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Gogebic Iron Range: [specimens] 7607-7682. No. 24 Aug. 1884

Van Hise, Charles Richard, 1857-1918
[s.l.]: [s.n.], Aug. 1884

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U. S. GEOLOGICAL SURVEY

FIELD NOTE BOOK

No. 24.

Aug. 1884

7607-7682

Gogetie Iron Range

C. R. Vanhise.

Survey of the Pre-Cambrian Rocks of the N. W. States.

INSTRUCTIONS.

1. Devote at least two pages of this note book 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 figure attached, showing the amount and inclination of the dip. Denote slaty or other very plainly bedded rocks by lines running in the direction of the strike, with figures and a dip arrow attached as before. 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 smaller spaces as 100 paces, each of the spaces between the red lines as 500 paces, and four of these large spaces as one mile, or 2,000 paces. Usually the southeast corner will be placed at the first red 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 down one space, or the map may be turned around and the north placed at the left hand side of the page.

2. On the right hand page place the notes descriptive of the exposures. Begin in each case with the number of the specimen, after which give in order 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 exposure as possible. Very often the notes for one section will cover more than one page in which case pass to the next right hand page, *repeating the map on each left hand page* as long as the notes, with regard to one section, continue.

3. Collect a specimen from each separate ledge of rock, or whenever there is a change of rock on any one ledge. In case of trips made on foot or in canoes, for long distances, neighboring ledges, unquestionably of one kind of rock, need not be sampled, the position and extent of the ledge being marked on the map, with the note that it is of a rock identical with specimen so-and-so. Under the same conditions small sized samples will be allowed, but in all other cases *large sized trimmed specimens*, with chips for slicing, must be selected in accordance with § 3, chapter IV, p. 44, Regulations of the U. S. Geological Survey. All specimens are to have numbers painted on them, in white on a black background, in camp.

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, etc., etc.

5. Forward this note book, as soon as filled, as registered mail matter, to R. D. IRVING, U. S. Geologist, Madison, Wisconsin.

#24

Sec. 3 11 + 12 T. 47 R. 47

11

x

11

12

11

1

1

1

12

Ev. #7609

x

11, 12, #7608

Thursday, Aug 7, 1884.

- 7607 Greenstone (northern trap)
Southern exposure 860 N. 100 W.
of $\frac{1}{4}$ post between Sec 7 & 18
T. 47, R. 46.
7608. Micaceous Quartzite. From
one of many angular frag- 7.
ments upturned by the
roots of a fallen tree.
16252, of the S. W. corner
of Sec. 12, T 47. R 47.
- 7609 Greenstone (northern trap)
Southern exposure 200 N. 50 W.
of the S. E. corner of Sec 11, T 47. R 47.
7610. Lean slaty and Jaspery ore
Leas pits from 8205. to 8608.
of N. W. corner of Sec. 24. T 47. R 47.
The pits also contain in
abundance the typical quartz-
ite mingled with bands
and spots of ore characteristic
of the ore belt in Range 46 & 47.
- 7611 Arenaceous Quartzite. From
pit 8605. of N. W. corner of Sec. 24.
Mass of 7611 on 50 and 100 slats
there are pits with rich exposure.

Secs 23 + 24 T. 47

R. 47

29

x2,
x2,x7610 x4.0.2
x7611 2

x7612

x7612

28

x7613 x, 2,

x7614
x7615

x7616

x7617

x2.6.0.

x7623 B. 56.

7612. Coarse Granite. Western exposure (50 feet north and south) 280S. 50 W. of $\frac{1}{4}$ post between Secs. 23 + 24, T. 47. R. 47.
- 7613 Ferruginous Quartzite like 7611. From top of 280S. 50 W. of the center of sec. 23. 47. 47.
- 7614 Quartzite slate. Small northern exposure. 376 S. of the center of Sec. 23. 47. 47. Strike W. 15° S. dip 70° N.

Granite, like 7612, 500S. of center of sec. 23. T. 47 R. 47.
This exposure contains thin seams of cherty quartzite precisely like that found in the granite in one place in sec 13. T. 47 R. 41.

- 7615 - Black Hornblende Schist (found in exposure of coarse granite) 100 S. 175° W. of the N. E. corner of Sec. 27, T. 47, R. 47

Fert pits containing typical quartzite including, I believe one 400 N. of the S. W. corner of Sec. 23 T. 47, R. 47.

