

Sept 29/90

N. Granville Section

Base of section about 1/4 mile above North Granville bridge crossing the Mettance Halling of the river, south shore. At the bridge to for some distance above it dark argl & sandy shales ^{can be} ~~much~~ disturbed, ~~to dipping~~ ^{at} ~~at~~ high angle. Then a ~~covered~~ ^{covered} shale to dark argl-shale dipping 10° E, St. N. 25° W.

1) Dark argillaceous & more or less micaceous shale

a. shale 10-

b. Compact, hard, gray sandstone in 3 layers 10

St N. 10° W. 25° E.

c. Dark argl & sdy shales 11.

21

2

at this point a thrust
plane or fault is met
with curving upward
to the west



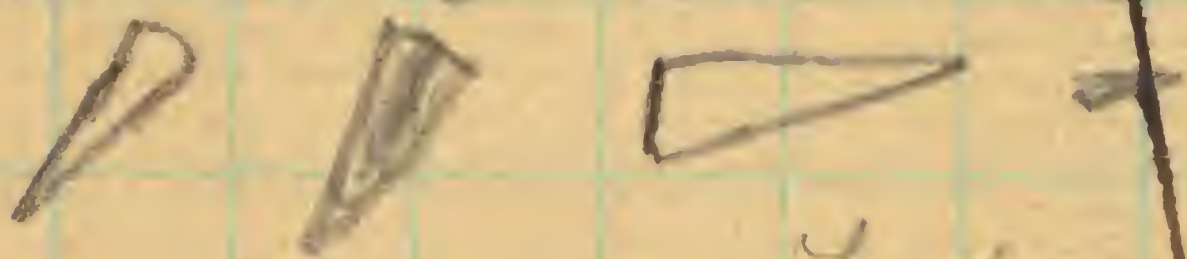
with the strata on the eastern
side dipping from it at a
higher angle than

2, dark argillaceous shale
St. N. 60° W. with 20° N. E.

at a distance of 50 feet
from the fault the str
is N. 25° W. with 15° E.

at 75 feet ^{St. N. 20° W.} with 10° E.
+ lowers to 5° E. above.

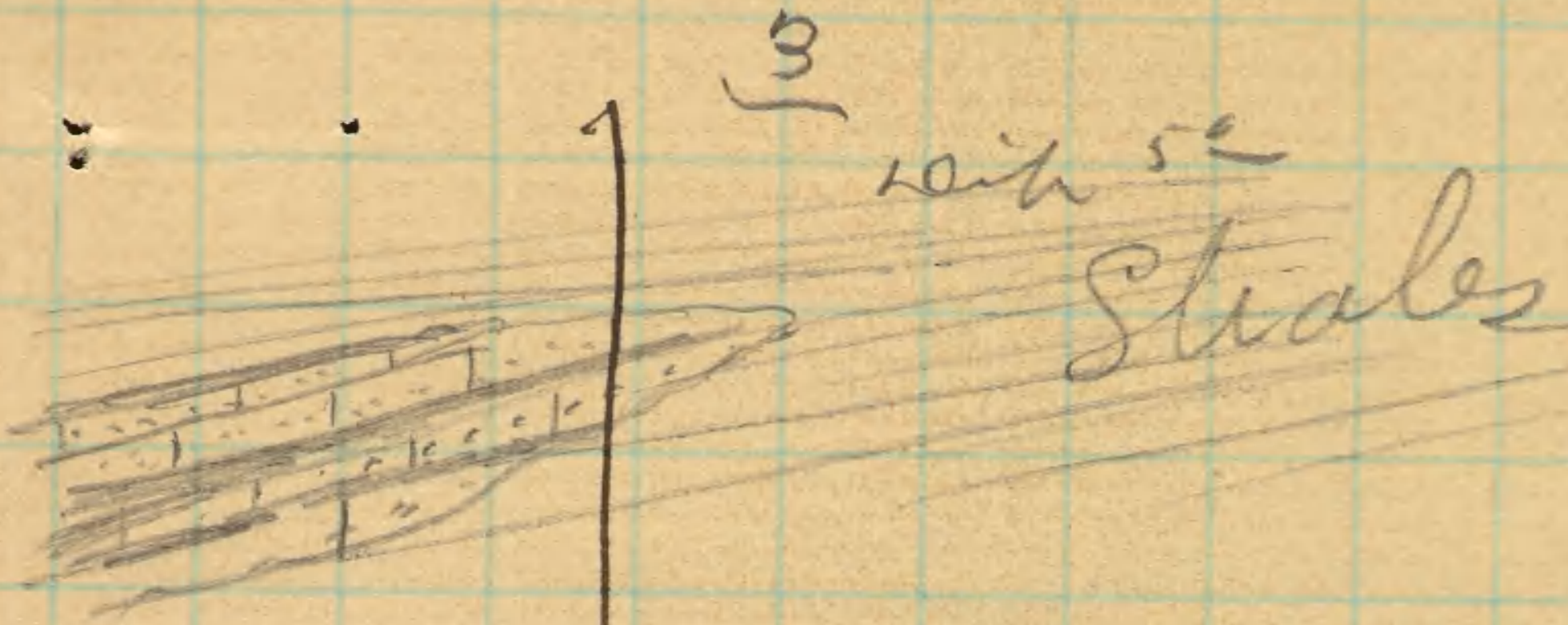
at 26 feet found
Salterella or Halbert-
tella in the shale



Total shale,

~~44~~

60



a ~~thin~~ wedge shape mass
 of sandstone comes in in
 the shale as in above
 sketch + forms reefs in
 the river. My first
 impression was that it is
 a mass of sd. thrust
 over onto the slate but
 a closer examination leads
 to form the view that it
 is the west end of a
 lenticular mass of sandstone

3 Thick bedded gray quartzitic
 sandstone slightly calcareous
 sandstone, weathering to a
 rough surface. Full of vertical
 veins of quartz & decomposing

4
to reddish, coarse rotten
rock.

a. Sandstone with shaly
partings.

12

b. mostly siliceous + argil
shale with occasional
layers of a.

Str. N, 30. E, Dip 10. E. 38

50

4. Dark shales with inter-
bedded bluish black &
gray fossiliferous lime-
stones. Str. N, 15 E, Dip 15 E

Microdiscus tacanica
Linnarssonia tacanica
Thalithellus micans
Lingulella granvillei.

This same fauna occurs 2
miles south on the strike
contains (see list of fauna
2 mi S.S.E. of A. Granville.

The dip increases to 20°
25° + up to 30° as it
passes into No. 4. ^

5.

$$\begin{array}{r} 9 \\ 45 \\ \hline 51 \end{array}$$

$$\begin{array}{r} 155 \\ 66 \\ \hline 121 \end{array}$$

13

(a) Dark shale with l- 11.
 (b) " " " " " "

• near top 49.

(c) Thinly laminated dark greenish gray shaly slate. (An old mill dam & low falls

St. N. 12° E. Dip 20° 51

~~(c)~~ ~~increasing~~

(d) Dark argl. slabs with numerous interbedded bluish black l- 44.

The dip varies in this bed & there is considerable disturbance within the bed. but as seen in the low cliff on the north shore of the river the average dip is 30° to 25°

(e) Dark argl. shaly slates with a few thin layers of sandstone near bottom. Dip 30° at base increasing to 35° at summit. 66.

Total of

$\frac{6}{4}$

221.

5. Massive bed of ^{gray} hard, compact, quartzitic sandstone - ~~with~~ ~~one parting of shale~~ -

sd. - 96 dip 35° E.

96

On the north side of the river a second band of sd - about 5 feet thick comes above ~~the~~ ~~thin~~ bed of shale

6). Thinly laminated greenish gray shale passing into a dark argl - & arenaceous shale. ~~Massive~~ calcareous & with many flat ^{small} concretions of a dark shaly matrix -

(a). This bed forms the lower portion of the rapids below the Falls.

16

~~88,~~

17

85

8

93

at 44 feet passes into a
greenish fissile shaly
slate 44

(b) Green shaly fissile slate
somewhat irregular but
fining on average
dip of 30° increasing
to 38° (with numerous ameboid
trails) 90
St N. 20° E.
dip 35° E

(c) more coarsely laminated
greenish argl-arenaceous
shaly slate
St N. 20° E. dip
40° E

an 38 feet hard sandstone
layers begin to come in,
and they form the ~~88~~
~~(d)~~ ~~form~~ the hard irregular
beds of the Mettance
falls. 87

$$\begin{array}{r} 48 \\ 789 \\ \hline 826 \end{array}$$

$$\begin{array}{r} 48 \\ 240 \\ \hline 265300 \end{array}$$

(d) Greenish fine slate with
~~bands of~~ layer of sandstone
near the base. At 300

feet they sandy, cherty
like layers become more
numerous & form a reef
in the river - 1/2 mi below
the Luthville bridge.

The greenish shaly slate
extends as up to Mr
Halls quarry below
his point mill where
purple slate appears.

St N + S. Dip 40° to 50° E 565

e. Green & purple beds of
shaly slate 35.

~~Estimated~~
Greenish shaly slate
estimated thickness 100.

Total of 5 825

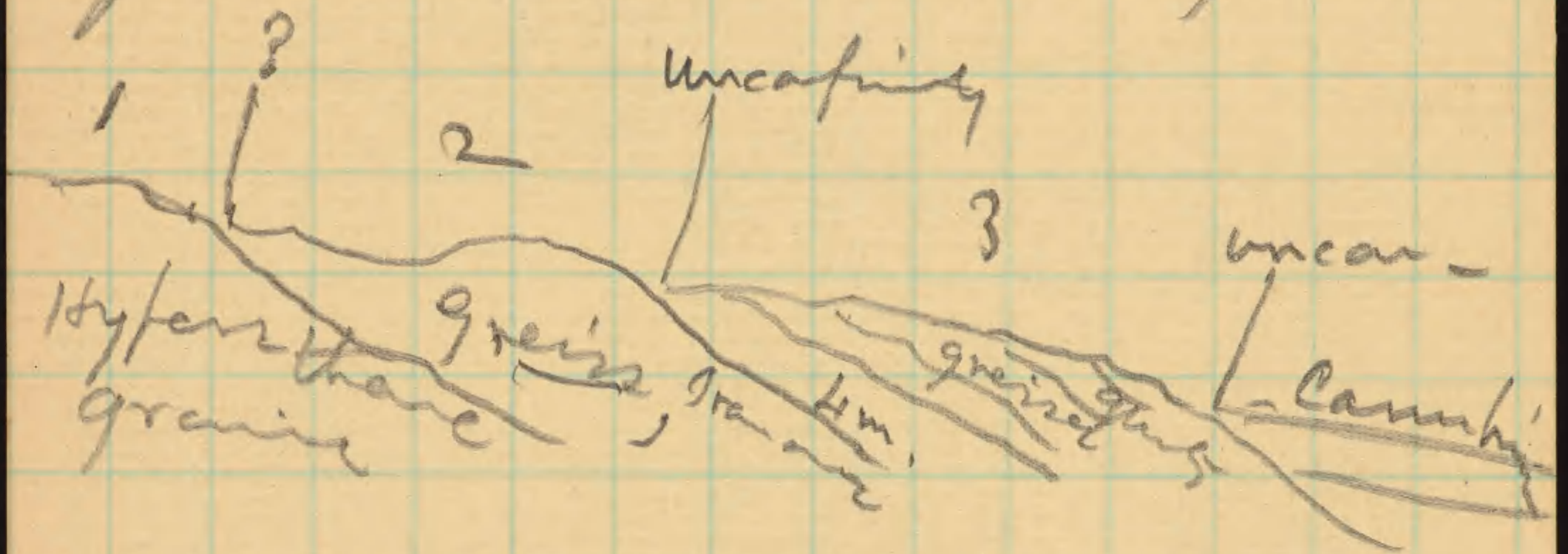
3 Aug 30/90

On the road a little north of the Cheever Iron bed. N. of Park Henry the crystalline limestone is in bedded layers & subjacent to a goniatiferous, hornblendi-
gveias. The conformity of the two series is evident.

a little further north near a chapel or school-house & a quarry the l- is in layers. To the east of the quarry it apparently rests unconformably upon a hornblendi-
gveias. At the quarry on the north side a band about 3 feet thick contains brida in abundance.

