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Country south of Ishpeming, Michigan, Marquette district: [specimens] 17829-17886. No. 115 1891

King, F. P.

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

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U. S. GEOLOGICAL SURVEY
FIELD SECTION BOOK

Book 115

County south of Ishpeming, Mich.
Marquette District.

J. P. King, 1891
17829-17886.

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 page is also arranged so that, if desirable, a smaller scale can be used, two inches, one inch, or even 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, for instance 4025, 250 N., 300 W., *Strike, N. 6° E., Dip, 50° E.* Then follow with as full a description of the ledge as possible. 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, but chips of them must be taken. 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 $2 \times 2\frac{1}{2} \times \frac{3}{4}$ 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. In all cases collect chips for slicing. 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. It is desirable that specimens 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.

115

17829-17886

Q 17843 located in 15; should be 22 sec.
Q see work for aug 7 etc. Lake Sally as
located by Smith on copy [sin = 1 ml] is 120
pds too far south as shown by plane table
map. Omitted ledges on trail south of S. Sally

== Notes ==

Francis P. King

W.S. Bayley in charge of party

Field Season 1891

Marquette Range

See ledge marked 3 on ~~the~~ ^{aug 7's} work

Omitted after 17880

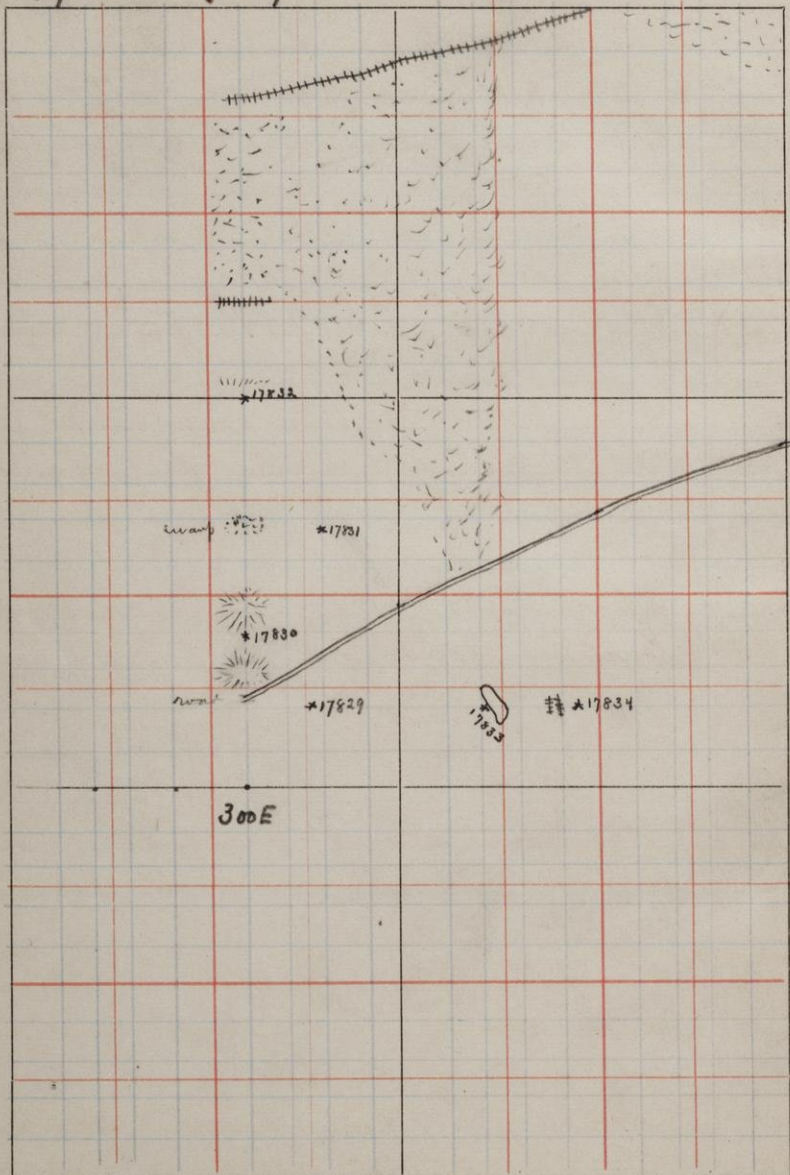
#17885 Platted wrong if platted as stated under
the number

17880-84 (Can't make out where located)

SW 1/4 16

T. 47

R. 27 W



1
Aug. 3, 1891

With Oley as compassman I went
to the S.W. cor. of Sec. 16 T47R27
Run 300 paces east of corner
then 500 " north taking
up work at this point

✓ 17829 Specimen 17829 - Greenstone
Location - 600 N 175 E of SW cor.
of Sec. 16 T47R27.

The ledge trends East and west
with small exposures for about
115 paces

645 N road.

✓ 17830 Specimen 17830 - White quartzite
Location 685 N 300 E of SW cor.
Sec. 16 T47R27

This exposure just at base of small
hill is five ft high on south
side and about 50 paces long
trending north east and south
west.

Passed over a small hillock
and came to a long east and
west trend of exposures

✓ 17831 Specimen 17831 - Thottled quartzite
Location 850 N 400 E of SW cor
Sec. 16 T47R27.

This ledge is weathered to such an extent. that the neighboring ground is strewn with fragments.

A short swamp of 20 paces then higher ground with exposures of mottled quartzite.

Specimen 17832 - white quartzite
 17832 Location 8000 N. 300 E of Sw cor.
 Sec 16 T47 R27. The ledge probably extends west to section line.

Passed over this ledge ridge to low lands

R.R. 1160 north.

Swamp to next track D.S.S.R.R.
 1420 N D.S.S.R.R.

Run east 270 paces
 D.S.S.R.R. here 50 paces north of us.

Run south through swamp to RR 700 steps. south line.

Continued south through swamp to road 1280 paces south of line

Continued south 1400 steps on higher ground then run east 60 steps to old pit where I took Spec

17833

17833. White quartzite. Location

1400 south and 630 east of new cor Sec
16 T47 R27 N.

The pit is about 80 steps in length
and 15 wide. Took specimen from
west side. R.R. track (double track)
on east side. & exposures of this white
quartzite are to be seen directly east
of pit on either side of track. Much
the greater part on east side.

Took Spec 17834 which is similar
✓ 17834 in character and appearance to 17833

1400 South of north line of 16-47-27 and
775 east of west line. Ledge about
8 ft high on + side south.

Continued south to 4500 then
ran east to 800 east of west line of
16-47-27

600 steps north of line struck the
white quartzite just spoken of on
east side of track 610 paces south
another ledge.

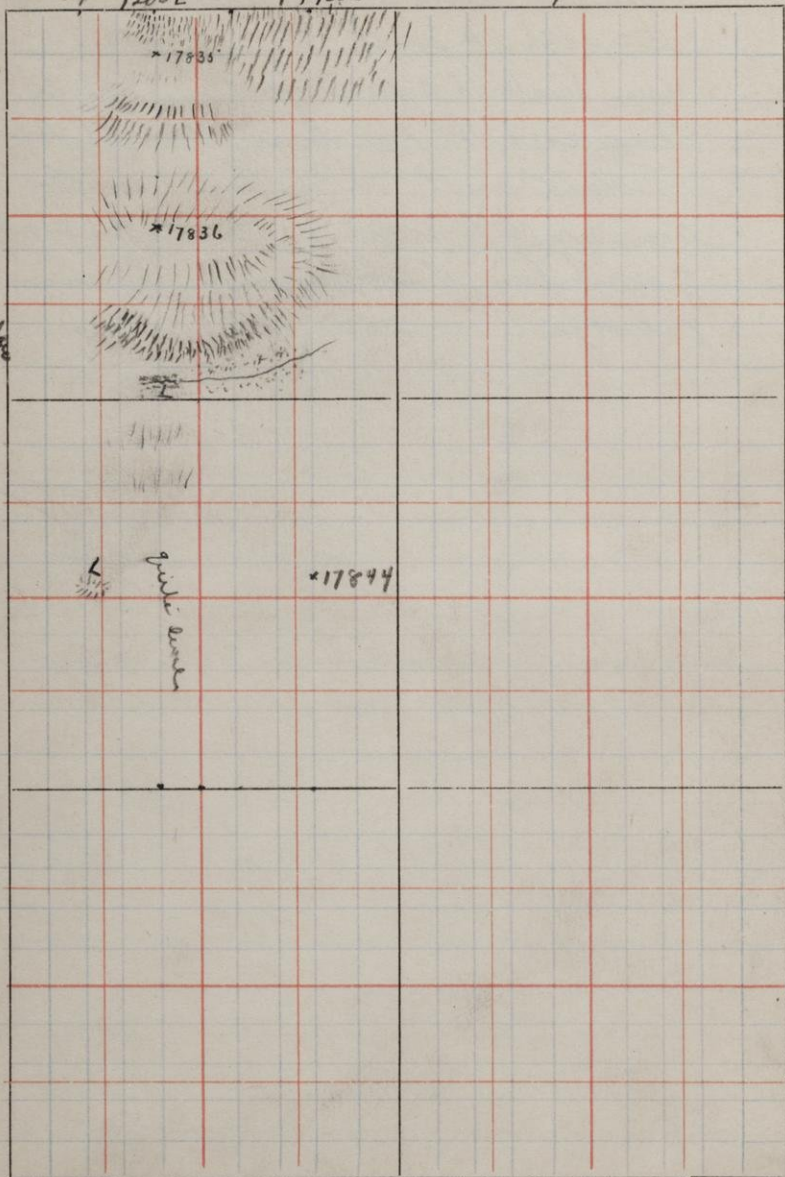
No more ledges were seen on
this line but they may be seen on
east side of double track for about
180 paces.