Sec. 522+27 T. 47

R. 47

22

x, o.

x 7617-8-9
 x 7620 Sil 3C4 2,
 x 7621 Sil 3C1

Ht Sil 7615
6.

8, 7616

27

Rich soft ore thrown from ore
pits 400 N. 70 W. of S.E. corner
of Sec. 22. T. 47, R. 47.

7616 Granite, Western 4 paces
2308, 70 E. of $\frac{1}{4}$ post between
Sec. 22 & 27, T. 47, R. 47.

47-47 W. mill
7617 Rich Hard Ore. 110 E, 35 S, of the
point where the line between Sec.
22 & 27 strikes the Montreal River.
There is four feet of this ore upon
the north (changing wall) of the shaft
and then seventeen feet of the rich
soft ore characteristic of the
region.

7618. Quartzite. From south (foot
wall) of above shaft.

7619 Jaspery Quartzite. From north
(changing wall) of same pit.

The ore in this township and
in 22. Wisconsin is said
everywhere to have the quartzite
7618 as a foot wall, and then
jaspery banded ore as the chang-
ing wall. In 22. Wisconsin
a second belt of ore is found
800 feet north of the above

bed, and this as I understood the matter has a soft brown sandstone or sandy quartzite for the hanging wall and banded or for the foot wall. This bed of ore although rougher in 47.47. much, has not yet been found.

Test pits with rich soft ore in thick bed. 800 m. of $\frac{1}{4}$ mile between Secs. 22+27. 47.47.

7620 Quartzite and quartz-schist. From test pit 505. of 7617.

7621 Quartzite slaty schist 755. of 7617. (Test pit)

7622. One phase of jaspery quartzite found exposed in bed of Montreal River 150 m. of line between Secs. 22+27. 47.47. Strike N. 30° S. dip 70° N. There are several different phases of the rock here, almost precisely like those found at Iron Horse Hills on the Black River.

7623. Friday, Aug. 8, 1884.
Gray and black quartzite
state. From test pit 200 ft.
2252, of $\frac{1}{4}$ post between secs.
22+23. S. 47, R. 47.

Rich soft ore in test pits
center of S. W. $\frac{1}{4}$ Sec. 23. 47. 47.

Granite (Coarse pink) 5002, 1265.
of $\frac{1}{4}$ post between secs. 23+24. 47. 47.
Same 5003. 235,
Same at $\frac{1}{4}$ post.

Typical quartzite with bands
and cherts of leon ore 5002. 300 ft.
 $\frac{1}{4}$ post between secs. 23+24. 47. 47.

7624. Jaspery quartzites and leon ore
Test pit 5008. 847 ft. of $\frac{1}{4}$ post
between secs. 23+24. 47. 47.

Ran to $\frac{1}{4}$ post between secs.
25+26. 47. 47. thence from
the $\frac{1}{4}$ post between secs. 23+24;
thence 5002; thence north
but no exposures were found
until the $\frac{1}{4}$ post between secs.
23+24 was reached, when gran-
ite was found as above located.
Land, low, level and often swampy.

Sec. 524+25 T. 47

R. 46

24

Sec. 524+25

Sec. 524+25

Sec. 524+25

Sec. 524+25

Sec. 524+25

Sec. 524+25

25

Saturday, Aug. 9. 1884.

7625- Greenstone V. K. running
north 100 feet from 500 N. of
S.E. corner of Sec. 24, T. 47, R. 46

7626. Granite. Northern exposure
150 N. 125 W. of S.E. corner
of Sec. 24, T. 47, R. 46

7627. Micaceous Hornblende Schist
Northern exposure. 200 S. 125 W.
of N.E. corner of Sec 25, 47, 46.

Granite, like 7626, mixed
with layers like 7627. 360 S.
325 W. of N.E. corner of Sec
25, T. 47, R. 46. This ex-
posure has the characteris-
tic appearance of the variable
Laurium Series.

Coarse granite, like 7626,
1250 W. of the S.E. corner
of Sec. 24, T. 47, R. 46.

Granite at S.E. corner of
Sec. 24, T. 47, R. 46
Some 175 N. of this corner.

Disc. 7633

Sec. 5 28 + 29 T. 47

Disc. 7643
35, 7644

R. 45

Disc. 7628

Disc. 7630

Disc. 7629

Disc. 7631-2

29

28

Disc. 7632

Sunday, Aug. 10, 1884
Greenstone. 150° E. of S. W.
corner of Sec. 19, T. 47, R. 46.