4

The Adirondack
series to me is as
follows to day



Aug 4/90
No. 1. is the main mass
of granite (hypersthene)
that forms the great
central mass of the
Adirondacks. About this
on the flanks, a light
colored gneiss (?) occurs
in which the Port
Henry ore beds occur.
This series also contains
a dark hornblende
gneiss in more or

less regular layers.
No. 3. is ^{at the} the
crystalline limestone in
which boulders of
gneiss, quartz, etc occur
that belong to the
subjacent series, above
the limestone bedded
gneisses of various kinds
occur in thin bands
of quartzitic layers
which that were
mistaken by Emmons &
Mather for Potsdam
grading down into
gneiss!

Record of Specimens -

No. 1. Granite from central
area of the Adirondacks
2 miles east of Beede's
on road to Port Henry, Essex
Co., N.Y. A coarsely crystalline

6
variety in which the
feldspar crystals are
large.

No. 2,

Crystalline limestone (Algonkian)
seen 200 yds N. of Cheever
ore bed on roadside
at "Marble quarry" N. of
Port Henry, N.Y. The
large crystals of serpentine
are unusual especially in
certain local areas.
The graphite, mica & calc-
spar occur in other
localities as the predominant
mineral, respectively over
the serpentine.

No. 3,

Same locality as 2.
Graphite more predomi-
nant.

7, Aug 6/90

Photo. 5 + 6, Aug 6.

Thin of elongate
~~mass~~ of

embedded in

crystalline l - on road -
side 3 m N. of Park

Henry, a little off
from main road on side
road.

photo -

No 11 or 12, Boulders in
crystalline l - same
locality as 5 + 6.

photo

No. 10. Interbedded layers
in crystalline l -
Same locality as 5 + 6.

Spec. No 4,

From clargate boulders
photographed No 576.

No 5. Contact between
thin layer of garnetif.
crans greiss & crystalline
l., photo No 10,

No 6. Interbedded layer
in crystalline l. - greiss
with garnet, tourmaline,
mica, etc,

No 7. Contact between
crystalline l. & thick
layer of interbedded
greiss.

8. Massive bed a'

9

Specimen 4-8, from
3 mi N. of Port-
Hemmy, South of
Cheever ore bed
on road side leading
west from main road

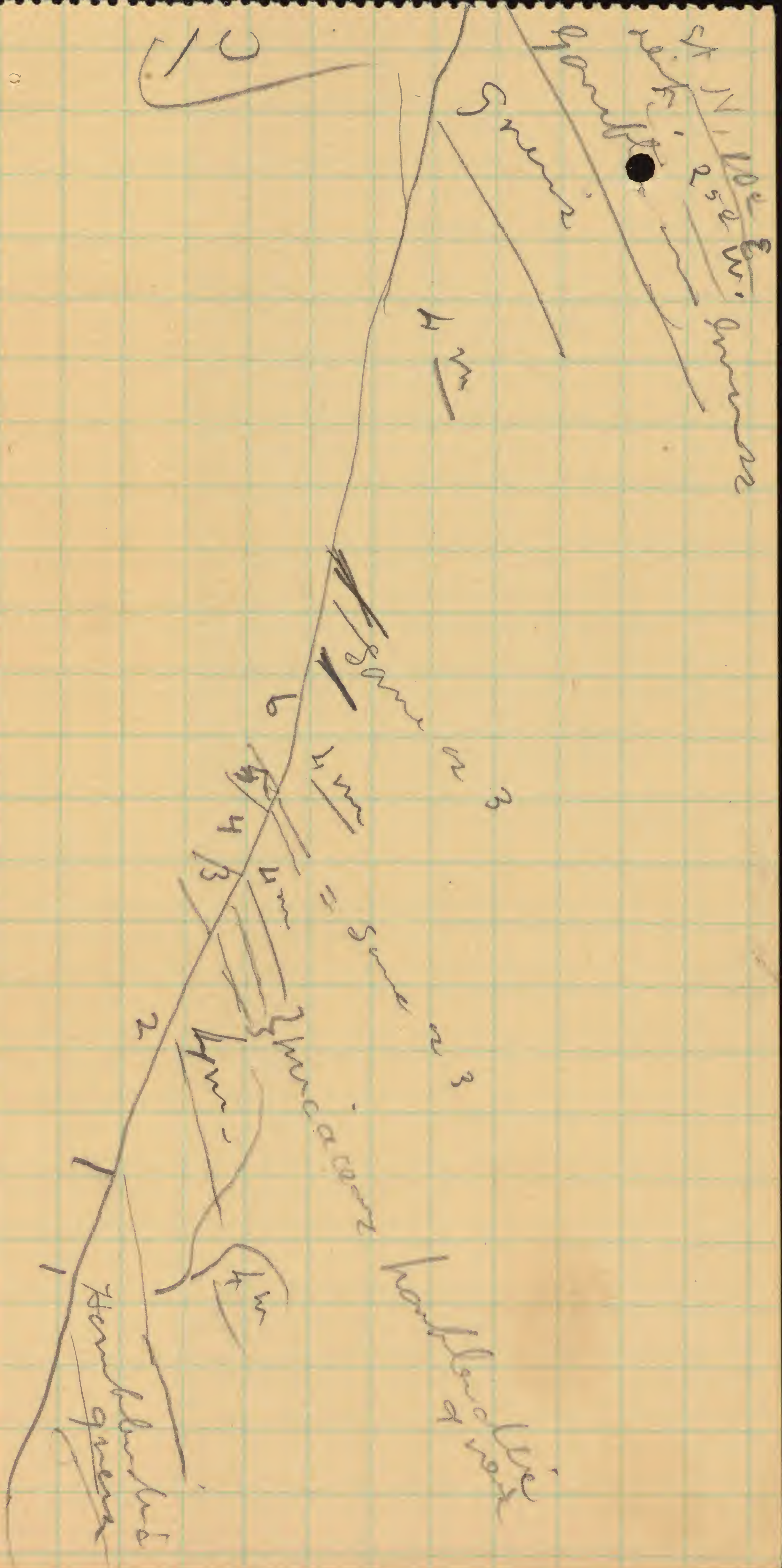
9. Dyke in l m

10. Gneiss above l m

11. Cheever ore bed
Essex Co.
Below ore bed

12. Gouge rock of Cheever
ore bed

13. Gneiss above Cheever
ore bed, Essex Co. N.H.



10

5

0

$$\begin{array}{r} 37 \\ \underline{5} \\ 185 \\ \underline{24} \\ 210 \end{array}$$

$$12 \overline{) 296} \\ \underline{24} \\ 56$$

1500^{ft} Garnetiferum
Gneiss

Crystalline
l.

210 feet

3

Gneiss

Iron Ore

Algonquin, 13

No 14. Hornblende
gneiss below Crystalline
lm - 1 mi S. Cheever ore
bed. Essex Co. N.Y.

Potsdam,

July 12/89.

South of Port Henry Iron
Co. of the Potsdam sandstone
is shown in the bed of a stream
banks of a stream.

Opposite the first
on the P. & M. R.R. at
a foot bridge found
Psychoparia

Alexandria?

Leigulella

The entire thickness of rock
exposed is estimated at
150 feet. The fossils
occur about 50 feet from
the summit.

Champlain Valley.

Trails on Potsdam Rd.
at Bearhorns - 7-7-86

Obtained a very good specimen of a track 6" broad. It was a portion of a trail of which 35 feet was measured.

The track shows on each side but there is not a central line as in some of the examples.

A strongly marked peculiarity of this trail is the apparent tripartite division of the foot prints.

①
o o o o o

o o o o o o

②

tho' the foot prints made at

was divided into three
lines of that they pointed
inward.

One trail becomes 3
four side to side,

Potsdam 10-5-87

The mode of deposit
of the Potsdam Rd
in Putnam - shows
that the valleys of Mill
brook & those others now
containing Potsdam sd
~~show that the~~
~~valleys~~ were pre-Potsdam.

See map of Hart Am -
and Putnam & mark
this idea up.

Potsdam Sandstone

~~West of~~ In the S.W. part
of Fort Ann - the Potsdam
sd - is exposed in a few
outcrops north of Grinnell
Hills that show its exten-
sion north in an old
Archean Bay. On the north &
west sides it dips from the
Archean spurs beneath the
Calceolaria sd - striking the
eastern & S.E. side of the
Bay. Crossing the spur
of Archean? the Potsdam
is again west with dipping
to the S.E. 5-10° & passing
beneath the Calceolaria

Redwood, Jeff. Co.
July 6-12-86.

S. E. of Redwood at old
farm grounds that Calo-
crans is seen resting on
the Potsdam & below
it the Potsdam shows
a considerable thickness,
on the lake nearby
about 100 feet of Potsdam
sd. is seen.

Found fine specimens
of *Lingulopsis acuminata*
in a sandy layer of the
Caloformic $\frac{1}{2}$ mi. S. E. of
Redwood.

6-13-86

9

• At Mammoth 75 to 100 ft
of Upper Patagonia passing
into Calceferous but not
reaching the Birdseye.
Alternating layers of sd-
& Calceferous sd. Abundant
annelid borings & trails &
~~but~~ Lingulepis acuminata
in upper portion in
clean sandstone layer
5 to 6 in thick.

May 23rd/91

Rensselaer Co. N.Y.

With J. Nelson Dale examined section of Berlin Grit series east of S. E. Conrads house between East Nassau & Hoags Corners. (or 1 mile E of Cummings Pond, a little E. of Conrads house farm house - a bed of dove to gray, compact limestone 100? feet thick dips East about 70° N - N, 5° E. Length of limestone outcrop about 800 feet. To the east the ridge is formed of alternating bands of quartz, purplish & greenish slates or shales - at the summit of the ridge a narrow band of fine calcarenate occurs in the grit, mostly quartz pebbles 1/4" to 2" in diameter. Some quartzite. N. N. 5° E, Dip 55° to 60°

Passing down the east side of the ridge and crossing to the line into Stephentown a band of coarse conglomerate is met with on the farm of D. Kitto, about 500 feet west of the farm house (See Rensselaer Co Atlas 1876. F. W. Beers & Co. Township of Stephentown. Schaul, Dist No. 11.)

No fossils ^{seen} in the limestone pebbles. Returned & examined quartzite west of the limestone near Conrads. It is massive, light gray & presents quartz grains. It is interbedded with purple shales & quartzite of a greenish tinge - much like the Berlin grit series. These beds are of the general character of those west of the massive Berlin grits. Limestone.

We (Wale & son) next examined

$$\begin{array}{r} 160. \\ 16 \\ \hline 96 \\ 168 \\ \hline 2640. \end{array}$$

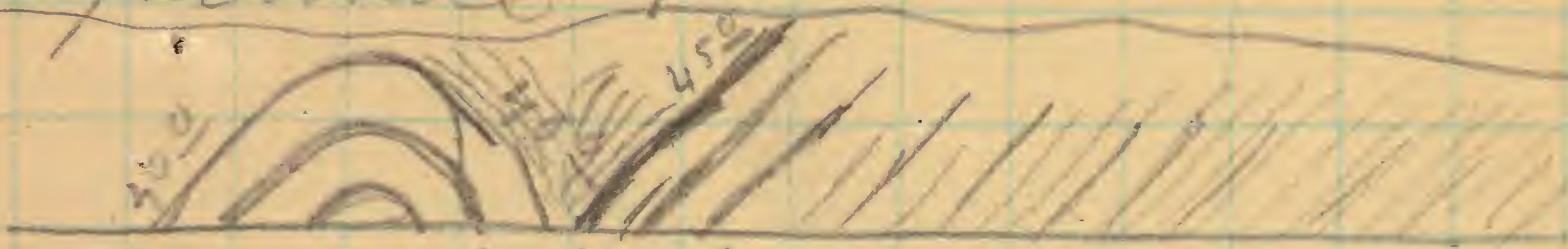
~~the~~ an outcrop of limestone
 Crinifera in? the grits
 $\frac{3}{4}$ mi' S. of Alps P.O. $\frac{1}{4}$ mi' E,
 of road on farm of E. H. Cole.
 $\frac{1}{4}$ mi' N. of farm house - near
 an old limestone - outcrop
 small & not in contact with
 the grits to the North & east.