In running north. Came upon
road 800 paces. Country generally rolling

Continued north to R 12 track
 1500 north of South line of Sec 16-47-27
 Main track 50 paces farther north.
 Run east to $1/4$ line, through swamp.
 Turned south on $1/4$ line and
 run south to road, 1050 steps south.
 of north line of 16-47-27. No sign
 of ledge.

SE $1\frac{1}{4}$ 15 T. 47, 400 E

R. 27W



Aug 4 1891

17835

Started from middle of S 15-T 47-27
 Survey east 200 steps and took
 spec 17835. a green lime.

This is the same hill as center of
 section but about 50 ft higher. Took
 specimen just at edge of precipice
 30 ft deep. Location 9000 South
 and 1200 East of NW cor of 15-47-27
 Continued South 1050 paces South.

after precipitous descent came upon
 a ledge 20 paces in length resting
 East and West. It was greenstone.

The country here ~~gradually~~ slopes rapidly
 until a level is reached.

1100 S struck a ledge of greenstone
 ledge of greenstone 70 paces long
 dipping precipitously on its North
 west side.

Came to foot of hill at 1150 S

Steps ascent of hill

1275 S top.

17836

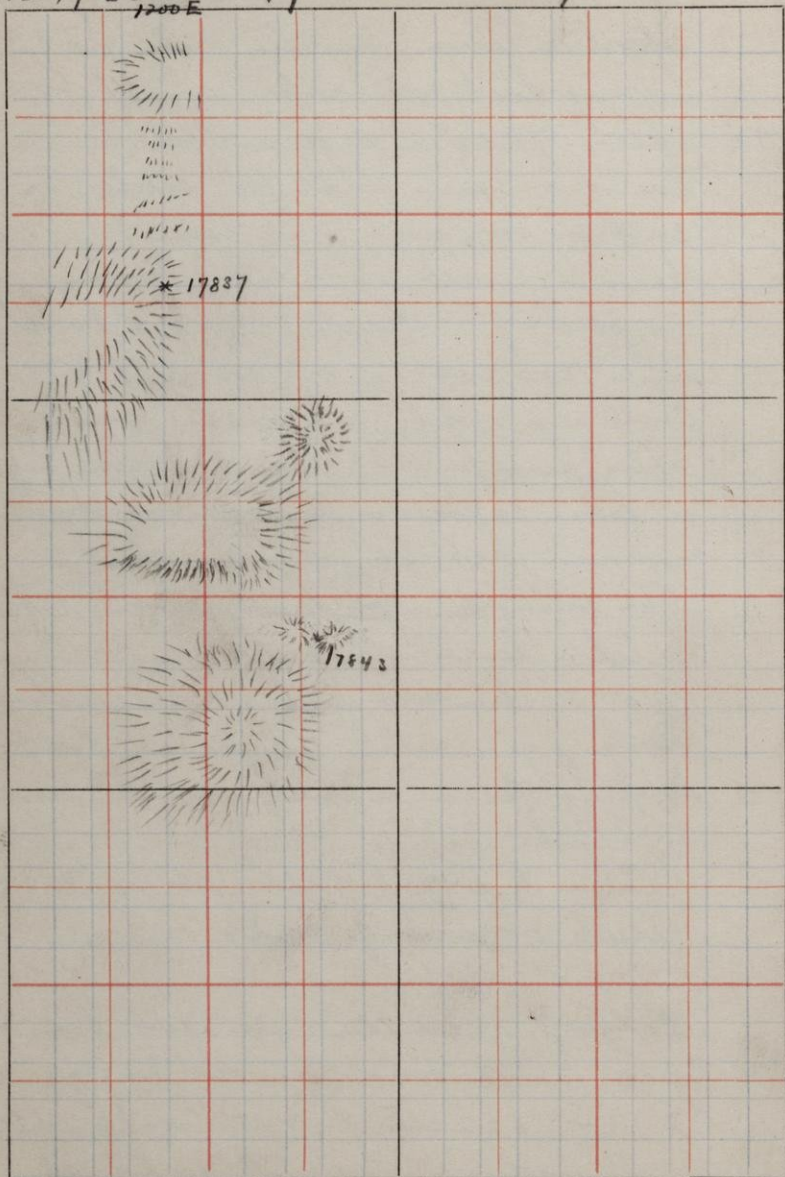
Ledges of greenstone all along line took
 spec 17836 from small ledge

1275 S 1220 E of NW cor 15-47-27

a gradual descent until at
 1440 S descent almost 1

NE 1/4 22 T. 47

R. 27



1475 S small stream with sloping falls
for about 15 paces from here then a drop of
8 ft. Slope almost entirely of pines and
greenstone. Small ledge through
which creek cuts.

Country gradually becomes higher
1730 N 1100 W saw an exposure
of greenstone showing at south west end of
small ridge

Continued south to south-line of Sec 15
Saw no more exposures.

Ran into NE $\frac{1}{4}$ 22-47-27

50 paces south, 1212 East of NW cor
of Sec 22 saw two small exposures
of greenstone. Northern exposure is at west
end of small hillock trending eastward

Continued south over this hillock with
frequent exposures of greenstone to
ledge where I took Spec 17837