7628 Mica Schist. Northern
exposure. 300 S. 78° E. of the
N. W. corner of Sec. 29, T. 47, R. 46.

7629 Coarse Muscovite Granite,
75° N. 20° W. of 1/4 post between Secs.
28 & 29, T. 47, R. 46. This granite
is cut by veins of very coarse
pink granite, the crystals of
feldspar often being more than
an inch across. These veins
vary from one to two feet in
thickness.

Granite, like 7629, 197 S. 10 W.,
of 1/4 post between Secs. 28 & 29.

7630 Granite, Western exposure
175° N. 47° E. of 1/4 post be-
tween Secs. 28 & 29, T. 47, R. 46.

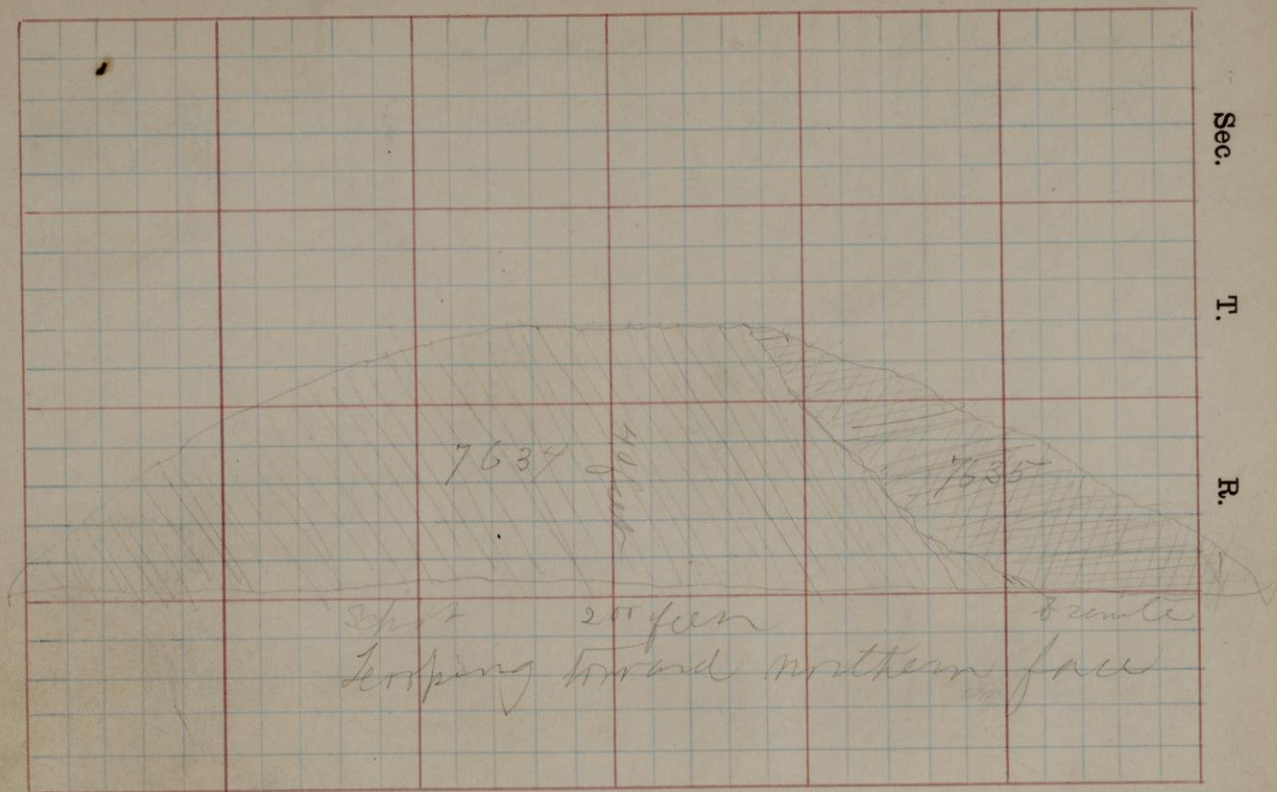
7631 Coarse Muscovite Granite
500 E. of 1/4 post between
Secs. 28 & 29, T. 47, R. 46.

7632 Hornblende Mica Schist.
two phases of - interlamina

Sec.