Drive to Sand Lake for the
 night, Averil P.O.

On the S. ^{W.} ^{U.} side of
 lake thin bedded grits
 alternate with purple &
 green shales, St. N. 30°-35° E,
 dip 40° E,

on the ~~W.~~ ^{U.} point N. central
 point of the Averill PK
 picnic grounds a shank
 on antichinal archaean
 in the grits & shales
 followed by a shank

S. synclinal 4 N.

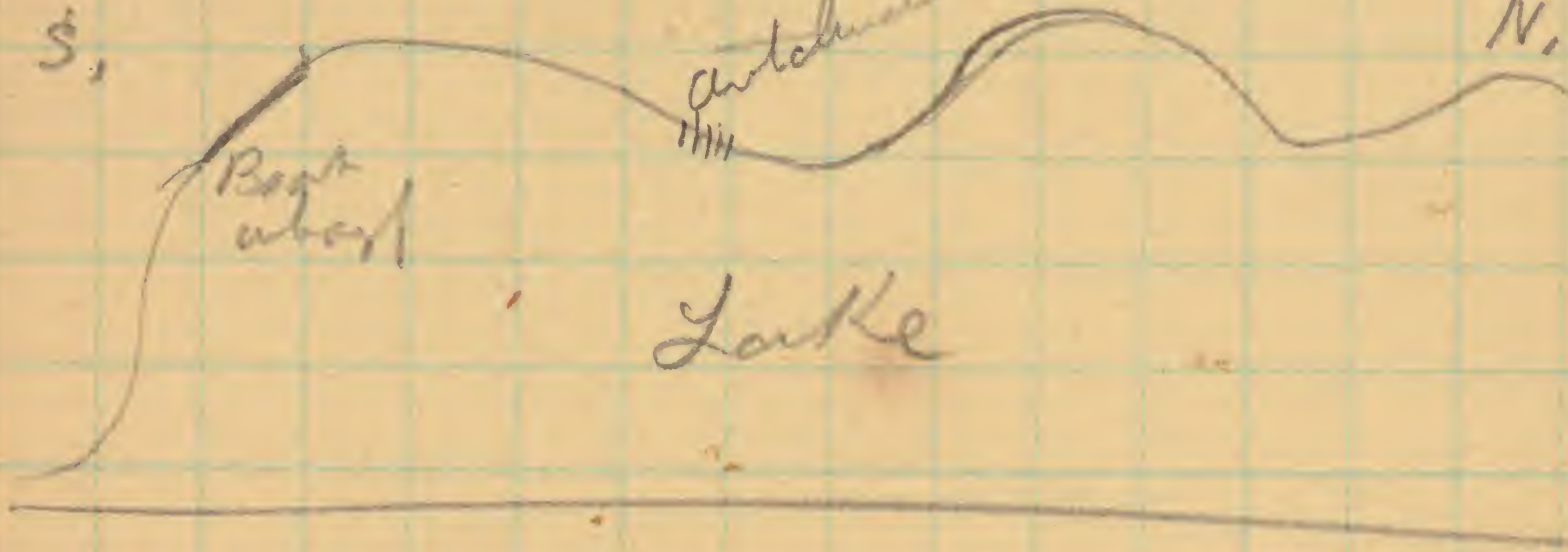


level of Lake

S. antichinal N.

Peak about

Lake



5

May 25th

Followed the line of the
grit outcrop north thro
Dandlake, Prester Hill &
Brunswick. Discovered
that all the outcrops of
Cambrian conglomerate beds
in eastern Brunswick
were fragments of transported
boulders. Noticed a 12x15
feet & 6 feet thick. The
beds passing beneath the
grits are purple & green
shales with very fine
interbedded grits. No fossils
observed.

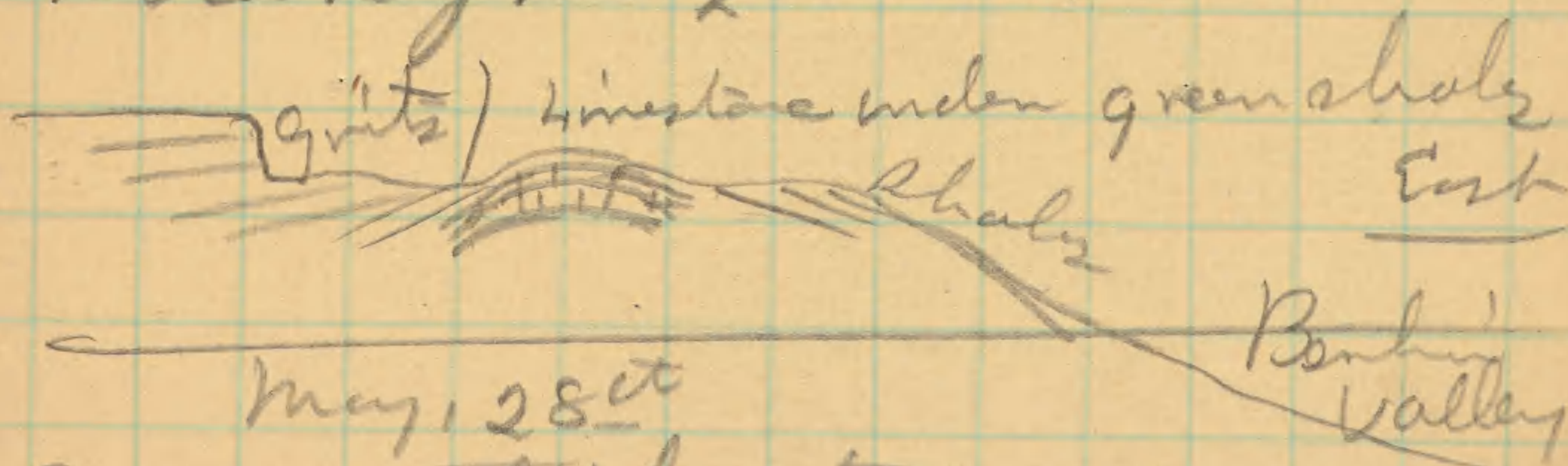
Passing to the northeast
across Pittsburg south
of the grit area. The
shales & fine grits still
dip ^{south} towards the Berlin Grit
plateau. or on the west
side.

May 26th

Crossed from Pitts town
to the Petersburg valley
& south to Berlin. In the
N. E. corner of Pellafter
visited limestone that
passes beneath the grit
dipping south.

May 27th

Examined east side of
plateau near Berlin &
south Berlin. An high
saddle S. W. of S. Berlin
observed Aptickian of
limestone passing in
this west beneath the
Berlin grits



May 28th

Crossed Stephentown & on to
Canaan.

10-17-87,

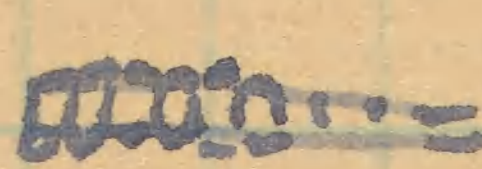
Limestones -

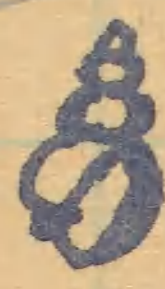
Just on the border line between
Elephant Run & Berlin, Rensselaer
Co. about a mile east of
the H. E. R. R. track l-
ocum dipping N. 20° E.
20° St. N. 70° E.

They are of a bluish
gray color - somewhat
shaly.

On the surface of one
layer noticed sections
of a coiled shell.



and a small common
stem 

Murchisonia = 

and small masses of fossils

2

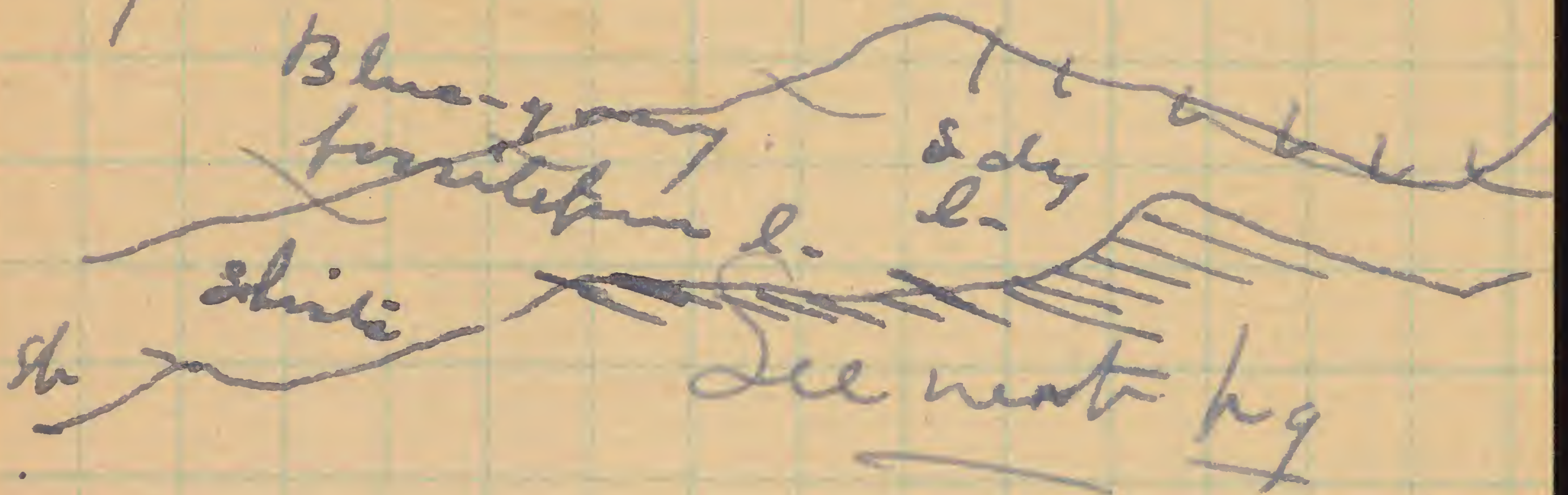
may have been
Salenophora carinata

The limestone in places
appears as tho' it had
been a plastic mass &
then compressed & struck
the sandy part in showing
on the weathered surface
the irregular lines, also
the calcite. In places
the l- is essentially ~~or~~
marbled but not coarsely
crystalline.