17837 This is a greenstone localities 340 S
1000 E of NW cor Sec 15-47-27

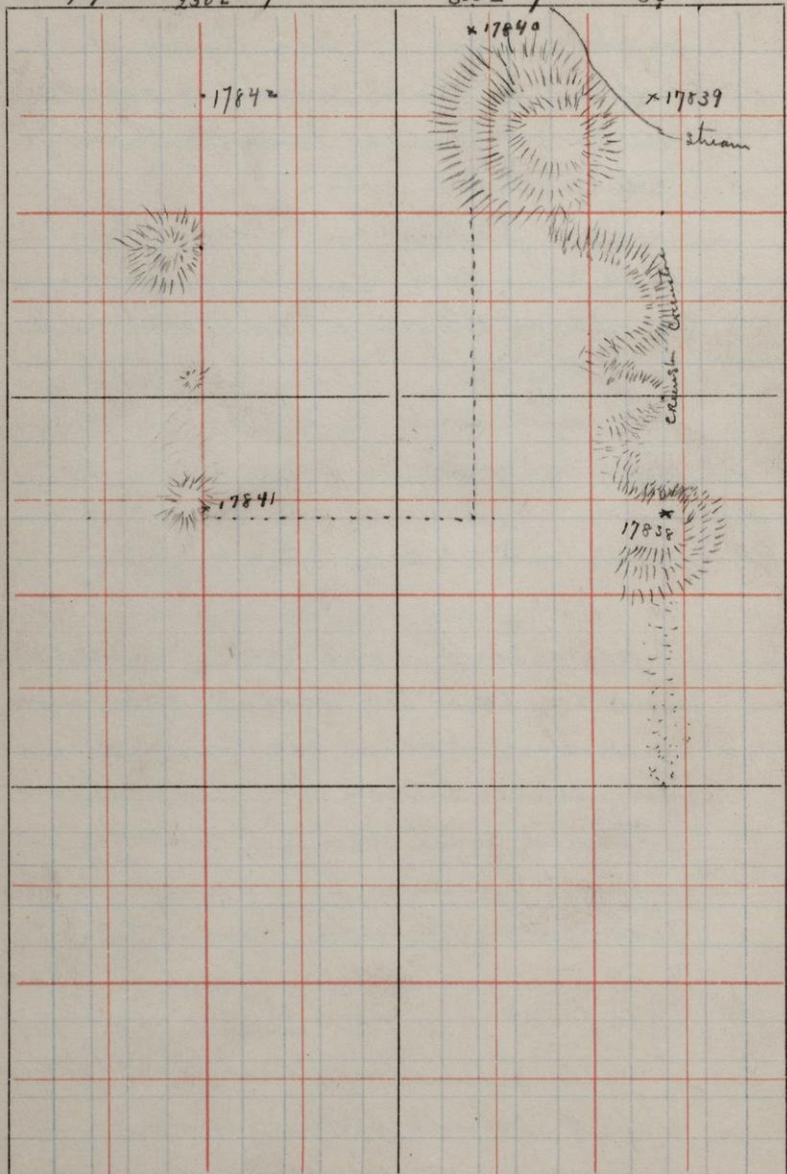
Small greenstone. Knot 4905 1140 W
Slope of small ridge ends.

Exposures of greenstone to be seen
east.

NW 1/4 22 T. 47
250 E

R. 27
600 E

850 E



Another little ledge 580 steps south.
 700 S to large hillock - rapid
 descent on south west and west side.
 Numerous exposure of greenstone.
 800 S beginning of slope of high knob
 like hill. Precipice on south side.
 Continued south to $\frac{1}{4}$ mile, running
 along western slope of knob hill.

Run west 350 paces to 850 E of west
 line of Sec 22-47-27

Run north.

First 300 steps has been done by
 Dr Bayley.

1350 N 850 E SW cor Sec 22-47-27

17838

1/2 k Spec 17838 - greenstone

Exposure on south side of hill

Passed over precipitous descent bare
 rocks greenstone in 1400 steps

1500 N another exposure of greenstone
 on east side of small hill.

An exposure on north side of same
 hill

1560 N 830 E greenstone on hill side

1680 N 800 E greenstone on side of
 same hill as before

1850 N crossed small stream

1900 N 775 E greenstone Spec 17839
 17839 on n w side of hill

Line runs into a swamp.

1000 N Line runs out on side of hill.

Run west 250 paces making
 us 600 E of west line of Sec 22
 47-27

Small stream 890 E of west line

17840 Run south. 35 paces to small exposure
 of greenstone took spec 17840

Another exposure of greenstone 550
 east of line

Passed south over western slope of hill
 200 S Small exposure of greenstone

Continued south. 680 S paces passing
 over high level country Saw no
 exposures

Turned west and run to point
 250 E of west line of Sec 22-47-27
 Took spec 17841 on south side

17841 of ledge Exposure here about 15 paces
 in diameter. 10 ft high. Local

1370 N 250 E of NW Cor Sec 22-47-27

Ledge 1515 N N 295 E small exposure
 of greenstone on side of hill

1700 N Small exposure of greenstone
 on east side of hill

17842 Spec 17842 taken from a small
 exposure of greenstone. 1900 N 31° E
 S.W. cor of Sec 22 47 - 27

Went by trail to point 1000 N
 and 1400 E of S.W. cor Sec 22 T47
 R 27 N

Run north 200 paces to foot
 of small hill (greenstone) exposure
 on south west side.

17843 Took spec 17843 1200 N 1350 E S.W.
 cor Sec 15 T47 R 27

1275 N 1375 E another exposure of
 greenstone or rather small hill
 it where axis is east and west
 Exposures on west and south side of
 same.

Exposures on all sides
 at 1400 N a small exposure 20
 x 10 paces

1600 N small exposures frequent
 1340 E of west line a small ridge
 bare on east side. Small exp.
 on north side of low hill.

1640 N 1335 E small exposures
 of greenstone
 1750 N west of exposures

in a radius of 50 paces west of line
 1890 N a small & porous greenstone.
 1370 E 1890 N a small & porous
 a few ft high.

Ran north into Sec 15. 47-27
 on 1400 E line.

No & porous noticed until 290 N

1400 E across Sec 15. 47-27. Look

✓ 17844 Spec 17844 greenstone. Very small
 & porous on north side of hill.

Crossed stream 550 N.

680 N passing on slope of big
 hill then entered low land.

Hill at west of us seen to very cliff
 at 1900 stood at base of precipice
 on top of which is our 1/4 line.

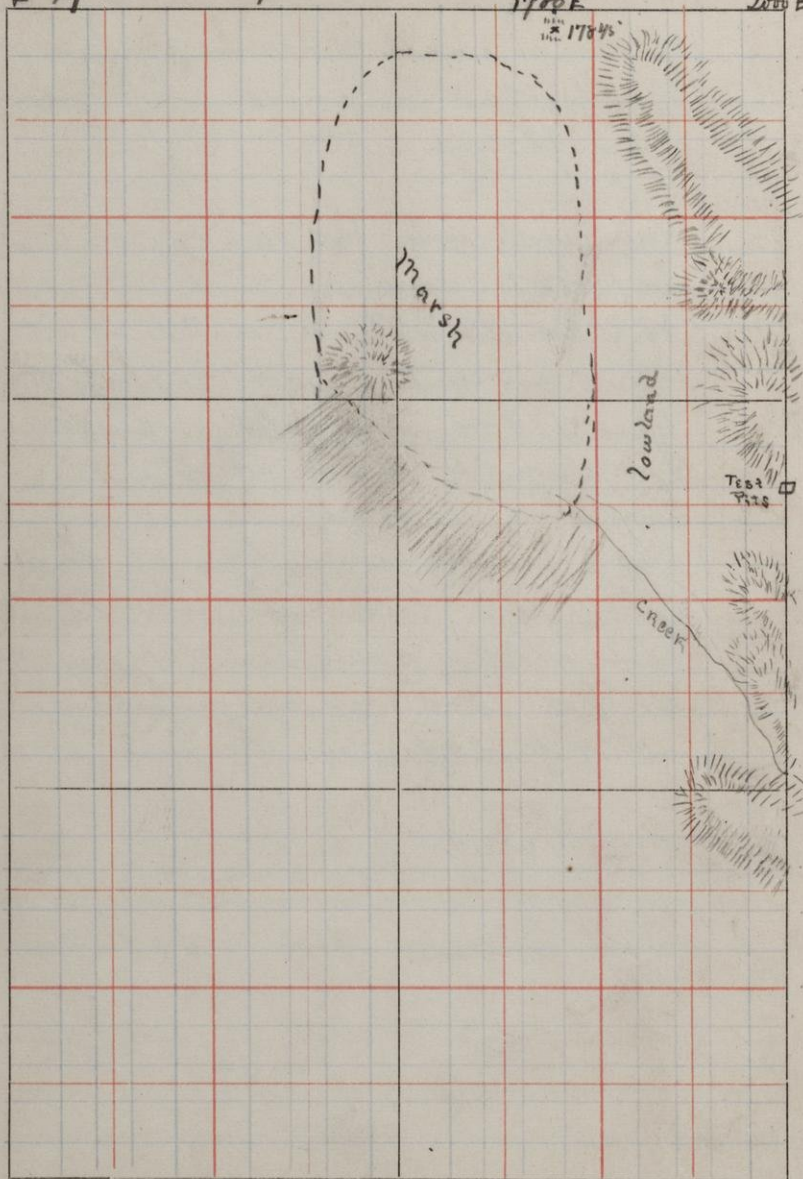
Plotted at 1000 N

SE 1/4 15 T. 47

R. 27

1700E

2000 E



Aug 6 1891

Started on $\frac{1}{4}$ line of Sec 15 T47 R27
1700 E and 1000 S of corner Sec
15-47-27.