T.

R.



ted with 7631, irregularly.

7633 Mica Schist. Northern exposure
500 W. of N.E. corner of Sec. 28.
T. 47 R. 43. Strike E + W. dip 80° S.

7634 Mica Schist. From vertical northern exposure 200
feet long, 40 feet high, the
center of the face of which
is 350 ft. of the N.E. corner
of Sec. 28, T. 47 R. 43. The west-
ern end of this exposure is
composed of intrusive granite
which has cut the schist in
a diagonal manner as shown
by diagram

7635 Granite, from west end of above
exposure.

7636 Mica Schist. Northern exposure
135 ft. 80° E. of the S. W.
corner of Sec. 22, T. 47 R. 43.
Strike W. 150° S. dip 80° N.

7637 Mica Schist - two phases of -
interstratified with each other
1500 ft. 75° E. of S. W. corner of
Sec. 22. T. 47 R. 43.
Strike W. 30° N. dip 75° S.

Sec. 22 + 27 T. 47

R. 45

$\frac{5}{15}$ 7639
7639 *Sc. 10

7638 *Ht. Sc.

Sc. 22

AS
Ht. 7636
15

Sc *

Sc *

Sc *

7634-5
Ht. Sc. 10

*Sc.

X

7646
7645 Sc.

27

Sc 7647

7639 *Sc

Mica Schist like the pass
was also observed at the
following points

1450 ft. of $\frac{1}{4}$ pass between Sec 22+27

1220 ft. " " " " " " " "

1000 ft. " " " " " " " "

270 ft. " " " " " " " "

175 ft. " " " " " " " "

125 ft. " " " " " " " "

575 E. " " " " " " " "

All in T. 47 R. 46 - " " " "

The exposures on the line run
are practically continuous; for
at numerous points to the high
and left exposures were seen which
were not located.

7638 Hornblende Mica Schist
1220 ft. of $\frac{1}{4}$ pass between Sec.
22+27 T. 47, R. 46.

7639 Mica Schist. 100 ft. of $\frac{1}{4}$ pass
between Secs. 26+27. 47. 48.

7640 Granite. Comprising most of large
mass 50 ft. 100 E. of $\frac{1}{4}$ pass be-
tween Secs 26+27. 47. 48.

7641 Greenstone. Cutting the above
granite. The exposure from
one side for a thickness of

Sec. 323 + 26 T. 47

R. 43

23

B. 7640-1-2
bu.

26

about 20 feet in composed
of this greenstone.

7642. Contact specimen of greenstone
and granite from same out-
crop.
7643. Granite. Base of Bluff with north-
ern exposure. 1600 E. 50 S. of W.
1/4 part of Sec. 28. T47, R46.
- 7644 Mica Schist. Which caps
the above granite and com-
poses three fourth of the mass
of the exposure from which
7643 is taken.
- 7645 Mica Schist. Northern ex-
posure. 802. of W. 1/4 part
of Sec. 27. T47, R45
Sharp Bluff
- 7646 Gneiss - Five phases of irregularly
interlaminated with each
other. Exposed in bed of
Sunday Lake River 1602.
50 N. of W. 1/4 part of Sec. 27
47.45.
- 7647 Mica Schist. Western exposure.
50 N. 50 W. of east 1/4 part of
Sec. 27. T47 R45.

Sec. 25+36 T. 47

R. 46

25

7648

36

Monday, Aug 11, 1884.
 The following run was
 made but no exposures found.
 Started from the west $\frac{1}{4}$ post
 of Sec. 26. T. 47, R. 43 and
 ran to the center of Sec. 26;
 thence south to 500 S. of the
 the north $\frac{1}{4}$ post of Sec 36;
 thence east to the line
 between Sec 35 & 36; thence
 north to the N. W. corner
 of Sec. 36; thence east to
 the N. E. corner of the same
 section thence north to
 near the N. E. corner of
 Sec 23. T. 47. R. 43.

Tuesday, Aug. 12, 1884,
 During the forenoon the fol-
 lowing run was made but
 no exposure found. Starting
 near the north west corner
 of Sec. 30 T. 47, R. 44, we ran
 to the S. E. corner of the same
 section upon the railroad;
 thence east to the N. E. cor-
 ner of Sec. 32; thence south
 to the S. E. corner of the same
 section; thence west 1500 steps.