The bluish-gray l-
is overlaid by a massive
belt of gray calc arenaceous
l-

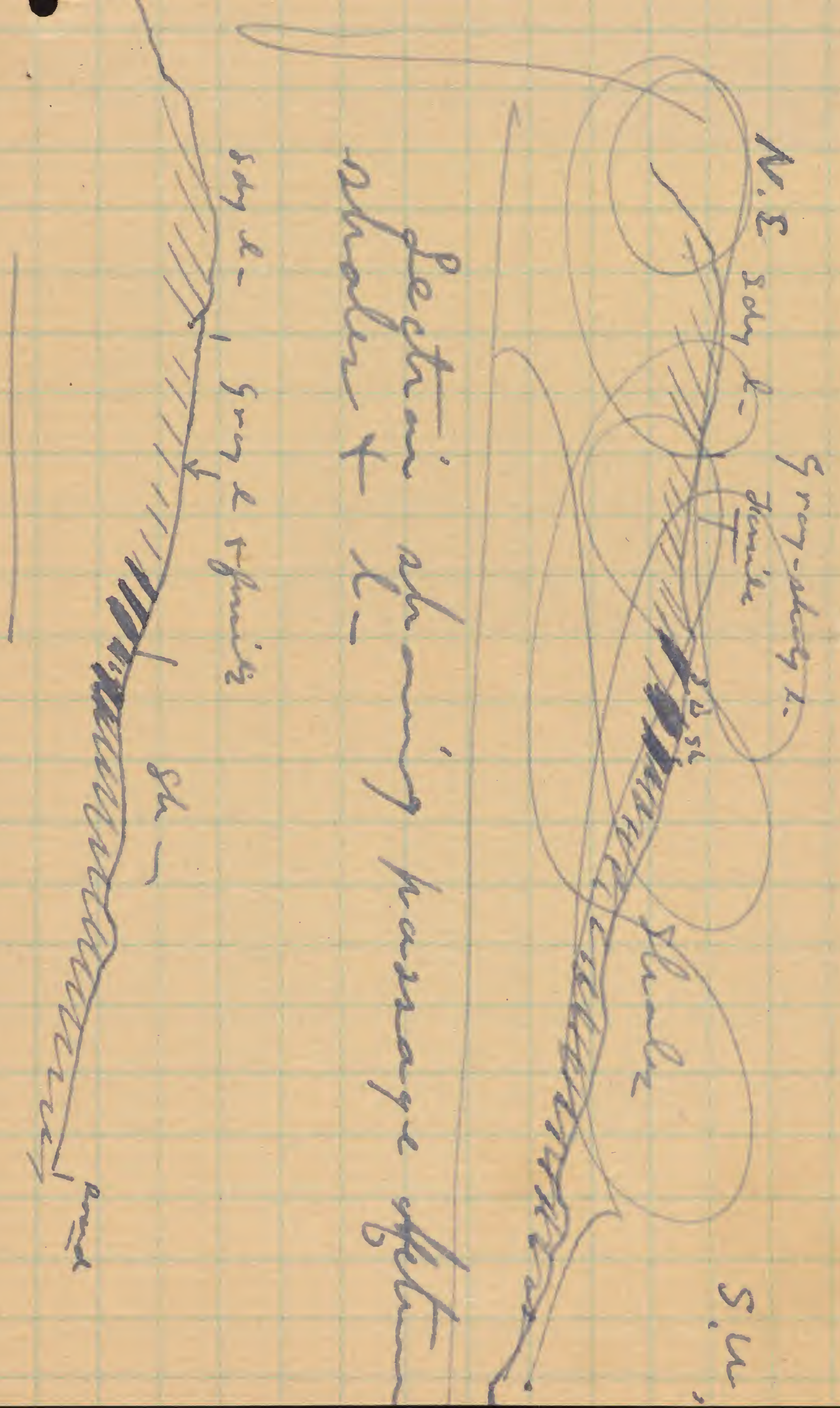
On the top of the ridge
the l- dips east
towards the Tacanic
range

Following south over the 3
 ledges on the west side
 of the ridge a calcareous
 schist is found interbedded
 with the limestone & then
 the schist becomes more &
 more the pre-industry rock
 until the l- disappears
 entirely - and the dark
 shales & shales of the belt
 between the l- & the
 Berlin sandstone ~~is~~
 are seen in all the
 exposures.



This section is about 1 mi
 S.S.W. of S. H. No. 9, near S. Berlin,
 Rensselaer Co., N.Y.
 and settles the position of

the dark shades.



• On the west side of the valley an outcrop of limestone occurs with nearly the same strike & dip as that on the east. It appears to be an isolated mass denuded of the shales that overlies the l on the east.

Fossils

Solenopora convicta
 Murchisonia - elongated slender shell with many volutions.

Sections of a round shell

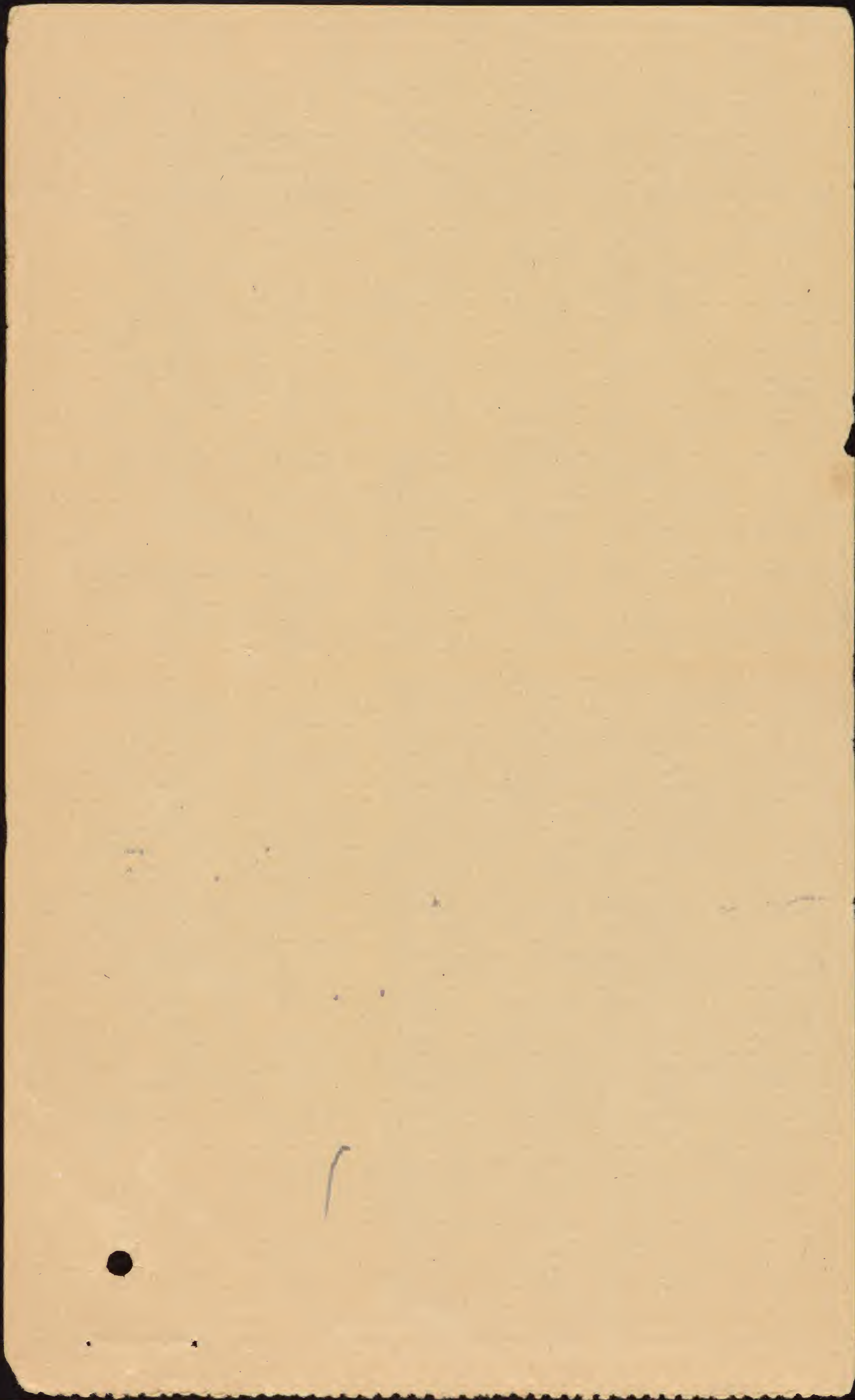
Crinoid stems.

The line of the fault north of the disappearance of the l- in the valley towards Petersburg is roughly about that of the R.R. track. It is quite probable that ~~the~~ masses of the shale of the underlying Cambrian Terrane have been left on the east side of the valley by erosion of the schists of the Hudson Terrane similarly on the west side but owing to their similar appearance in many instances it is impossible to distinguish them.

Cambrian.

From N. Petersburg west
the dark shales & then the
greenish shales dip to the
S.S.E. 15° to 20°

On the farm of O. J.
Pierce in the N.E. corner
of Grafton a band of
limestone occurs that in
its physical aspect is
similar to that in the
valley to the east, near N.
Petersburgh & Hoosick. It
is underlain by greenish
& purple shales & above
by a ^{greenish} sandy shale that
passes into the Berlin
sd. It is like the limestone
intercalated in the green
shales in Vermont beneath
the Hartman-Chazy limestone
& is a forerunner of the



conditions that became
dominant later. It
produced the Hol-Chazy-
Inerton limestones.

The outcrop in Grafton
is not over 100 feet thick
& of limited extent. No
fossils were observed
in it.

Alternation of green &
purple shales extend down
for several hundred feet
& then the valley is reached.

10-15-87

Cambrian (Reddish beds)

A band of reddish shale that first appears in the south part of Pittston S.S.W. of Pittston Corners was next seen south of Paerster Hill village, from whence it may be traced south along the west side of Pond & Borden Lakes & East part Hoags Pond in Nassau.

Apparently the same band occurs a mile south of South Schodack P.O. & also just northwest of Braisard on the road from B " " " to East Nassau P.O.

At Braisard, South Schodack & ~~near~~ Hoags Pond in Nassau the shales are ferruginous & at the

two latter localities

• fragments of iron ore
have been ploughed up
on land exposed by the
decomposition of the
reddish shales! The
~~shale~~ color of the latter
varies from reddish-purple
to reddish-brown & they
are interbedded with green
& purple shales.

• berlinian

Berlin bed -
This name is proposed
for the belt of greenish
sandstone that is so well
externally developed in
the town of Berlin,
Rensselaer Co. It extends;
on the north into Grofflar
and the southern portion
of Housick & Pittstown; on
the west into Poestenkill
& Sandlake & on the
south into Stephentown
& Eastern Nassau &

and western Petersburg
and the eastern edge of
Bourneville.

or into Columbia Co
the New Lebanon in
Columbia Co.

(2)

Berlin section & notes to
go in here

On any of the roads
passing east from
Bourneville; western Post-
tenkill & Sandlotke &
Eastern Nassau exposures
of the sandstone may be
seen & frequently the
interbedded green &
purple shales, altho' the
the latter are often
covered by drift & the
debris of the sandstone.

In Nassau a good
exposure of the red in situ
occurs on Jackawick Creek
between Hoags Corners &
Hunham Hallan, and
the alternations of the
red & shale may be

seen on the road
from Blunham Hollow
to Stephentown Center.

East of Nassau P.O.
on the road to Brainard
the largest pebbles seen
in the sandstone occur.
None observed were over
3 in diameter. Usually
they average from 1/8 to
1/2 in diameter.

The surface of the country
is strewn with boulders
as in Berlin. The softer
shales decomposing & leaving
the sandstone which breaks
up into angular blocks &
subangular pieces owing to
the frost breaking off the
angles.

Cambrian

Section across the south part
of Rensselaer Co.

The Cambrian beds nearest
the western fault line about
 $2\frac{1}{2}$ mi. east of Schodack
Landing - are ~~the~~ a rather
dull green shale that ~~and~~
break up on ^{long} exposure into
small fragments - ^{in the vicinity}

On the line ^{of the} road
east thro' Mitzekill the
green shales continue
or show by frequent outcrop
a little over 1 ^{1/2} miles ^{the}
^{with an} average dip of 40° to 45° E.
strike N. 20° to 30° E.

Nearly ~~the~~ ^a miles south of
South Schodack P.O. a
cut of the B & A - R.R. -
shows a fine section
of the green & redish-purple

arenaceous shales.
 The two colors appearing
 in alternating bands 5 to
 10 feet thick, ~~the dip is~~
 (dip 30° E. str. N. 30° E.) The
 green & purple shales extend
 eastward a mile & then
 the green sh. predominates
 but one belt of purple sh.
 showing in going eastward
 8 miles to the eastern side
 of Nossan.

Beds of a compact sand-
 stone begin to appear in the
~~the~~ green sh. about 1 1/4 mi.
 E. of the R.R. track. The
 first are greenish, weathering
 light gray & a half mile
 east, greenish decomposing
 on the edges to a dark
 reddish-brown ~~sand~~ rotten
 rock or soft sandstone -
 The ^{sand} rock appear more
 frequently to the eastward

sometimes as a hard compact sandstone scarcely changing by exposure to the weather & then so calcareous & ferruginous that the exposure reduces it to a reddish-brown rotten sandstone.

A mile west of Valatie Creek ^{(hill) 1/4 mi} N. of the Columbia Co. line bluish-gray sandy & pure limestones begin to appear interbedded with the greenish shales - some of the limestone contain Hyalithellus micans Turnersonia - Microdiscus sp.

The limestones are very irregular in thickness & on the strike - appearing & disappearing. They become more abundant towards Valatie Creek (hill) showing even bedded layers 2 to 6

inches thick beside
William Budd's farm.
The shales have changed
to bluish-black and continue
so ~~far~~ ^{can} nearly to the
creek. Fossils occur in
every band of limestone
examined. They are small
rare & embrace but a few
species.

