edge of a
swamp. It is like the usual character of the
Marquette rock, and is like this,
cut by small chert bands. The general
strike of the more or less contorted beds
is S. 45° W. and dips about 45° N. W.

at 3.7 S. 575 E is the west end of a large
knob of the same marble, which here
is brecciated, conglomeratic etc - and is
interbedded with sandstone and red slate.
Exactly as is the case in the Marquette
region. The fragmental bands are from
a few inches to a foot in thickness.
The strike of the series is E. W. and dips
45° S.

26164

is a specimen of the conglomerate which
is made up of marble, slate and chert
fragments in a calcareous quartzitic
matrix.

26165

appears to be a ferruginous quartzite?

Probably, one of the Marble series, from
the dump of a pit near the S. 1/2 of Sec 31.
Another ledge of Marble is at the
W 1/4 Sec 6.

General Description of Conglomerates

The conglomerates discussed in these
pages are unquestionably granite con-
glomerates composed mainly of granite
and quartz pebbles cemented by a ma-
trix of granite sand or quartz sand, the
former predominating. The whole mass
of the rock has been squeezed so that
the pebbles have all been elongated
in a single direction and the matrix
has been made schistose and like
a fine grained gneiss. The rock is
well banded, conglomeratically and non-
conglomeratically bands succeeding each other
with great regularity; the former rang-
ing from a few inches to six feet in
width. The fine grained bands, besides
being schistose are marked by distinct
current bedding.

It is noticed that schistosity is paral-
lel to the banding.