- 7648 Greenstone. Northern face
 of bluff runs several hundred
 feet or 150 ft from in both
 directions from S. E. corner of Sec. 30
 T. 47, R. 44.
7649. Granite 6002 of S. $\frac{1}{4}$ part
 of Sec. 33. T. 47. R. 44.
 Granite 7002. of S. $\frac{1}{4}$ part.
- 7650 Granite 2162, of the S. W. corner
 of Sec. 34. T. 47. R. 44.
7651. Mica schist. Western face
 of vertical bluff 20 feet high
 8802 of the S. W. corner of

Sec. 34. T47 R44.
 Strike E 35° N. dip 70° S.

Mica Schist, 4a dth like 7651.
 From eastern face of vertical
 bluff, separated by a small
 stream from 7651. S 65° E.
 of the S. W. corner of Sec 34. T47 R44.
 Strike E 15° S.

Wednesday Aug. 13, 1884.
 7652 ^{from} mica schist. High bluff,
 vertical face 40 feet high,
 western and southern exposure
 are each continuous for
 several hundred feet.
 The middle of the west face
 is 100 W. of the S. E. corner
 of Sec. 34. T 47. R. 44.
 Strike N. E. + S. W. dip 75° S. E.

7653 Coarse granite. From vein
 two feet wide cutting 7652
 approximately in the direction
 of the strike of the schist.
 The walls of the vein & dyke
 are perfectly defined with a
 crack between the granite
 and schist.

7654 Coarse granite. From vein
 eight feet wide cutting
 7652 about 100 feet south
 of 7653. The strike of the
 dyke is W. 20° S; hence it
 cuts the plane of Cornin-
 tion in the schist at an
 angle of 25°.
 South and west of this
 point several other granite
 dykes were observed, the

Sec.

35-

2

T.

47

46

R.

44

44

35-

45C1

20 45SC1

45SC1

470SC1

45C

30 45SC1

45C1

45C1

45C1

45C1

45C1

45C1

45C1

45C1

45C1

45C1

45C1

45C1

45C1

45C1

45C1

45C1

45C1

45C1

45C1

45C1

45C1

45C1

45C1

45C1

X 45SC1 45SC1 45SC1
 45SC1 45SC1 45SC1
 45SC1 45SC1 45SC1

SC1 7661

X

20 45SC1

45SC1

45SC1

45SC1

45SC1

45SC1

45SC1

45SC1

45SC1

45SC1

45SC1

45SC1

45SC1

45SC1

45SC1

most of them intermediate in thickness between 7653 and 7654, although one was observed as thick as the latter. While most of them conform somewhat to the schistose direction they all cut it at an angle, which sometimes is quite large.

Hornblende

- 7655- Mica Schist, North western 4/5 point 200 E of the S. W. corner of Sec. 35, T. 47 R. 44
Strike N 35° S. dip 80° S.

Mica Schist, like last, 400 E. of S. W. corner of Sec. 35, T. 47 R. 44.
Strike N 20° S. dip 80° N.
Same 460 E.

Hornblende

- 7656 Mica Schist. 500 E. of S. 1/4 point of Sec. 35, T. 47 R. 44.
Strike N. 30° S. dip 72° S.

Mica Schist, like 7656, was observed in Sec. 35, T. 47 R. 44 at the following points