West of Volatic Kill the
greenish shales predominate.
Thin layers of limestone
appear at just south of
School house No. 6. In Nassau
a quarry shows exposures
several feet in thickness
made up of layers 2" to 6"
thick with parting of shale
Microdictya punctata speciosa
& Linnarssonia
more broken into of the
solid layers at 1/2 mi to the
eastward. Microdictya Ⓞ

Humanssonia

+ Hy-muran occur.
The greenish shales then
continue a mile when
the compact greenish
sandstones begin to appear
in beds 2 to 20 feet thick -
alternating with the shales
but gaining in proportion
towards Bramard P.O.

Just before reaching the
line of Stephenston live
purple & reddish purple
sh - appear ~~with~~

with the exception of a
band of green sh 2 mi east
of Volatic creek - all
the ~~off~~ outcrops observed
showed an eastward
dip of the strata - on
the exceptional outcrops the
dip was 60° W. St. N. 10°
W. a little distance
on the side the dip is east

10-15-87.

6

The section from Braamond
+ East Nassau - to
within a mile of
Stephentown flats is
essentially the same
as that of Berlin on
the same line of
strike.

Compact greenish
sandstones with beds
of greenish shale
becoming more argilla-
ceous & often of a hydro-
mica type.

Between the ~~line~~^{eastern}
outcrop of the sandstones
& the limestone there
is a broad belt of dark
argl-shale (To be studied).

10-12-57

• *Banhus* family

Locality on J. V. Adams
farm, Township of Boushwick
2 1/2 mi east of Troy, N.Y.

- Micro* - punctator -
- Micro* - speciosus -
- Hy* - - communis -
- " " - Americanus -

Orthis sp. ? (see above)
Abolilla O = O-nana?

Alembic or *aphodes*

10-1387

Leamman

The broad belt of shales between the western fault crossing south thro' Troy, North & East Greenbush & the sandstones of Brounck, Grafton, Poestenkill and Handlake is characterized by the dull-greenish color of the greater part of them & the occurrence of beds of purple slate. A broken stratum of limestone conglomerate occurs on the east side of Brounck but from there to the west side of Brounck no fossils were found on limestones.

10-19-86.

1

M. C. Section

The Greenwich section is stopped before any of the purple + green plates are reached by the faulting that brings the Hudson River formation against it.

Taking up the section in Salem at Salem Village on the east side we find green & purple slates with interbedded limestones carrying characteristic Middle Cambrian fossils.

The thickness of these beds is 2500 feet & if there is no repetition from the strata on the west side to the farthest fossiliferous beds on the east

there is fully 5000 feet ⁽²⁾
• Allowing for one repetition
the 2500 feet of the eastern
half of the section can
be taken.

Non fossiliferous green &
purple slates.

East of the last bed
of fossiliferous l- there
is 1750 feet of green &
purple slates & then an
interval that may have
a fault line passing in
it. East of this the
green & purple slates form
a mountain slope of 2150
feet were measured by
pacing & dip up to the
summit where the slaty
character begins to disappear
in schistose argillaceous
rock.

The disturbances of the
strata at this point

is local & beyond to the (3)
east the green slates
extend to the drainage
line of the Caroblen Valley
& acrossed it into Cement.
A fault line may run
along the valley so the
thickness is estimated up
to the base of the rock
slope of the ridge of
which I measured the
west slope.

This adds 3700 feet of
green slate to the section

The Salem section (4)
may safely be said
to give.

Fossiliferous	2500
Non- ^{ri}	2150
<hr/> Green slate	<hr/> 4650
	<hr/> 3700
	<hr/> 8350

The green & purple slates
in the township of
Hampton W.N.W. from
the town of Hampton
show 4300 feet of
thickness.

Two miles north there
is over 5000 feet of these
beds if no repetition occurs.

The Salem section however
is much more correct
& is the best I know
of the green & purple slate
belt.

rep. sheet

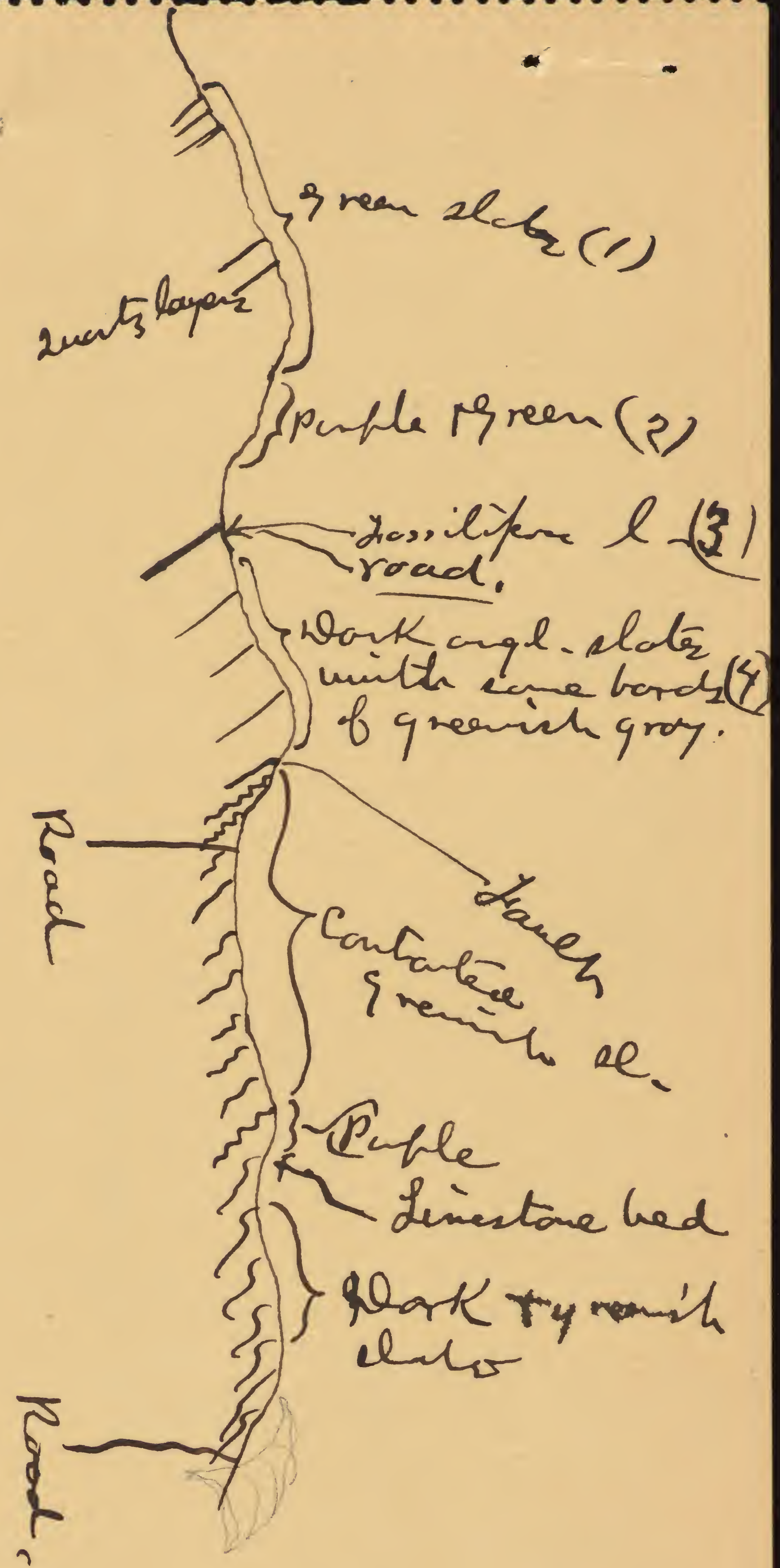
For the S.E. part of
Granville the dark
shaly slates pass into
the purple & green slate
belt but our present
knowledge is not sufficient
to state what amount
of strata is left out between
the Greenist & Salem
sections. Both the faunal
& lithologic characters are
quite similar & a ^{detailed} minute
study will be necessary
to determine the relations
of the two sections.

At the top the green
slates pass into the
talcaea schistose rock
which I now regard
as the representative
of the Potsdam or
Upper Cambrian.

Lower Cambrian

Section starting $9\frac{1}{2}$ mi S. of
Salem, Wash. Co. N.Y.
at foot of hill facing Salem
& Fitcher park road on the
east,

1. Greenish slate with
layers & beds of gray
quartzite - 1700-
 2. Purple & green slate - 600-
 3. Greenish slate with
bed of limestone ^{above} carrying
Lower Cambrian fossils - 300-
 4. a narrow belt of
greenish slate & then
a broad band of dark
argil - slate with
a little interbedded
dark limestone - 1300.
- To fault line ————— 2900



Fossils in No 3.

Olenellus asaphoides

Microdictya lobatus -

Stenotheca rugosa -

Fardilla tracyensis -

Anthis salernensis

Salenopleura tumida

Leperditia dermatodes -

At the summit of 4 a cliff
of green slate facing east
a little west of schoolhouse
No. 9, shows contortion in the
slate for a few feet.

This contorted slate begins
again a short distance to the
east & continues for a mile
or more. These rocks are a
reduplication of the section

Handwritten text, possibly a list or notes, located in the lower-left quadrant of the page.

Handwritten text, possibly a list or notes, located in the lower-right quadrant of the page.

passed over west of the
fault.

The section east of
Salem village is very
much broken up and not
reliable.

9-27-87'

Cambrian west of the
Taconic Range.

Work from the Little
Horsick River at Berlin
Village the limestone
extends about a half a
mile when it is cut off
by a fault that has
raised placed strata
of Cambrian age in a
high ridge to the west.

Following up the road
towards Poestenkill the
alternating bands of dark
shale & a hard, compact,
greenish-colored sandrock
extend up to the summit &
on west into the township
of Poestenkill.

The strata strike N 75. ° E
dip to the west from 50° or

the base to $\$00$ + in
 • Posstenkell they gradually
 flatten out so that on
 the western side of the
 sandstones the cliffs are
 formed of nearly horizontal
 strata.

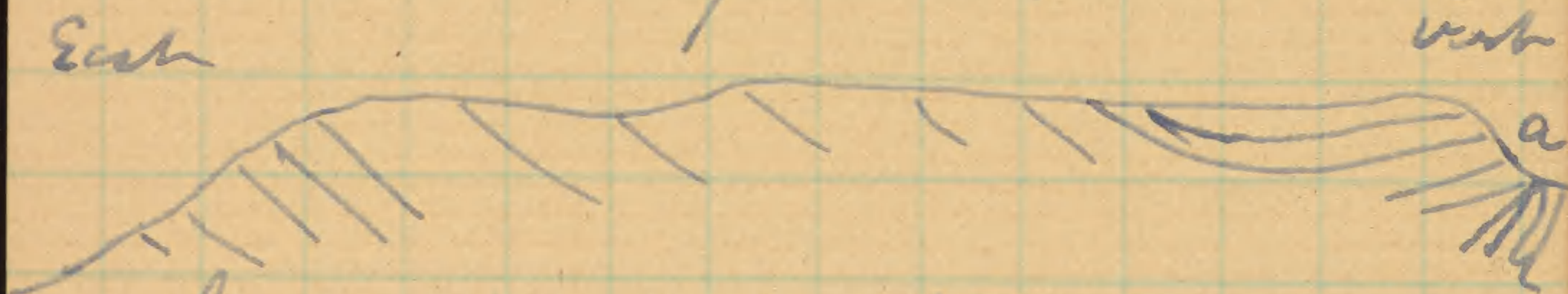
The exposure in situ is
~~but~~ rarely seen beyond $1\frac{1}{2}$
 mi. west of Berlin, from
 there on to within one
 mile of Posstenkell's village
 only outcrops of the sandrock
 were seen. The sandrock
 becomes a fine silicious
 conglomerate in some of its
 layers. white quartz pebbles
 from $\frac{1}{8}$ " to $\frac{1}{2}$ " in diameter
 lightening up the otherwise
 olive green rock.

The shales & slates
 have disintegrated & leave
 the masses & boulders of

sandrock scattered over³
the surface & frequently
to such an extent as
to form a rough pave-
ment. The region is fit
only for raising growing
timber except in a few
places where the shales
have disintegrated &
formed a good soil.