Hill begins 10 paces from line
also 4 paces Took spec 17845

17845

Ledge 1050 south. 24 paces on
south and south west side of hill

1125 S 168 SE quartz. ledge

1150 S small " "

1200 S " " "

March west of us running to 1400 E
of west line of section

A knot of greenstone was at SW
side of the march - about 20
ft high. Localities 1450 E 1540 S NW
cor Sec 15 T47-27

Bare rock and precipitous
on east side.

Little stream 1640 South.

20 steps further south swamp ends
- rise in ground begins.

1840 South came up on road.

Continued south to south line of section
passing over a rolling country with
hard wood growth. Fine travelling
good but ledges scarce.

NE 1/4 22 T. 47

R. 27
1700 E

1,700 E

Rolling

1785/

*17846

Low
land

Rolling Country
Line^{*} well marked

*17850

*17847

17848

17849

Continued south and run into
NW $\frac{1}{4}$ Sec 22-47-27

Hard wood - rolling country
still

500 paces south found a small
exposure of greenish granite from which

17846

took spec 17846

500 S 1660 E of NW cor of 22-47-27

another small exposure of greenstone

This is on north side of the base

of a roll of granite

After roll for 25 paces, country

becomes low and level

At 800 S 1520 E is a hill boundary
north west and south east sloping
to a level at 850 S but running north
west out of sight.

17847

Took spec 17847 800 S 1520 E

of NW cor 22-47-27. Exposure
small and on east side of ridge

Ridge on line 790 S 1700 E - small

exposure of greenstone on east side
of small ridge

17848

800 S 1700 E took spec 17848 from

small exposure of greenstone on east
side of same small ridge as the
ridge 50 steps north.

Low lands to the east of us ridgy
to the west.

Run south $\frac{1}{4}$ mile and then
east $\frac{1}{4}$ post.

Then run north first into a small
patch of low land then up a
small ridge to an exposure
of greenstone about 20 feet long
and running east and west

17849 Took spec 17849 1100 N 2000 E
of SW cor of Sec 22 T47-27

1170 N small exposure of greenstone
1200 N " " " "

1250 N a small exposure of greenstone
on north side of ridge at base of
gradual slope

1980 E of west line of section maybe
seen another exposure of same
beds

1260 N a small exposure of greenstone
on south side of base of a gradual
sloping ridge

17850 Took spec 17850 greenstone
from an exposure about 15 feet
east and west on north side of
ridge in Sec 22 and 8 or 10 ft
high.

West of this 90 paces or 1915 E
 of west line of 22-47-27 or
 small exposure of quartzite coming
 out on north side of same ridge.
 Since leaving 1/4 post have been
 travelling over a high rolling
 country timbered with hard wood.

The ridges for 200 steps at start
 were quite decided but after that
 became gradually rolling.

1625 ft another small exposure of
 quartzite on south side of short slope
 of roll

17851

Spec 17851 taken from an old ledge
 1900 paces or 2000 E of SW corner of 22-
 47-27

Ridge a regular precipice on
 south and south west side.
 Runs along north west for about 100
 paces.

From post at corner set by
 Cummings "Iron cliff Co" Bushong
 cap.

40 steps north is a creek. This is
 in a little valley and probably
 runs into marsh.

Up on a ridge quite steep ascent

100 N and 1980 E ledge of greenstone
 150 N ledge of greenstone. I found on
 north side beginning of shear.

Run into low wet country for 15 Steps
 then another ridge

240 N a small 4 p. of greenstone

240 N 25 west last another small 4 p. of green

300 N a small 4 p. of greenstone

Greenstone ledges just west of run
 line on north side of south ridge
 and on south west and north west
 side of north ridge. These ridges
 slope very rapidly to the north
 west and the marsh may be seen
 at north west end of valley

330 N. North side of last ridge - 4 p.
 of greenstone.

Test pits 390 N 1980 E of west line
 15-47-27 continuing to 400 N.

Two of the pits struck ledges of greenstone
 but the other pits only showed blasted
 boulders

480 N 1970 E small 4 p. of greenstone ^{on slope}

510 N small 4 p. of greenstone.

570 N 1970 E 4 p. of greenstone
 as hill slopes into low country

600 N ledge of greenstone.

650 N 1850 E is a large knot 100 ft in diam. sloping rapidly at first then gradually into low land of marsh west and valley at north and south.

Between 600 + 650 N in neighborhood of line occur a regular nest of ledges

700 N a small + exp facing north and is crescent shaped. Continued north to lake but saw no further exp. Came out at east $\frac{1}{4}$ part of 15-47-27.

This as an iron post mushroom cap set by Cummings "Iron Cliff Co"

Went into camp for dinner. After dinner returned to $\frac{1}{4}$ part square of east 250.

From lake to be 1000 of $\frac{1}{4}$ line 1240 south came upon trail which runs to around lake shore to old test pits.

17852

Took spec 17852 13555 250 E of NW cor of Sec 14 47 27 Granite + facing north about 10 p long running East + West
1400 S large ledge of greenstone

Exposed on top of hill

Hill here begins to slope off rapidly
to the east trending north west and
south east

15000 240E at top of hill a large
exposure of greenish limestone.

Worked stopped here in account
of thunder storm.

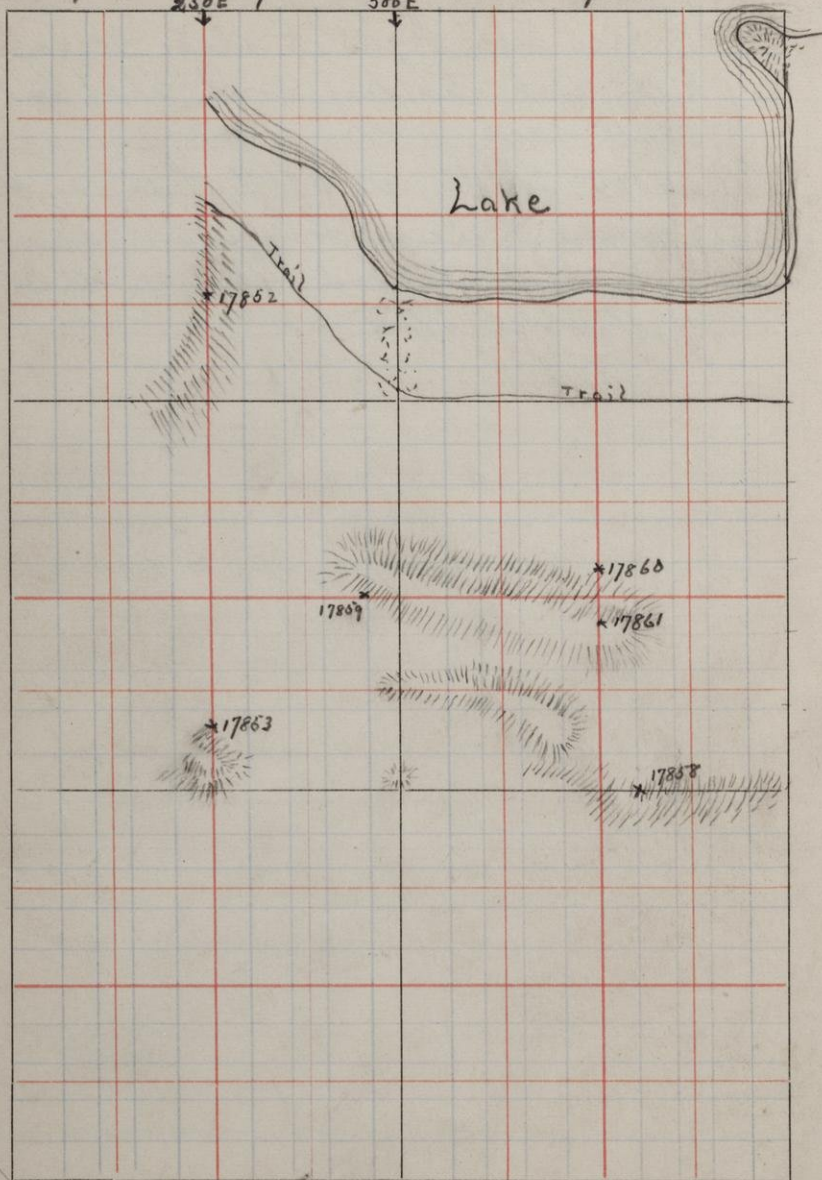
SR 14 14

T. 47

R. R27

250 E

500 E



Aug 7 1891

Started on 1600 S 250 E of new
Cor sec 14-47-27

Line running west to test pits.
thick with 4 paces of greenstone
1650 S hill slopes away in 20 paces
east.