S. 35

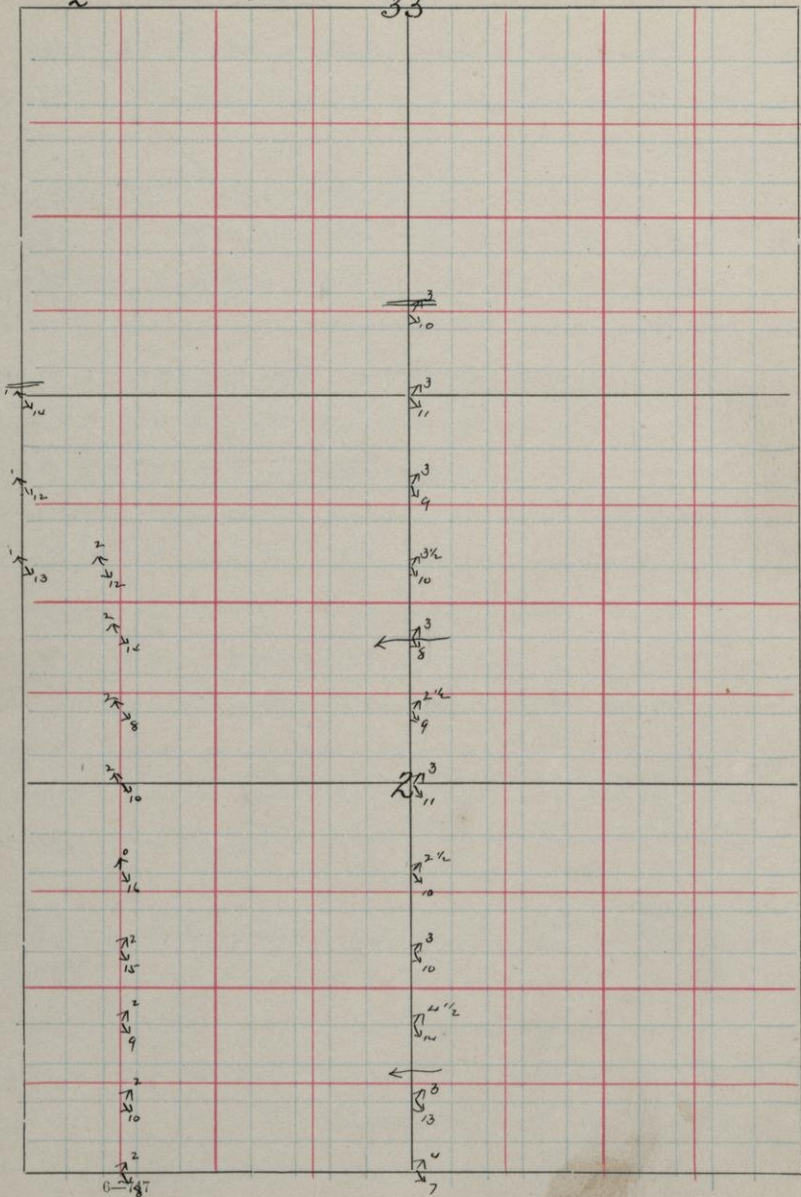
T. 43

R. 30

2

42

35



J. 42 + 43 R. 30

A series of magnetic observations was made along the 200 Center line of J. 43 R. 30, Sec 35 and Secs 2 & 11. J. 42 R. 30, and along the line 250 E of W. lines of Sections.

The supposed ledge at 275 S of Center Sec 2, as represented in Lake Superior Survey Map, is, I believe, a boulder. It is a fine grained, pink, porphyritic rock resembling a felsite, and is apparently amygdaloidal.

S. 11

T. 42

R. 30

Σ_8^2

Σ_7^4

Σ_6^2

Σ_7^3

Σ_7^2

Σ_8^3

Σ_{10}^2

Σ_7^3

Σ_8^2

Σ_7^3

Σ_9^2

Σ_7^3

Σ_8^2

Σ_7^2

Σ_8^2

Σ_7^3

Σ_8^2

Σ_7^2

Σ_7^2

Σ_6^2

Σ_5^2

Σ_6^2

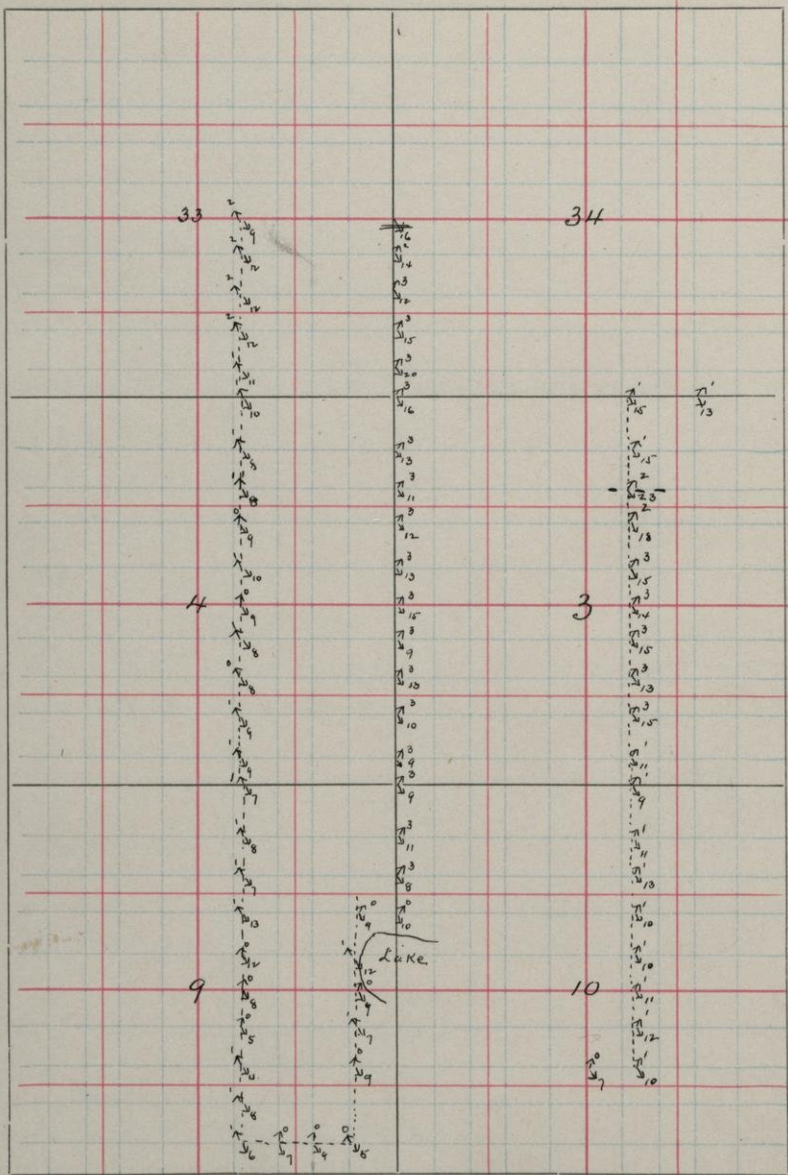
Σ_8^2

Lake

S.