An estimate of the
strata exposed in the eastern
end of the section gave
2500 feet as the thickness of
the beds, characterized by
the olive-green sandrock.

Each



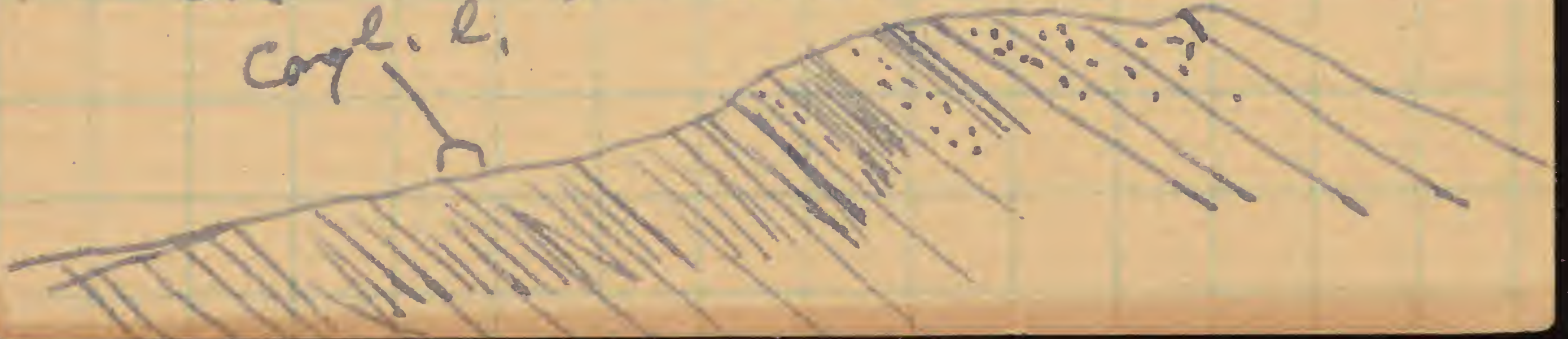
The section is broken and
wrest by the uplift at a.

9-28-87, 4

M. C.

All of the greenish sd + congl-
noticed in yesterday's notes is
of Cambrian age ~~not Hudson~~
~~Jerome~~. This was ascertained
by a section in District No
11. of Township of Brunswick
Remuelan Co. running west
from the school house along
the line of the E + W. road.
The greenish sandstone becomes
shaly + thin purple + green
slate is interbedded with it
+ then going down the purple
slate predominates + the
sandstone is only seen as
thin layers one or two inches
thick in the slates.

congl. h.



a congl- l- appears
 in the purple slates ~~but~~
 fossils were found ~~at the~~
~~limestone~~ Alveolus-
Asaphoides, Microdiscus-
Trigullula ?

Crossing the section from West
 to East on the line of Grafton
 Center, that was crossed
 yesterday in Berlin & Paesten-
 Kill. The strata are found
 to dip to the east all the
 way to the Little Housick
 River.

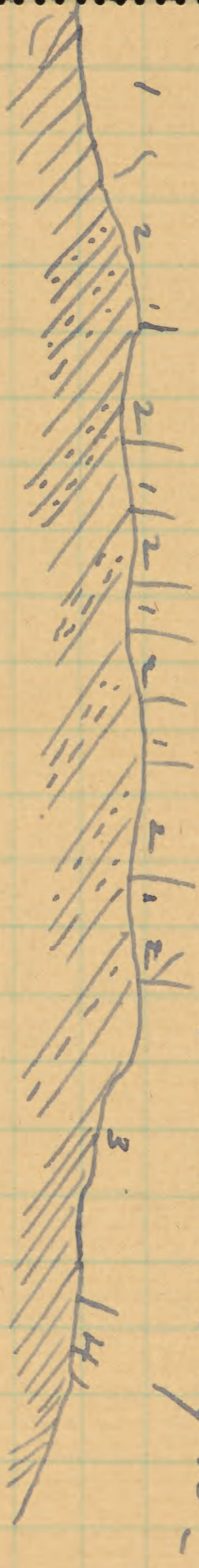
The characteristic
 greenish schist & congl-
 is seen all the way to
 the overlying greenish
 slate & several outcrops
 of purple & green slate

show the character of
 • the plates interbedded
 between the sandrock ~~strata~~
 strata. The latter
 continue on the ^{prominent} surface
 rock to within ^{1 1/4} mi of the
 Little Hoosick River in
 Petersburg when ~~the~~
 green slates appear &
 with interbedded dark
 calcareous shales near
 the summit of the section
 extend to the Little Hoosick
 River.

The Grafton - Peters -
 burghs section is more
 complete than the Berlin
 Postenkill section as it
 includes both the slates
 purple & green on the
 west & the green slates
 above the red on the
 eastern side.

12

Brunswick | Grafton



| Blensburg h.

- 1 = Rutile + green slate -
- 2 = Greenish sandstone
- 3 = Greenish siliceous slate
- 4 = Dark argl + calcareous slate passing almost to a clean limestone.

ff

From this section I
am inclined to consider
the dark shales # (h.7) as
the passage beds from
the silicious to the argillaceous
& calcareous beds that
as they become more
calcareous form the lime-
stones of the Colcaferroc-
Chazy-Perito Terranes.

Aug 24th / 87

Began examination of the relations of the limestones west of the great fault line to the Jacaric schists & slates of Enniscis.

about 1 1/2 ^{mi} south of west of Granville on the farm of C. Kiltan ^{in Township of Alport} ~~in~~ ^{east} side of the road an outcrop of limestone forms a sharp sharp ridge. From the road up to the l- ^{the} slates dip E-into the hill at an average angle of 40° & ^{pass} beneath the l- ^{the} l- mass is about 1500 feet in length N+S. ^{about} 100-~~to~~ feet thick at the center. On the east slope

6 feet distance
40° to 50° E. dipping

it dips 35° to 40° E (2)
into a slope of slate
that dips 40° E. S. N. 10° E.
The ^{more} ~~thin~~ ^{thick} out to the
north but ends more
abruptly to the south.
A study of it leads to the
conclusion that it is a
lenticular mass embedded
in the slates.

The contained fossils -
Streptelasma, Machnea
Solenopora compacta
Murchisonia, Sperditia
fabulites,

refer this mass
of limestone to the Chazy
horizon.

To the north $\frac{1}{2}$ mile a
small mass 30 feet long
is embedded in the slate
& shows similar tethy-
logical characters.

To the east the section

inferior a great
• thickness of shale, slate
cherty beds & arenaceous
beds. those to the north
are capped by overlaid
by the red slates & also
interbedded black slates.

carrying Hudson River
graptolites.

From this section the
Ironton limestone is absent
by non-deposition - the
shales replacing it & the
same may be said of the
Caldwells - chazy - Ironton
limestones north or south
of the lentils as the
shales extend several
hundred feet beneath
the lentils and in fact
a mile or more to the
west presenting a constant
dip of about 40°.

On the road from

[Faint, illegible handwritten marks]



West Granville to 4

• Mervey's Bridge a little west of B. J. Lawrence's House the slate crosses the road ⁱⁿ nearly vertical position. At a hasty glance would run it under the limestone on the north side of the road but a study of the limestone shows that it ~~turns~~ ^{turns} around so as to pass conformably under the slate.

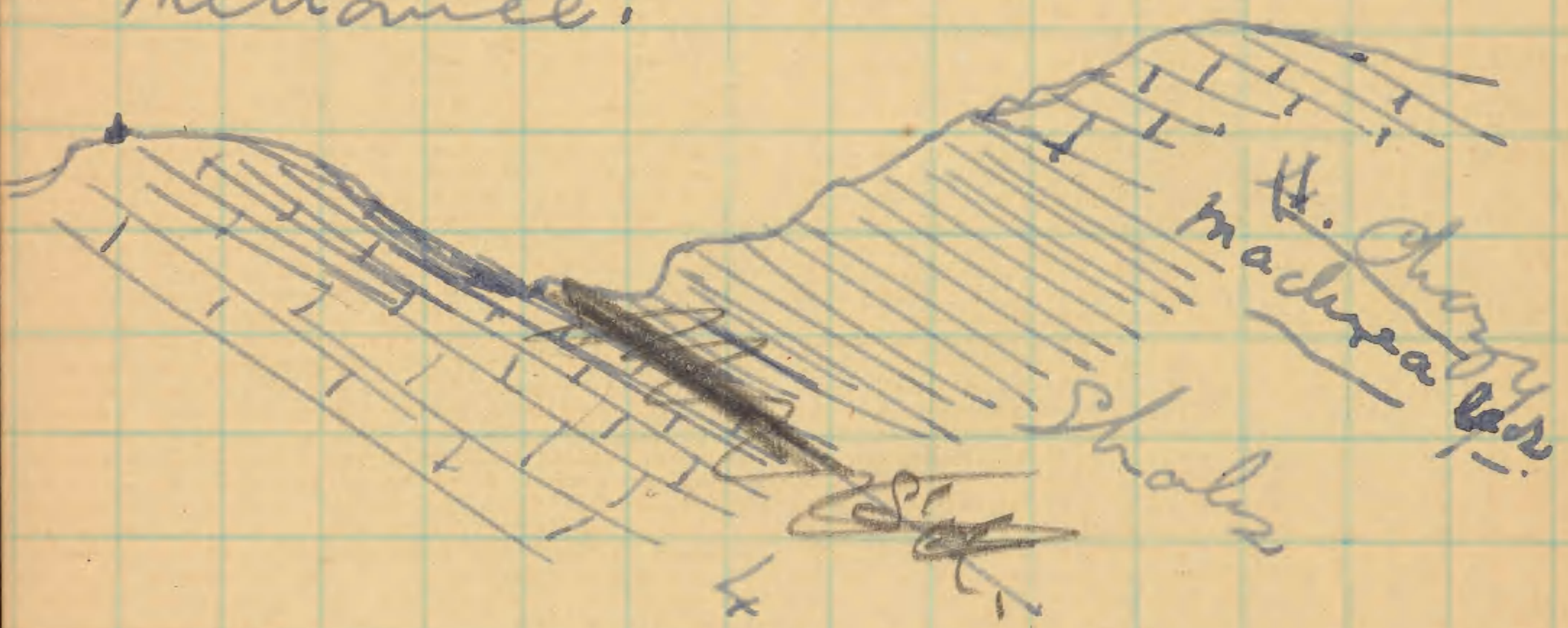
On the south side of the road a small mass of limestone dip $E. 50^{\circ}$ to 70° str. N. 10. E.

This section shows that a fault usually follows the ^{east} edge of the western limestone but that in one instance the relations of the l. & shale have been preserved

Aug. 25/8) (5)

• Clean, beautiful day.

Photographed contact of
shales on l- 2 mi below
N. Granville on the
Mettonce.



See notes of 1886
on this section

Chazy - Calcareous
Madura
Chazy

To the north along the
line of contact of the
l- & shales the latter

are faulted down to the
• east. At many
places - the shales are
displaced & stand vertical
with an E & W. strike
as they approach the l-
It was at such places
as this that Dr. Sumner's
founded his unconformity
between the l- & the shales
or slates - overlooking the
fact that his Taconic
slates were to the east
& separated by a belt of
slates of later age, from
the limestones.

Tracing line of outcrop
of limestones ^{near} all day.

Photographed contact
figured by Fitch in
1849 Agl. Rept. N.Y.

121

Aug 26/87. (7)

In the north end of
Whitchell on the line of the
most northerly E & W. road -
about $\frac{1}{4}$ mi East of the most
westerly N & S. road the chazy
l- may be seen resting
in conformable contact on
a belt of shale -

km - Its N. 30. E. dip 30° E.