1800 S large 4 paces of greenstone +
dip into low land 1980 E of west line

1830 S small ledge of greenstone

1900 left ravine and by an gradual
ascent.

1930 S 210 E of N.W. cor Sec 14-47-27
Took Spec 17853 greenstone +
faint facing the north about 25 ft
long 10 ft at highest point.

1950 S small 4 p. of greenstone at
foot of hill " facing north

2000 S hill slopes south also to
the west.

Into Sec 23

25 S other side of hill

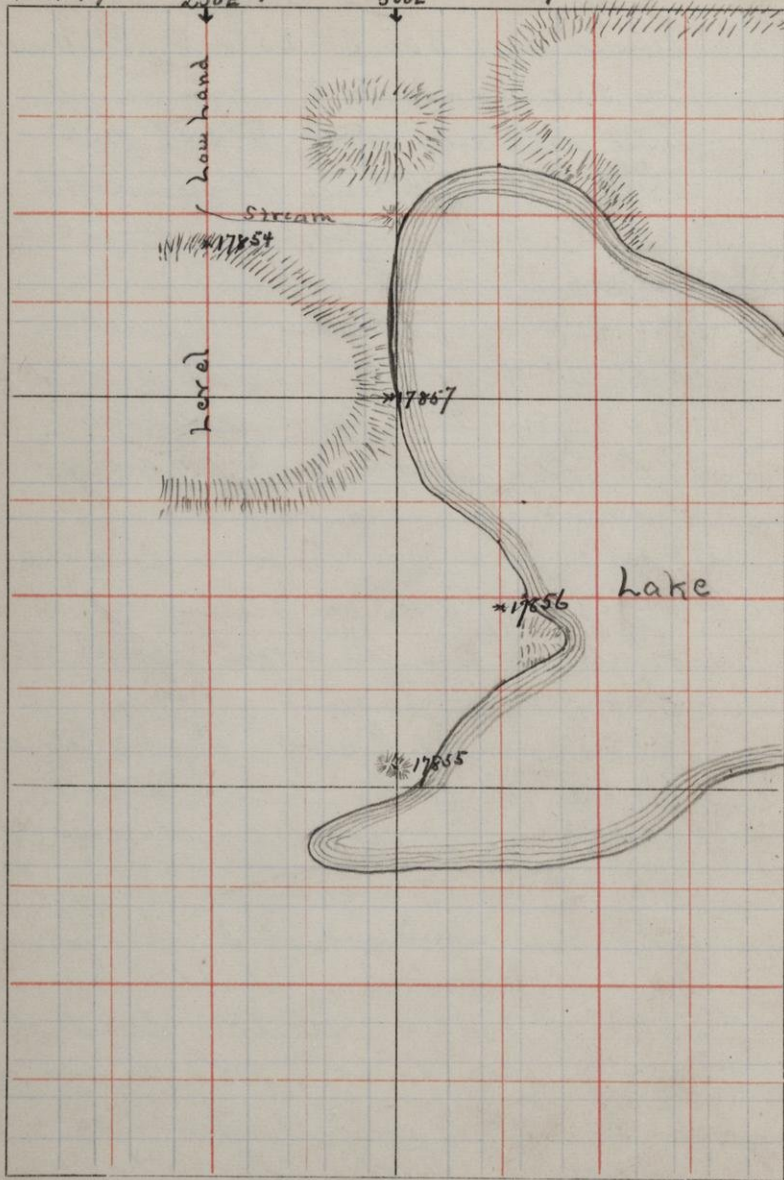
250 S of N.W. cor of Sec 23 small stream

260 S low land. This brings us
to the base of a 15 ft precipice of
greenstone. Took spec 17854

17854 Runs about 100 paces north & east.

NK 1/4 23 T. 47

R. 27



260 S and 175 E of NW cor 23 is another ledge of greenish or south-east and north slope of hill

600 S long ledge greenish & exposed facing north. Mine NW & SE this is the south side of rollgram which spec 54 was taken

Small ledge 725 S.

Continued south to $1/4$ line running over a rolling hard wood country (lumber)
 Run east 250 to $1/8$ post.

Turned north

1025 N 500 E of SW cor Sec 23

17855-

T47 R27 Took spec 17855-
 for a good sized exposure facing south and running east and west
 Continued north to 1250 through hard wood country then run east to lake 660 E of west line of 23. Struck it at small bay - a point runs out into lake just south of us. This point high.

A large exposure of greenish on north side of hill which forms this point. Took spec 17856

17856

Location 1250 N 600 E of SW cor 23
 T47 R27

1500 N passed with 5 steps of lake
high bluff ~~formed~~ ^{formed} greenstone 5 paces
west. Took spec 17857
~~Location~~ 1570 N 485 E small ledge
3 greenstone.

1750 N greenstone ridge running
to lake about 20 paces wide.
ridge bending north west and
south east.

Low ground to 1820 N then hill
again.

1930 N north side of ridge. Exposed
greenstone.

450 E of west line another small
exposed. Both perpendicular
and facing north.

At 2000 N run east to 800 E
of west line see 23T47 R 27

600 E 1970 north very small exp. of
greenstone on south side of hill

650 E 1950 N another small

Spec 17858 taken from north side
of hill bending north west and

17858 south east. Exposed almost 1
and running east & west 75 paces.
10 ft high 800 E 2000 S of NW cor
see 14T47 R 27

90 S 800 E a large exposure of
greenstone.

190 S began steep precipitous
descent of hill - descent by
jump. Large exposures of greenstone
common.

340 S lake.

Run west to our 500 E line and
then north to south line / Sec 14.
The ridge or hill we had just
crossed followed the stone for
about 200 paces being high and
precipitous with numerous and
large exposures of greenstone.

Ridge 45 N small exposure on
east side of little ridge.
110 N small 3 ft high greenstone
facing south top of ridge.

130 N steep descent sloping
also to the west. Small exp. on
north side.

Run over low ground to 200 then
ridge of greenstone. Exposures on top
west and north sides.

17859 Took spec 17859 greenstone
250 N 428 E of sw cor Sec 14 47.27
Ridge descends into low country again

310 N low slope. small 1 exp.

2 green stone.

400 N low swampy lands begin

525 N trail

Continued through low swampy country to lake 650 N.

Met with Camp for dinner.

after dinner. Alley square off for 1/4 post E to find our 750 E line. On this line we run south working in a clear hard wood country.

17860 Took spec 17860 17008 750 E of NW cor sec 14-47-27. This spec.

taken from a pile of greenish schists at mouth of large test pit. Saw no signs of ore or any other kind of rock other spec.

17758 720 E ledge of greenish + 7 ft high facing north.

run 30 paces east and west

1800 South top of very high hill ledge here much similar to that just

17861 mentioned only larger. Took spec

17861 Green stone.

1800 S to base of hill.

Just east of here 4 paces on E side of hill mentioned

in this morning's work.

Ran east from here to $14^{\circ}S$. Luni followed a long side of hill.

Numerous large & forms of greenalun. This hill at $14^{\circ}S$ can be seen to be sloping to lower ground west of us.

Quartz in part witness here standing. Work this far has been in green hard limestone. Splendid hauls. Turned here and ran north.

$75^{\circ}S$ to base of hill proper: but country still sloping to lower level $500^{\circ}S$ to trail. Country almost level since $75^{\circ}S$ but sloping very gradually to lake $650^{\circ}S$.