T.

R.



6-747

I 42

R 30

The magnetic observations in Secs 33,
34. T. 43-30 and Secs 3, 4, 9 070 T. 42-30
this morning.

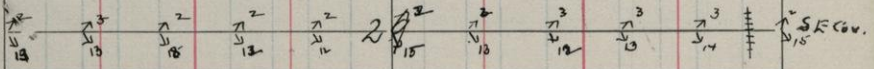
S. 29

T. 43

R. 30

29

SWCw



□ □ Sagola Sta.

SKCw.

Magnetic Observations

West of

Sagola

S.

T.

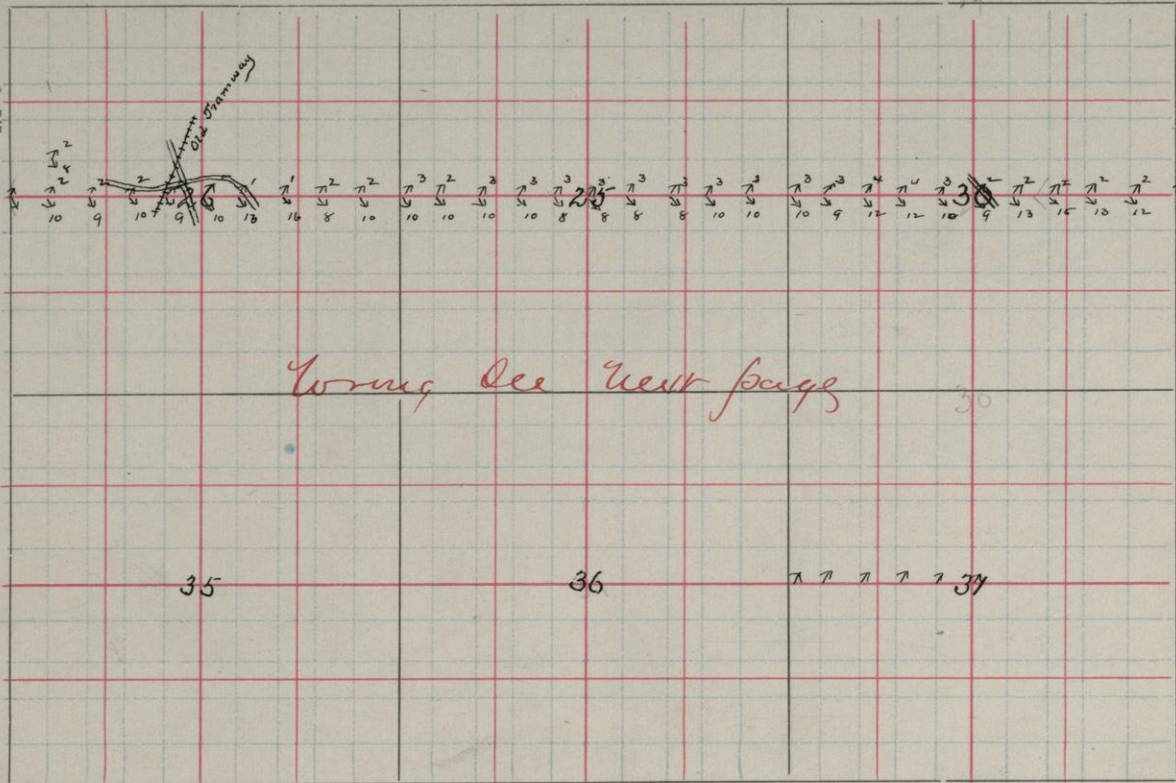
R.

29

30

0-147

mi



Two days were spent in making magnetic observations on E and W lines west of Saguenay, in order to discover, if possible whether or not any magnetic lines extend southward from the ^{Wausfield} ~~Headlock~~ region into the Metropolitan Tongue. The results were all negative as map shows.