Just before reaching the N & S.
road on the west. ~~The~~ a
km dips beneath the
band of shale & extends
toward in vertical
section to the Calciferous
cliffs that face on each
Bay on the mouth of the
Paultney River

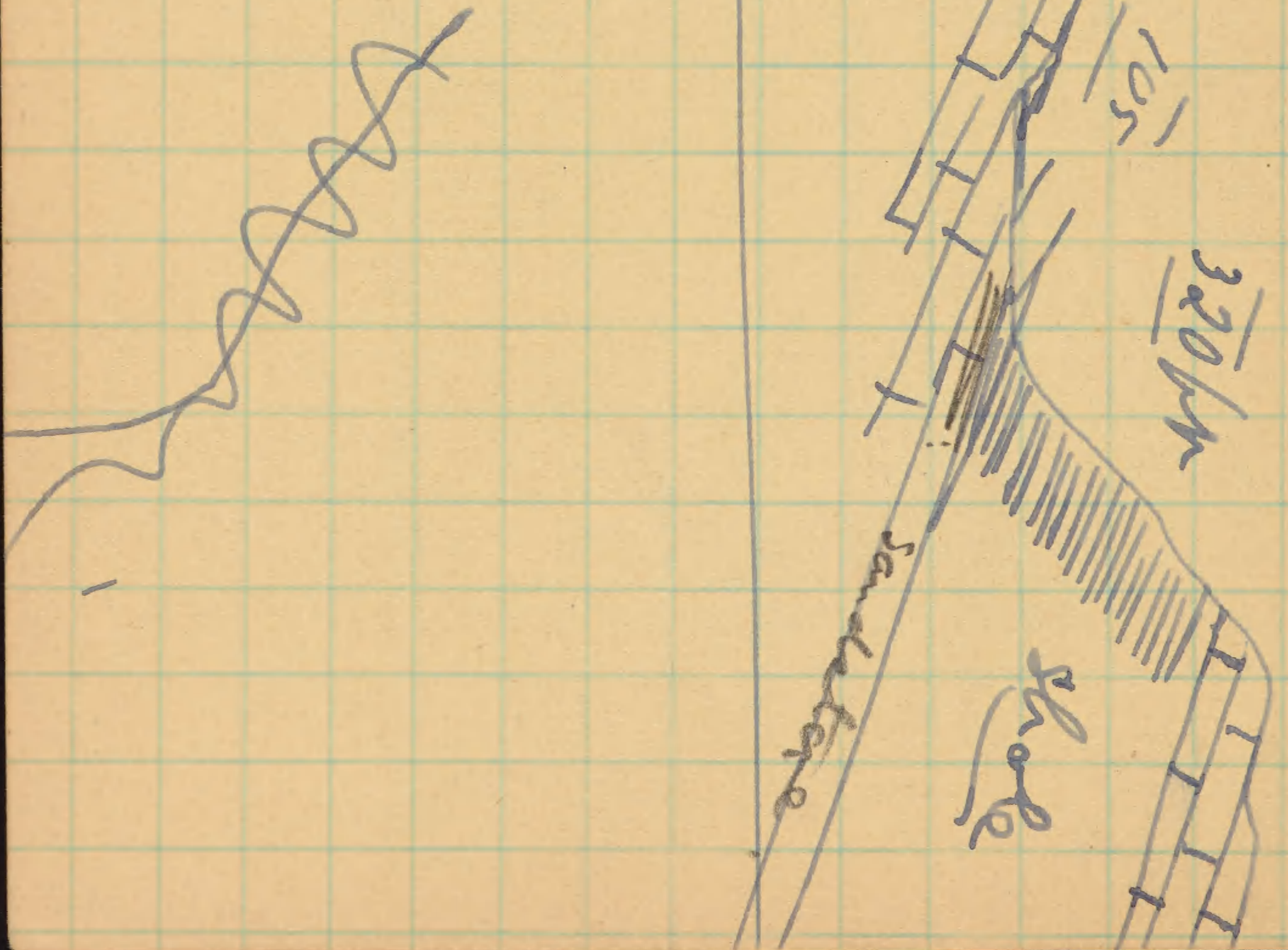
Traced south the band
of shale extends to ~~the~~
~~crossing~~ of the ~~Whitchell~~
~~& Paultney R.R.~~

(Aug 27, 1887) to the broad
flat valley east of Skaves
on Whitehall Mountain
coming out just east
of where the two roads
from Whitehall, N + S, of
the mountain converge
about ~~2 miles~~ E. N. E. of
Whitehall.

Just north of the road
back of house a narrow ~~flat~~
flat extends north
as far as the old Congre-
gational church where
I = Evans took the
section illustrated by him
(Ag. N. Y. p. fig. . 1847)
The flat is underlain by
l. - as seen near the
farmhouse & on the east
~~at the~~ a north
south westward facing
bluff is capped by

~~Calcareous sandstone~~ ^{8a}
arenaceous limestone

• From the summit of the bluff the belt of shale may be traced north by the topography and a casual examination will show the geologist that the shale is interbedded between the two masses of arenaceous l-
Section just north of the farm house.





The bluff breaks down
 E. of the Congregational
 church & the outcrop
 of shale - capped by
 l- is shown by the
 hills with a steep westward
 facing slope & then by
 a broad smooth meadow
 to the north towards the
 Partney ruin.

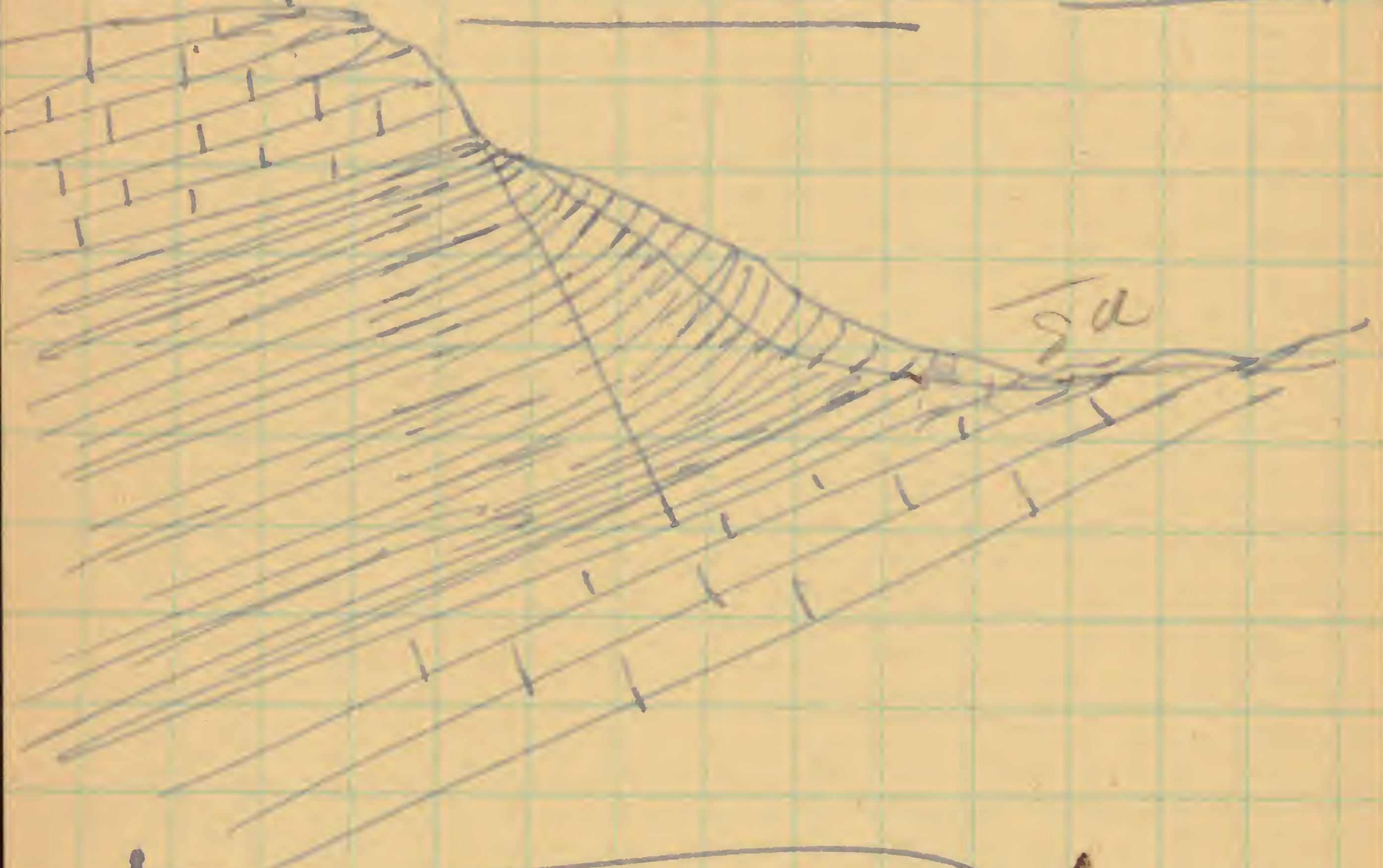
A feature not heretofore
 noticed in ^{any} all the slate
 outcrops is the tendency
 of the slate to "creep"
 from beneath the l- by the
~~downward~~ ^{pressure} ~~pressure~~. At the catacomb

the dip is the same in the
 slate of l- but 30 feet
 away the shale may have
 typical the dip being, to
 having been squeezed
 out of up

see next page



Sections of a small
machine & also a Murchisonia



This was not taken into
consideration by sd
Emmons.

(11)



1 = Calaptone - See Whitehall section of 1886.

2 = Sandstone 105.

3 = Shale - black 220.

4 = Chazy - fossils 300 - measured.

5 = Shale - 275.

6 = Monton fossils 175 -

7 = Shale 400 + estimate

8 = Limestone - (Chazy) a fossils line separator 849.

9. Cambrian Shale, etc.

• To the east beyond the shale 7, a fault ~~line~~ occurs that has dropped a block of Chazy l- between the shale 7 & the Cambrian rocks 9 (Fossils, naclurea)

Near the fault the shales show the contortions & drag accompanying the pressure & movement on the line of the fault & the limestone on the eastern side is ~~compressed~~ & ~~marbled~~, displaced & changed to a fine gr, compact marble near the fault & this entire mass which is 150 to 200 feet thick shows the effect of the ~~faulting~~ pressure accompanying the faulting.

Trenton l -

113.

The ~~small mass~~ of Trenton l- disappears to the north to reappear again as a mass 200 or 300 feet thick ~~that~~ that is imbedded in the shales black, argillaceous shales. It again disappears in the shales just beyond S.H. No 6. The south end of the outcrop is ~~very~~ abruptly ~~to~~ cut off by a fault that also cuts it off on the S.W. To the north the ~~mass~~ exposure ~~narrow~~ by non-deposition apparently as the lower shale band holds its own & meets the underlying shale.

Towards the summit of the limestone the shale & l alternate in bands varying from 2 to 20 feet in thickness

- The small outcrop of 14-15
- Trenton l- nearer the railroad appears to be a lenticular mass horned in the shales.

From this point south no traces of the Trenton l- were seen the Chazy l- being the highest l- exposed, as the horizon of the Trenton is shale - no l- having been deposited.

Limestones etc. W. of 116
great fault line. Continued

Passing south thru Fort
Ann the belt of l - narrows
rapidly & then broadens
as it enters Hartford by
addition on the western side.
At about the crossing of
the Loun line into Hartford
the Trenton l - appears
resting on the Crazy l -
dipping beneath the shale
on the east. This is the
first contact of the Trenton &
Crazy seen in the country
south of the Vermont state
line.

The Trenton l - is from
50 feet in thickness &
contains characteristic
fossils -

To a point near
 the village of Fort Am-
 the Calceferous formation
 rests on the Potsdam &
 then the Chazy on the
 Calceferous but from
 Fort Am south the
 Potsdam is cut out by a
 fault, that runs south
 east of Wood Creek &
 obliquely to the strike of
 the Calceferous so that
 at Smiths Basin the
 Calceferous is dis-
 joined & the Chazy l-
 forms the westward
 facing cliff - & at a
 point about 1 1/2 miles south
 of Smiths Basin in Kingsbury
 the l- disappears the
 shale forming the entire
 cross section on a line
 with the village of

Adamsville, in
Hartford. This is, as
far as I can discern,
the southern termination
of the Western l-belt.

Kingsbury & Fort Ann

(19)

The limestones of Kingsbury are of Calabron-Chazy age but do not present the dove colored calcareous layer so characteristic of the Chazy all thro' the Middle l-belt on that of Whitehall East Fort Ann, Hartford & East Kingsbury. The silicious & sandy l - predominates up to the contact with the shale on the eastern side.