SE 1/4 14 T. 47
125DE

R. 27

1750 E

12.50 E

17863

1786 2

Lake

Test P. Trail

17864

~~17865~~

for drawings

Trail

17870

Aug 8 1891

Started from Camp 7.30. Went
north & south $1\frac{1}{4}$ mi. of Sec 14-47-27
Run north along shore of lake
crossing a ledge joint from 1900
to 1975

This joint is very precipitous on
north side and runs east $1125^{\circ}E$

17862 Took spec 17862 from south side
of ledge. Greenstone not much
exposed.

17863 Run east 1200 E to a knob of
greenstone and spec 17863 from
north side. Normal position of
exposed rock disturbed.

Continued east to $1250^{\circ}E$ then turned
south. Line in hard-wood country.

Run south to $1300^{\circ}S$ & $1250^{\circ}E$ of NW
corner 14 and found a test pit.
This almost filled with water but
ledge could be seen. The dump
can be seen entirely of semi-schist.

17864 Took spec 17864 semi-schist.
1330 S trail

1380 S began short ascent to higher
ground

1400 S higher ground but Core

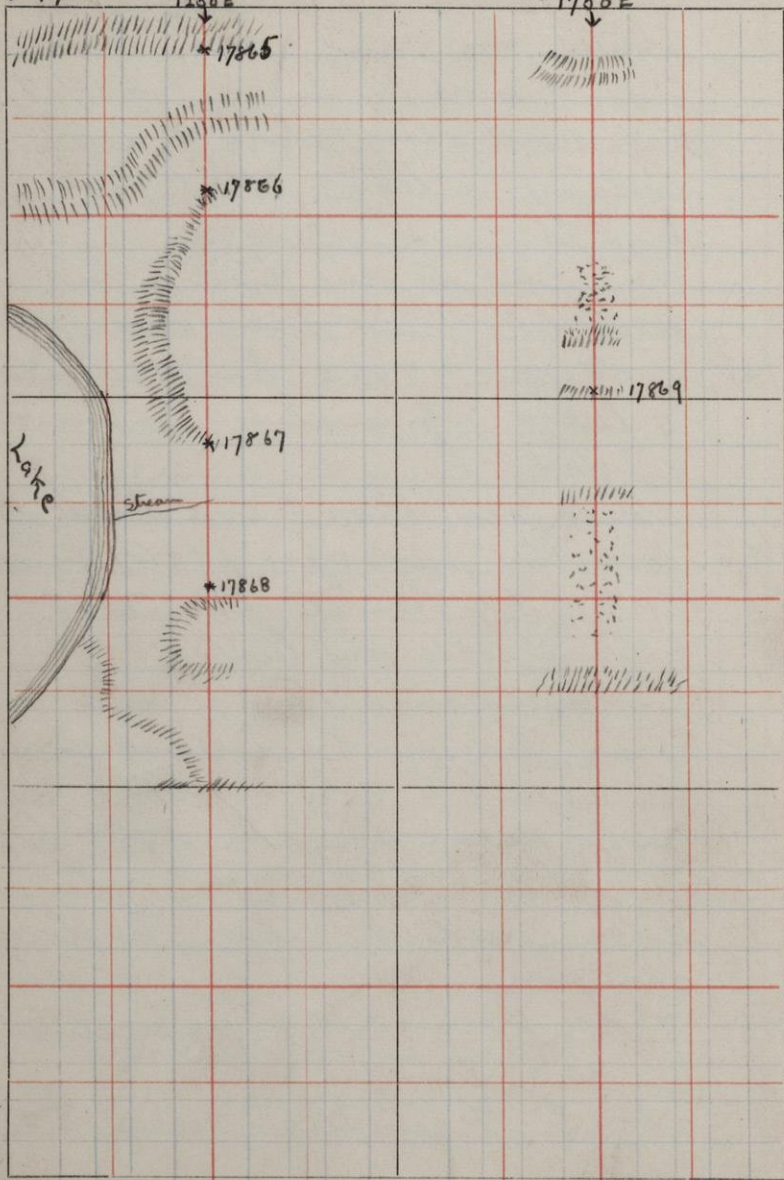
NE 1/4 23

T. 47

R. 27

1250 E

1750 E



and swampy
 1700 hard wood again and
 very gradual change of level
 1800's base of hill - gradual ascent
 until at 2000 where roll is quite
 steep-

50 S 1256 E of NW cor Sec 23-47-27
 17865 took spec 17865 Greenstone
 Wordeman followed this ridge
 east and west 250 steps and
 said exposures on north side were
 numerous. So it is the same ridge
 of yesterday's work which I said
 sloped away at the east.
 Dried lame by thunder
 storm.

Aug 9 1891

120 S ledg small exposure of greenish
just at the beginning of descent.

170 S 1230 E (NE $\frac{1}{4}$ 23-47-27)

Small 2 ft $\pm$ facing west.

210 S 1250 E NW cor Sec 23-47-27

17866 took spec 17866 from a 30 ft $\pm$ facing
north.

500 S passed along ^{top of} west slope of this
hill. Good growth made it next
to impossible to observe outcrops
if any.

500 S 1100 E Lake Tilden

550 S foot of hill where north side
is precipice from which took Spec

17867 17867

620 S to little stream running into lake
After leaving stream country gradually
becomes higher

17868 720 S 1250 E took Spec 17868 from
very small xp facing north $\pm$ 18 in
high 10 ft long E & W.

Small hill (in length) began
about where last spec. was taken
and runs to 750 S then
another hill begins

800 S Small - 1 ft high at prom
facing west

1170 E of west line large ledge facing
south and east

900 S Small 4 ft of greenish

925 came to a high precipice

30 ft high showing on the north and
west side of quarter line. This 4 ft prom
runs to $\frac{1}{4}$ line but decreases in
height.

Met Dr. Bayley and hunted for
 $\frac{1}{4}$ post - not finding it we
passed.

Ran north 150 paces on west section
line and then west to the 1750 pace line

1900 E found precipice of greenstone

1370 N end of swamp

Country gradually ascending

Ledge of greenish + facing south
about 50 paces east and west 10

17869 ft high. Took spec 17869

Location 1540 N 1750 E of SW cor Sec

23 T 47-27

1540 N hill goes into valley by
precipice of greenstone 20 or 30 ft
high

1600 N to foot of bluff then swamp

for 90 faces

1690 N small 4p of greenstone on
South side of rising country.

1800 N small 4p greenstone 1 face
3 ft high facing north 17 25 E

1870 N ledges small

1950 N top of hill

25 N int. Sec 14 hill drops
into down country by a precipice

of 28 ft greenstone Took spec

✓ 17870 17870 location 25 N 1750 E sec
cor sec 14-47-27

85 N a precipice of greenstone

15 ft drop + exposure facing west
of us 10 paces. The precipice over
which we came is 10 paces
East of us.