120 N. of S. 1/4 point.

230 N. " " " "

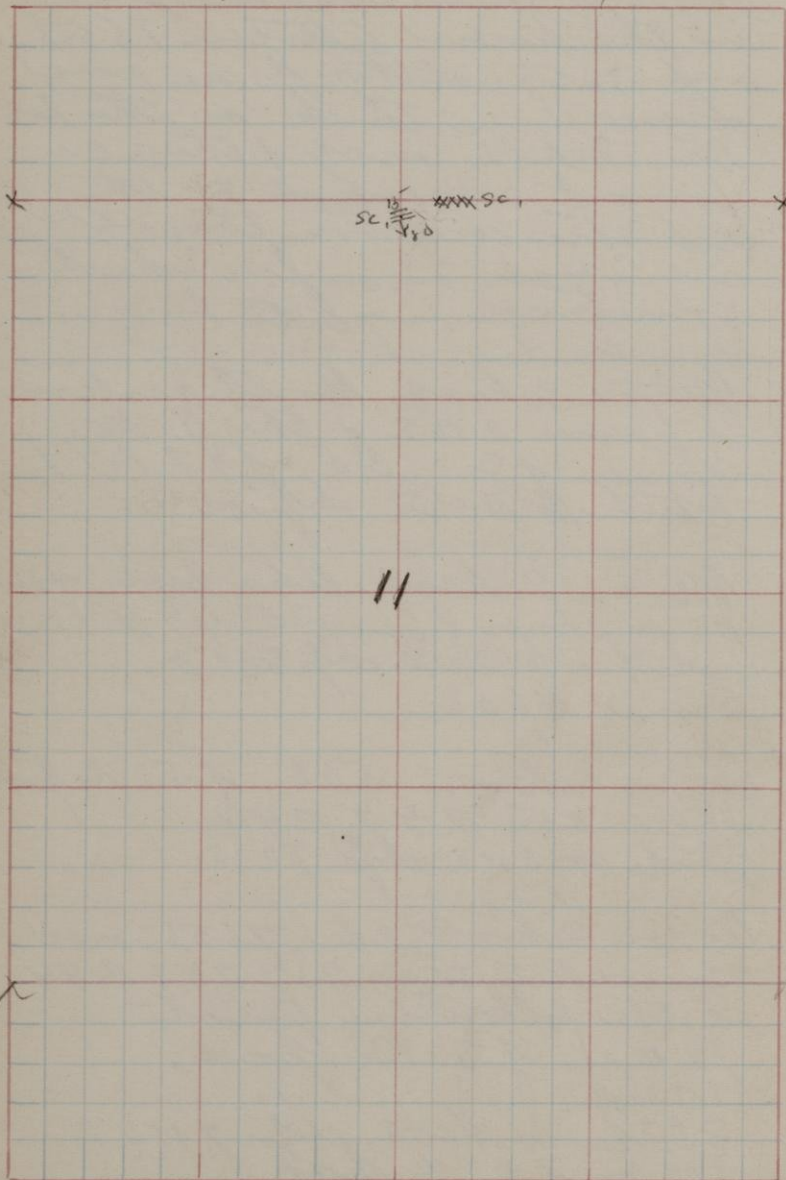
Strike N 40° S. dip 70° S. E.

300 N. of S. 1/4 point.

Sec. //

T. 46

R. 44



500 ft. of S. $\frac{1}{4}$ sec.
Strike N. 20° E. dip 63° E.
Also in bed of creek.
850 ft. of S. $\frac{1}{4}$ sec.

Mica Schist, like 7656, was
found in sec. 2. J46. R44
at the following points
140 S. of N. $\frac{1}{4}$ sec.
Strike N 40° E. dip 80° E.
The laminae of this exposure
are somewhat contorted, a
thing which had not before
been noticed.

Humboldt

7657 Coarse Mica Schist, Southern
exposure 290 S. of N. $\frac{1}{4}$ sec
of sec. 2. J46, R44.

Humboldt

7658 Mica Schist, Northern
exposure 800 S. of N. $\frac{1}{4}$ sec
of sec. 2. J46. R44.
Strike W 20° S. dip 70° S.

Mica Schist. like 7657, at
the following points.
In sec. 2. J46 R44

900 S. of N. $\frac{1}{4}$ sec
1397 S

Strike W 35° S. dip 70° S.
In sec. 11, J46 R44.
60 S. of N. $\frac{1}{4}$ sec.

Sec. ³⁶₁

T. ⁴⁷₄₆

R. ⁴⁴₄₄

36

* * 7662 sc,

767 $\frac{5}{10}$ a.s.c.

* 52

$\frac{10}{10}$ 52
* 52
* 52

* 52

Strike W. 15° S. dip 80° S.
 100 E. 1 N. 1/4 part con-
 tinuous to 200 E.
 In Sec. 1. T. 46, R. 44
 500 E. 500 N. of the S.W. corner.
 Continuous to 500 E. 600 N.
 500 E. 750 N. of the S.W. corner.
 500 E. 800 N. " " " " "
 500 E. 850 N. " " " " "
 500 E. 885 N. " " " " "
 Strike N. 80° E. dip 65° E.
 500 E. 1100 N. of the S.W. corner.