120 N to top of ridge beyond the
precipice across between ridge
slopes of to the west

160 N 1 exposure facing west 15 ft
high about 20 paces long.

275 N foot of hill

370 N to hill running a little
East of north.

450 N 4p. of greenstone facing
north 20 paces long 10 ft high

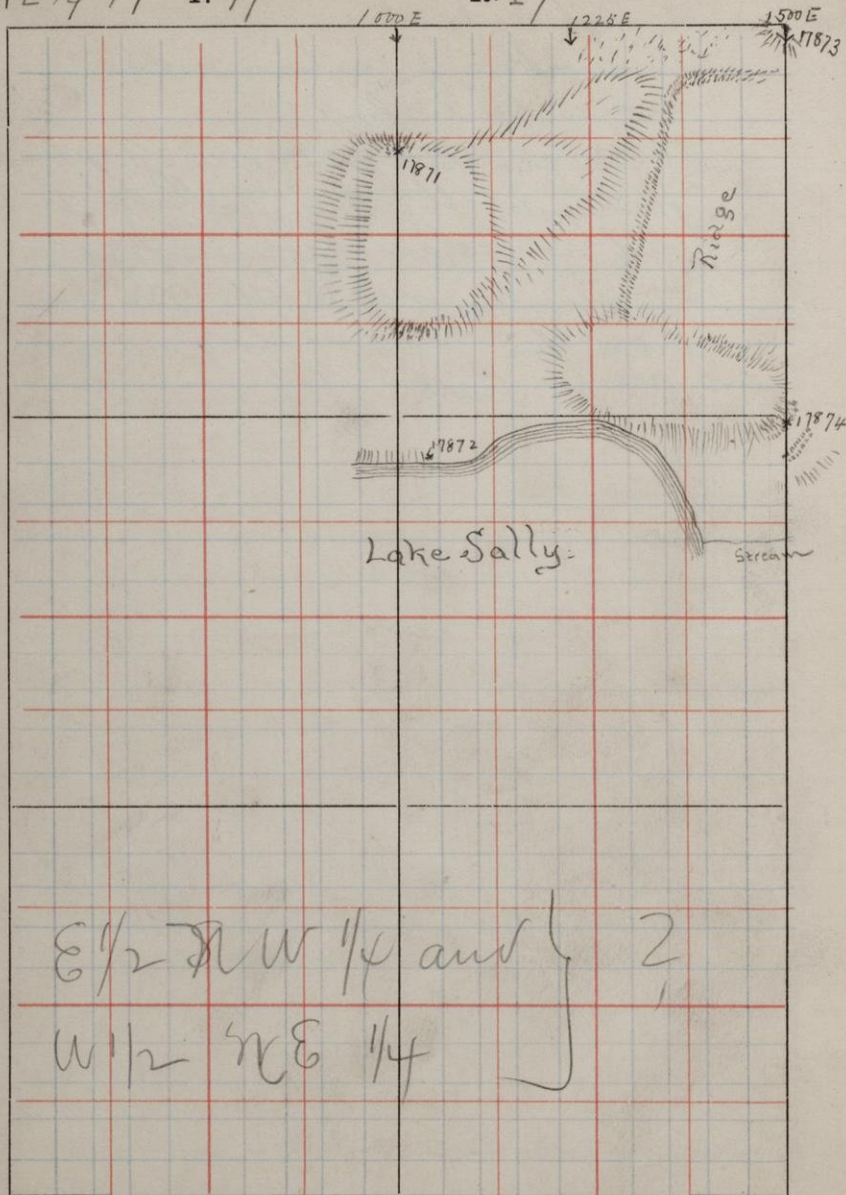
at highest point.

A number of eastern ends of
ridges end here.

500 N came upon 4 p. of ground
facing north. This I checked but
did not retain specimen because
Dr Bayley was to look over this
area the following day
500 N trail.

NE 1/4 14 T. 47

R. 27



E 1/2 NW 1/4 and } 2
W 1/2 NE 1/4 }

Aug 10 1891

17871

Ledge greenstn 130 S 1050 E
 150 S took Spec 17871 from
 north end of knob. Location 150 S 1000 E. p. 10 cor 14
 210 S 1070 E ledge of greenstn facing
 north.

310 S 1075 E small greenstn ledge
 390 S hill began precipitous.
 descent ledge of greenstn here
 then level to lake and slight
 bank at lake

17872

Spec 17872 550 S 1040 E of NW
 cor Sec 14-47-27 greenstn.
 Lake 550 S

Turned east along shore of lake
 1120 E point of ledge runs into
 lake.

Then lake makes north about
 20 paces

Turned north ^{on} 1225 E line
 1505 N lake & Sally

1600 N ledge greenstn exposed
 on north side.

1185 E small sp. of greenstn

1721 N ledge of greenstn exposed
 facing west 10 ft high and
 50 paces long.

1770 A small ledge facing west
 1830 N 1195 E small exposure
 + facing south 15 paces long 1 ft
 high.

High precipitous ridge to
 continued north to line 1950 N
 to swamp.

Run East 250 E to the 1500 E line
 High precipitous hill south of line
 to 1475 E

✓ 17873 Took spec 17873 at small ledge
 where we turned south.

30 S to high precipitous hill
 This makes a V with ridge
 from which just took spec.
 Exposures very thick.

160 S 1450 E exposure of greenstone
 facing north and running east
 and west 50 paces

280 S 1470 E large exposure of
 greenstone facing west and
 running north and south 75 paces.

Country from precipice sloping
 gradually south but with
 small knobs breaking its
 even brow

300 S ^{small exposure} right and left.

465 S 1160 E large bluff of greenish
20 ft high 50 long

also 1130 E small cyp of same
505 S or line passed over bluff
and into a ravine. Bluff 20 ft
high at highest point 50 paces
long.

✓ 17874 Took Spec 17874 & pros facing
west greenish 505 S.

505 S precipitous ravine 20 ft
sloping rapidly to lake
growing higher in East.

670 S over ridge

760 S & small stream connecting
lakes. Turned east.

1700 E small cyp of greenstone on
north side of slope.

1750 E on hill which descends
rapidly into lake east of lake
Cally - Turned north.

1340 N 1770 E top of ridge and
ledge of greenstone.

1380 N 1720 E small ledge of
greenstone.

1435 N 1800 E large cyp. of greenstone

1500 N 1730 E small cyp of greenstone.

1635 N 1700 E large " "

NE 1/4 14

T. 47

17876

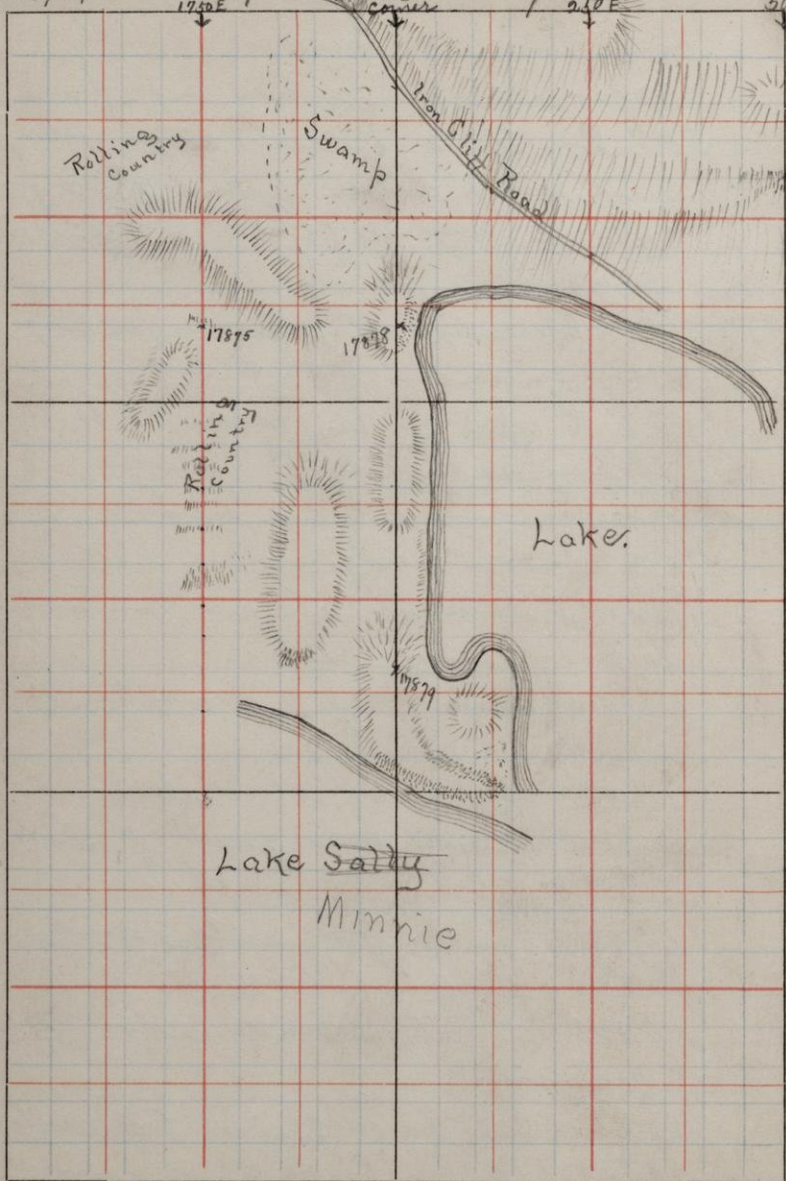
17877

Sec. corner

R. 27

247E

500E



southern end of ridge

1600 N passed over small L & p.

4 ft high 15 paces long facing
East. Loop Spec. 17875

1795 N 1730 E small & p facing
north.

Continued north over short and small
ridges which I plant as rolling
country.

48 paces north of section line is a
nice highway. Iron Cliff Road

Run east 1760 E just south of
line & p. of greenish facing north.
8 ft high 35 paces long.

Continued east to corner. This is
87 paces north of highway

Found the Compassman to be
30 paces short in running east
but all right in his north and
south line.

Line strikes highway at 1940
road swing to the south-east

17876 125 west of Fork spec 17876

17877 1920 E 10 N of N E cor Sec 14 17877

47-27 Green line. They have an
apparent bedding with a dip 46° S
Strike due E & W. Ledge runs

along road 125 paces dropping
into swamp road forming boundary.

Aug 11 1891

Started from the n w cor Sec 13 T47
R 27. The corner is 76 paces north
of highway. The post is standing
and has witness lines. 11 & 12
Strike swamp from corner 76 S

261 S swamp ends.

Gradual ascent of hill bordering
lake

'17878 400 S took spec 17878 from precipice
dipping into lake. Greenstone 66 S +
1930 E small y.p. forming east

700 S gradual ascent of hill

860 S precipitous descent of hill.

Took spec of greenstone 17879 large
y.p. from

'17879 960 S lake

860 S we run east to lake.

200 E of west line of Sec 13. 120 E small
precipice of greenstone.

890 S 200 E little knob of greenstone
in swamp 20 paces in diameter.

Returned to corner 31 paces south
of corner is a very small y.p. from

T.

R.

The remainder of the work so unsatisfactory
from lack of opportunity to correct
up that Dr. Bayley had it reworked
from another camp.

of the actinolite schist found on road
west. At section corner there is also
a small greenstone ledge.

Run east 250 paces - line running
along top of ridge

Run south end 215 S found a
tan low knot of greenstone 15 paces
in diameter

285 S Road

350 S Lake

Squared off east.

275 E cross road very small
4 p. of greenstone on road a little
south of line.

500 E turned north.

1685 very small 4 p. of greenstone

1710 N 460 E of SW cor Sec 13-47-27

Small flat 4 p. of greenstone 10 paces
in diameter

1745 N small 4 p. of greenstone

530 E

1800 N large bluff + some of
greenstone facing south.

1905 N end of ridge

450 E small 2 p. of greenstone facing
north. Ridge descends on all sides
from here. Ridge west end valley

between

2070 N 500 E small 4p
greenstn facing south. Took Spec

17880

17880

1255 710 E small 4p of greenstone
300 S 670 large 40 ft high bluff

of greenstone running south west
Declining to the bluff descends
of the high country west of us which
has been comparatively level
excepting the slight decline to the
south.

Our line at present being in
low but level country dipping
very gradually to the lake south
660 S crossed streamlet which
runs into lake

680 S gradual rise of ground
to 4 pines of greenstone

760 S small ledge facing west

690 E and 760 S more ledges

760 S hill begins to slope to
the lake

690 E and 960 S a large precipice

17881

of greenstone facing south west
Took Spec 17881

150

1035 S $\perp$ ledge greenish facing south.
5 ft high 50 paces long

1065 S $\perp$ greenish facing south.
15 ft high trend SW & NE
large ledge 100 paces long

1090 S Road

1100 S to lake

Small ledge in lake south west of
here

800 East large ledge of greenish
facing west and south

950 East 1100 south flat 4 p. greenish

930 N 975 E small greenish ledge

990 N 1000 E ledge greenish dipping
precipitously into low land north.

1145 N end of hill which has been
sloping in from the west

1245 N very large ledge of greenstone
and much disturbed from original
position. 150 paces in diameter.

Ridge runs S east of us and
running north east.

1300 N. base of ridge

1400 N. & north side of base of ridge

Country slopes away to the west
gradually

Gradual ascent here to the north

1625 N large & prime of greenstn
almost at top of high hill.

The ascent to this point has been
very gradual. The ledge here makes
it precipitous for about 30 ft.

1700 N small & prime of greenstn
slight slope here to the west then
level. Slight slope to north
then ascending

1735 N another small ledge of
greenstn.

1775 N 475 E small ledge facing
south west $\pm$ 2 ft high.

10 paces long.

1030 N large & prime of greenstn
3 ft high 15 paces long

Hill here strikes a level

1850 N greenstn flat diameter 6 ft

1890 N a little & p. sloping to
the south.

1900 N a little chap

2000 N a top of ridge

Squared off to 1250 E

1190 E of cor. small ledge

17882 1250 E both spec 17882 greenstn

230 S small & p. of greenstn 10 ft

in diameter.

260 S 1200 E 4 pines about same size 10 ft in diameter.

330 S wall of greenish

10 ft high facing SE 100 paces long

355 S a precipitous descent of hill and ledge.

375 S ledge facing south.

430 S knot of greenish not very high and about 50 paces in diameter.

480 S small 4 pines

1230 E flat 20 ft in diameter 4 pines

530 S 1220 E a very long 4 pines of greenish.

570 S 50 ft bluff East of pines and is 100 paces long

17883 Took Spec 17883

655 S 1100 E end of low ridge many mts & SE

660 S Swamp

800 S across Swamp and small ledge Swamp west of line almost entirely

825 S small 4 p of acuminata Schis

17884 Spec 17884

950S 1230 E small 4 pm.
980S small - 1 of 2 greenish



Work (see before) put in that
specimens may be accounted for

NW 1/4 14 T. 47

R. 27

See
Corner
NW 14

200 E

* 17885

Lake
Sally

Run south from road about corner
just no cor sec 14. 47. 27

This is on a ridge sloping precip.
clively on its north west side into
Lake Angelina and trending
almost east and west

Foot of hill about 150 steps line
passes over rock pile just w
Descent steep.

2305 top of high hill

390 S top of hill which is gully
slope and near where top is a
precipice of greenstone about 20
ft high

Exposures in this neighborhood
have been taken by Dr Bayleys
topographical party

500 S 30 E 80 ft 1 exposure of
greenstone facing east

595 S begins descent to lake

660 S 25 E 1 exposure to the south
and west of small roll as it
dips into lower country.

665 S small exposure of greenstone

680 S large exposure of greenstone
and principally descent

6955 25 E 15 ft $\perp$ 4 p.m. facing East

795 lake Sally

Iguana of 200 faces afli
running back north 100.

50 faces of 2 ft $\perp$ wall facing
South ^{East} and about 50 faces beyond
of us

1300 N foot of ridge

1360 N came to $\perp$ 4 p. m south.
and sloping up from on west. Took

17885 Spec 17885 greenish

(1360 N) $\frac{1}{2}$ ft
200 E 14

1375 N top of ridge and 4 p.m

1375 N 150 E 40 ft precipice
running south west to lake

710. 1440 N foot of hill

See map
of p. 40.

1470 across swamp. 15 faces west
of low swamp ends.

1525 N foot of greenish up from
on south side 12 ft high

1525 N 170 E Small ledge.

1540 N 170 E

" " 130 E bluff of greenish. This
is 30 ft high and east end of
ridge.

1580 N $\perp$ 4 p.m. of greenish
8 ft high 10 faces by running

NE 1/4 15 T. 47

R. 27

Sec
Corner
NW
14

200W

1/2 mi

Swampy

Lake
Sally

Slope of hill begins to the north
1630 N precipice passed over ~~just~~
on section line

1700 N Small c.p. greenstone

1740 N precipice descent at line
and east but more gradual to the
west.

1750 N foot of hill

1855 N foot of pp hill line on
top

Last Sun and went over to NW
cor 14-47-27

500 S of cor small ledge greenstone
Turned ^{west} east at 500

200 W and 490 S small ledge.

1060 W out of swamp to base of hill

Small c.p. at base of hill

Hill quite steep here

200 W ^{turned south} not quite top of hill.

Work Spu 17886 - green stone.

580 S flat c.p. on top of hill
then sloping away to the east

620 S small c.p.

620 S 200 Ws little knot of green.

" 220 small c.p. "

675 " " "

17886

710 S 170 W flat 4 p. Hill drops
away south east very rapidly

735 S precipice fairly south
20 ft wall

755 S into ravine

775 S top of precipice same
height

800 S Small 4 p. beginning of slow descent

800 S 180 E Small 4 p

890 S 165 E very high bluff which
drops into lake

896 small 4 p. greenish.

900 S precipitous descent to the
south east - gradually toward
south west.