7659 Marble Mica Schist.
 500 E. 1380 N. of the S.W. corner
 of Sec. 1, T. 46, R. 44
 Strike W 5° S. dip 70° S.
 Inter laminated with
 coarser material like
 7657

7660 Swiss - two phases of - 650 W.
 400 S. of N. 1/4 part of Sec. 6.
 T. 46, R. 43.

7661 Marble
 Mica Schist, 500 E. of S. 1/4
 part of Sec. 33, T. 47, R. 44.

7662 Mica Schist, 150 E. of the
 S.W. corner of Sec. 66,
 T. 47, R. 44.

Sec. ³¹
6

T. ⁴⁷
46

R. ⁴³
43

31

2, 7669

25.

+
Sc. 7663 B. 7664

Ent. 7665-1

8 7668

8 7668

7663 B. 7664

- 7663 Mica Schist. 25 E. of the S. W. corner of Sec. 31. T 47. R. 43.
- 7664 Gneiss. 300 E. of the S. W. corner of Sec. 31. 47. 43.
- 7665 Gneiss 960 E. 30 S. of the S. W. corner of Sec. 31. 47. 43.
- 7666 Granite. Mass several feet thick at base of preceding exposure.
- 7667 Granite. 180 E. of S. $\frac{1}{4}$ post of Sec. 31. T 47, R. 43.
- 7668 Granite 460 E. of S. $\frac{1}{4}$ post of Sec. 31 T 47 R 43.
Same 900 E. of S. $\frac{1}{4}$ post.
(like 7668)
Granite was observed in Sec 32. T 47 R 43 at the following points:-
50 N. 10 E. of the S. W. corner,
200 N. 20 E " " " " "
360 N. 50 W " " " " "
150 E " " " " "
- 7669 Greenstone. 750 N. 75 W. of the S. E. corner of Sec 31. 47. 43.

Sec. ³²
5

T. ⁴⁷
46

R. ⁴²
43

32
7676-7

6

6

32
7676-7

6
6
6

7672

6

7670

6

6

6

6

6

5

7170 Coarse Gneiss 300E of the
S. W. corner of sec. 82, 47, 43.

Granite, like 7668, 7572 of the
S. W. corner of sec. 82, 47, 43.

Sec. 2930 T.

47

R.

43

29

30

~~10/10/76 75-~~
~~14/10/76 74~~
~~7/10/76 75~~

Thursday, Aug. 14, 1884.
 7671 Granite Correl. from
 knob 50 E. of S. $\frac{1}{4}$ pr. 2
 of Sec 32, T. 47, R. 43.

Granite, like 7671, was
 observed at the following
 points.

On Sec. 32, T. 47, R. 43.

100 E. of S. $\frac{1}{4}$ pr. 2.

350 E. " " " "

400 E. " " " "

688 E. " " " "

836 E. " " " "

160 N. of S. E. corner

380 N. " " " "

500 N. " " " "

540 N. " " " "

660 N. " " " "

800 N. " " " "

At S. $\frac{1}{4}$ pr. 2.

200 N. of S. $\frac{1}{4}$ pr. 2.

500 N. " " " "

7672 Granite, showing junction
 with and portion of Coarse
 granitic vein. 880 N. of the
 S. E. corner of Sec. 32, T. 47, R. 43

7673 Gneiss - three phases of -
 20 N. 20 W. of the S. E. corner

of Sec 29. T. 47 R. 43.

The different phases are inter laminated with each other; however the more schistose variety in one place for a width of 15 feet across the strike excludes the others, and here it is so regular that strike and dip could be taken.

Strike N. W. & S. E. dip 80° N. E.

Granulitic mica Schist

7674 Gneiss. 250 N. 10 W. of the S. E. corner of Sec. 29, 47, 43.

7675 Greenstone. 350 N. 25 W. of the S. E. corner of 29. 47, 43. The northern end of this cone bluff is greenish. This has been located and specimen taken at a previous day.

7676. Greenstone. 900 N. 870 E. of the S. W. corner of Sec 32, T. 47, R. 43.

7677 Granite. 890 N. 870 E. of the S. W. corner of Sec 32, 47, 43.

Sec. 7

T. 47

R. 45

7

7680
7681
7682

x 20

7678
7679

Specimens located and forwarded
by Joseph White.

- 7678 From large outcrop 800 feet
7679 long, 200 feet wide and 50 feet
high, located 500 steps
west, 850 south of road
1/4 mile of Sec. 7, T47, R45.
- 7680 Lean on from top pit 200
7681 steps west of 7678 and 7679
- 7682 From same pit from which
7680 and 7681 are taken.