To the S.W. near Glens Falls the Chazy horizon is found & also the Trenton l near Glens Falls.

(See notes of 1884) C.S.W.

6-9-86 (1)

Theresa, N. Y.
Upper dam of Indian
River at Theresa, N. W.
side just below dam.

Potsdam sd, comes
in unconformable contact
with a mass of
light colored crystalline
l-.

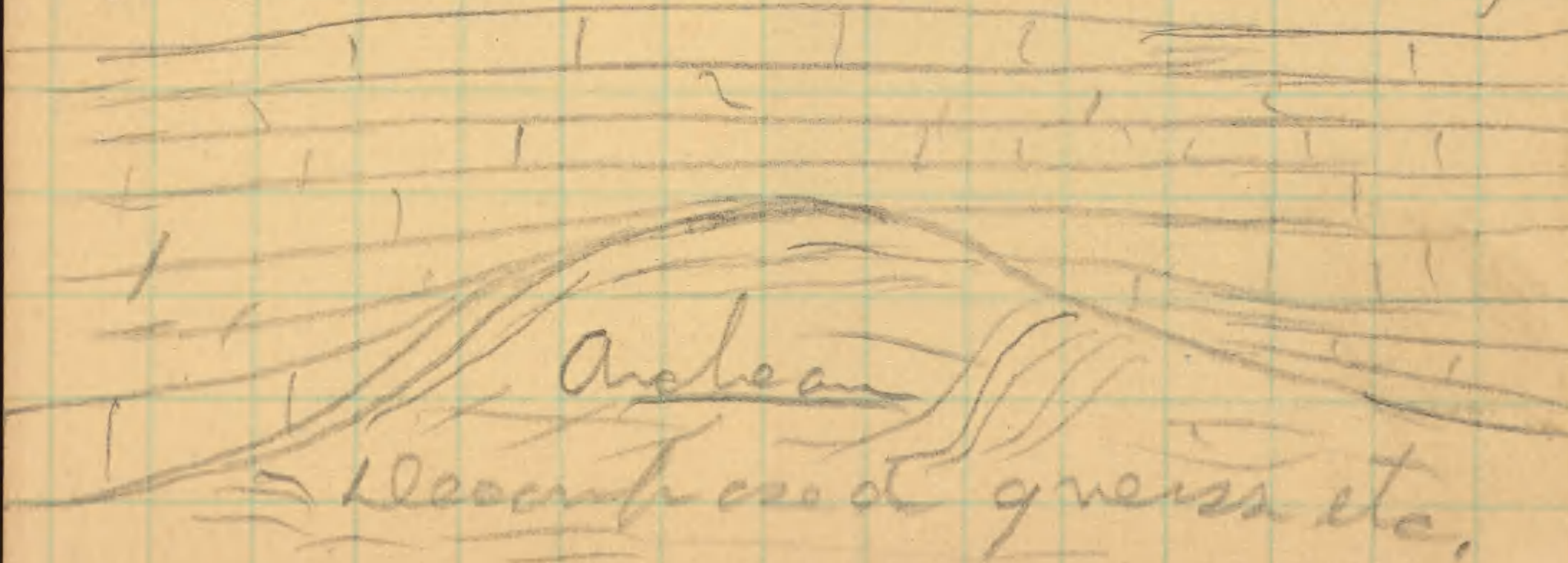
At contact the l-
is deposited in crevices
of the sd & against its
irregular surface & the
sd, appears to have
decomposed & mingled
with the l-.

The l- has the
appearance of a vein
deposit between the
Potsdam & the
Achean, about 50 inches
but not any contact
with the Achean or the

west side. Dam #62

• stream at the Falls a belt of limestone occurs that is evidently contemporaneous with the bedded quartzitic rocks with which it is associated. The strata dip 60° N.W. & rest conformably below on a quartzitic rock. About 50 feet in thickness is shown.

~~Above the~~
Between the two bridges on the south side of the stream the Potsdam rests unconformably on the Archean and a restudy



3

of the ~~concrete~~ exposure
• on the opposite side
of the river leads me
to think that the Potsdam
thrust was deposited
against a cliff of
limestone & that the
appearance of the
~~contact~~ ^{is} the result
of the interchange of
the lime ~~and~~ of the
limestone & the silica &
oxide of iron of the
sandstone.

No fossils except
annelid borings were
observed until the cal-
careous layers placed
in the Calcareous by
Emmons, were met with.

6-10-86 (4)

S.W. of Theresa about 5
miles the calcareo-arenaceous layers of the Calaveras formation begin to appear resting on the Potsdam sandstone. The entire mass of rock is penetrated by worm trails & borings & give rise to the "fucoids" of Emmons. 25 feet up found *Aphileta* & numerous plates of cystids. About 15 feet more may be added to this & then limestones appear with small *Murchisonia*, *Murchisonia* etc.

Still further west 10 mi' W. of Theresa. The l-cantaris, *Sepoditina* & *Othoceras* like *O. multi* —

The passage from the Calaveras to the Chazy on

is not recognized. The
● Calciferous appears to
be confined to the brown
sandy layers beneath
the junction -

6-11-86

On S. bank of Indian
River 3 mi above Theresa
Jeff. Co.

Crossing from the northwest
side of the River on an
Iron bridge above cliff
of Patsdam is seen on the
south ~~east~~ side. ~~the~~

1. Gray fine grained com-
pact sandstone in layers
varying from 3 in to two
feet (Scalithus) / worn soft
holes towards the summit
of the upper layer, 30 ft.

2) Irregular thin bedded

sandy + calciferous ^{cherty} layers ⁽⁶⁾

Fossils.

66 ft,

Lingulella acuminata
Aphileta complanata.

3. Light gray sd in thin
layers 2 to 3" = Penetrated
by worm borings in all
directions

1 ft 2"

4. Alternating thin bedded
massive calcareous &
sand layers 1/2" to 2"
thick & cut in all
directions by worm
borings.

30 feet.

Aphileta & Lingulella
acuminata,

The Patadam about

Theresa varies from 10 to 100 feet in thickness of a variable character. The upper beds are usually massive 2 to 6 feet in thickness and the lower portion is apt to have many to irregular layers.

At one spot pebbles of quartz one to two inches in diameter were seen next to the Adkean but not any large pieces of rock.

~~The rock is fine grained & is distinctly bedded. In some other places than the adjacent Adkean at this locality~~

The passage from the Patadam to the Califormous is very gradual & no stratigraphic break is

Trenton Limestone.

The most extensive develop-
ment of the Trenton limestone
^{in the county} is on the northeastern part
of Whitehall between the
Whitehall & Rutland railroad
track and schoolhouse No. 6.

This limestone is separated
from the ^{underlying} Chazy limestone
by a band of shale (see
section fig. ? p. ?) and
is overlaid by shales that
extend to the fault line
on the east. The line
between the shales below
& the l- is abrupt but
at the summit of the l-
& shales alternate in bands
varying from 2 ^{to} 15 feet or
more in thickness and
calcareous layers occur
in the shales 200 feet
above the main mass of

the l-. At the point of greatest development the l- is about 300 feet in thickness. From this point it thins out quite rapidly to the north so that near S.H. No. 6. the underlying & underlying shales unite. A fault line may cut off the eastern side but I think it is doubtful as the l- has the appearance of being an ~~elongated~~ ~~lenticular~~ lenticle unbroken on the north & cut off abruptly on the south by a fault line. A gap of a mile occurs & then the l- near the railroad appears with a thickness of 175 ft. & an outcrop of not more than 1500 feet the shales surrounding it.

(3)

In the northern more the following fossils were found in a half hour search.

(Add list)

In the smaller southern portion the following species occur: X

(add list)

Foot note

X On the map the locality is indicated by a small circle.

From ~~the~~ ~~the~~ railroad south to nearly the town line between Fort Ann & Hartford the crazy l- is ~~highest~~ the summit of the limestone & the Denton

horizon is one of ~~shales~~
 argillaceous & arenaceous
 shales & no line of demar-
 cation exists between the
 Trenton & Hudson River
 terranes.

Near the Hartford line
 the Trenton re-appears
 as a deposit resting
 directly on the ~~Shuttop~~ l-
 and beneath the shales, the
 dip being 30° E. near the
 shales & 20° in the Chazy
 l-. The Trenton l- has a
 thickness of nearly 50 feet &
 extends southwest along the
 line of the Chazy nearly
 to Smiths Basin where
 it disappears, the ^{overlying} shale
 resting directly on the
 Chazy l-. ^{at} The outcrop
~~is~~ described of a small
 outcrop on the line of the

great fault 2 miles (5)
north of Bald Mt in
Greenwich one the only
exposures of the Trenton
l- known to me in the
County.

In Kingsbury & Fort Ann
west of the Champlain canal
the shales rest on the arenaceous
layers of the Calciferous &
the Chazy l- does not
appear until the vicinity
of Sandy Hill is reached
& the Trenton in the
immediate vicinity of
Glens Falls in Warren
Co. (See notes of 1884.)

From the above data
I think that we may
consider that the Trenton
l- is absent by man-
deposition in several
places & that ~~that~~ its
place is taken by

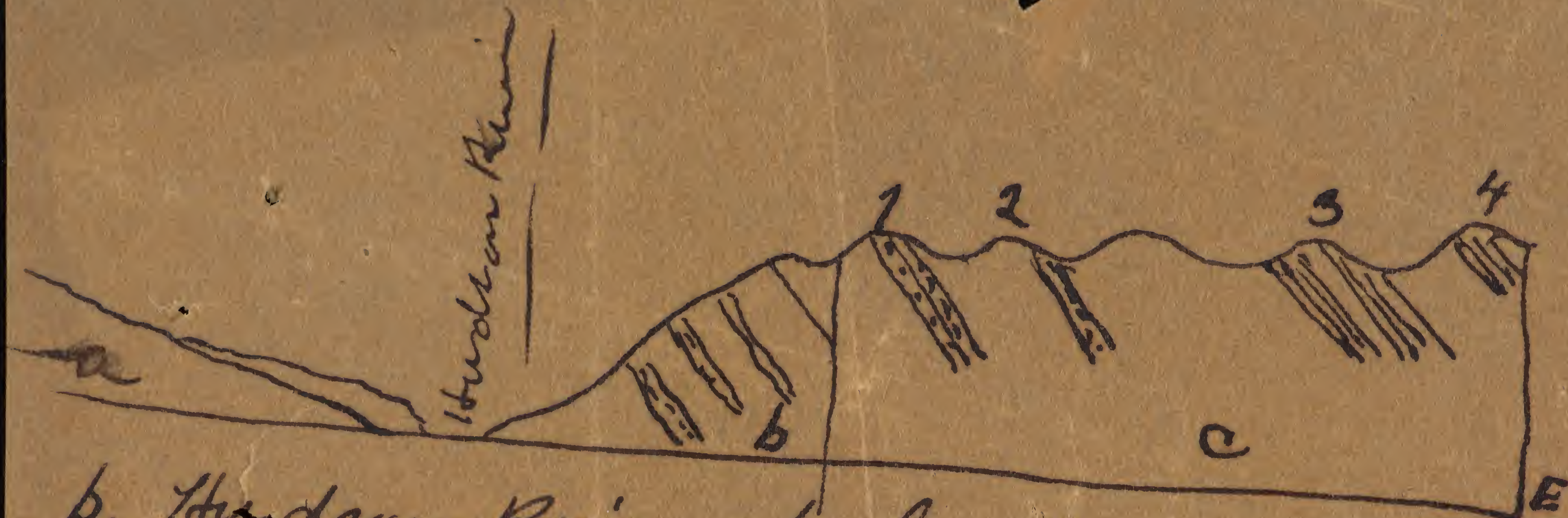
shales of the same (6
essential character
as those of the Hudson
River terrane +

8-29/87

Lentia l-

The Lentia l- appears
resting on the Chazy l-
in the N.W. part of Hartford
& the shale overlies it to the
eastward. It carries the
common Lentia fossils &
is about 50 feet in
thickness. It extends
S.S.W. west of Smith's
Basin.

Notes on the limestones
west of the great fault
limestone Washington Co. N.Y.
C.D.W. 1887,

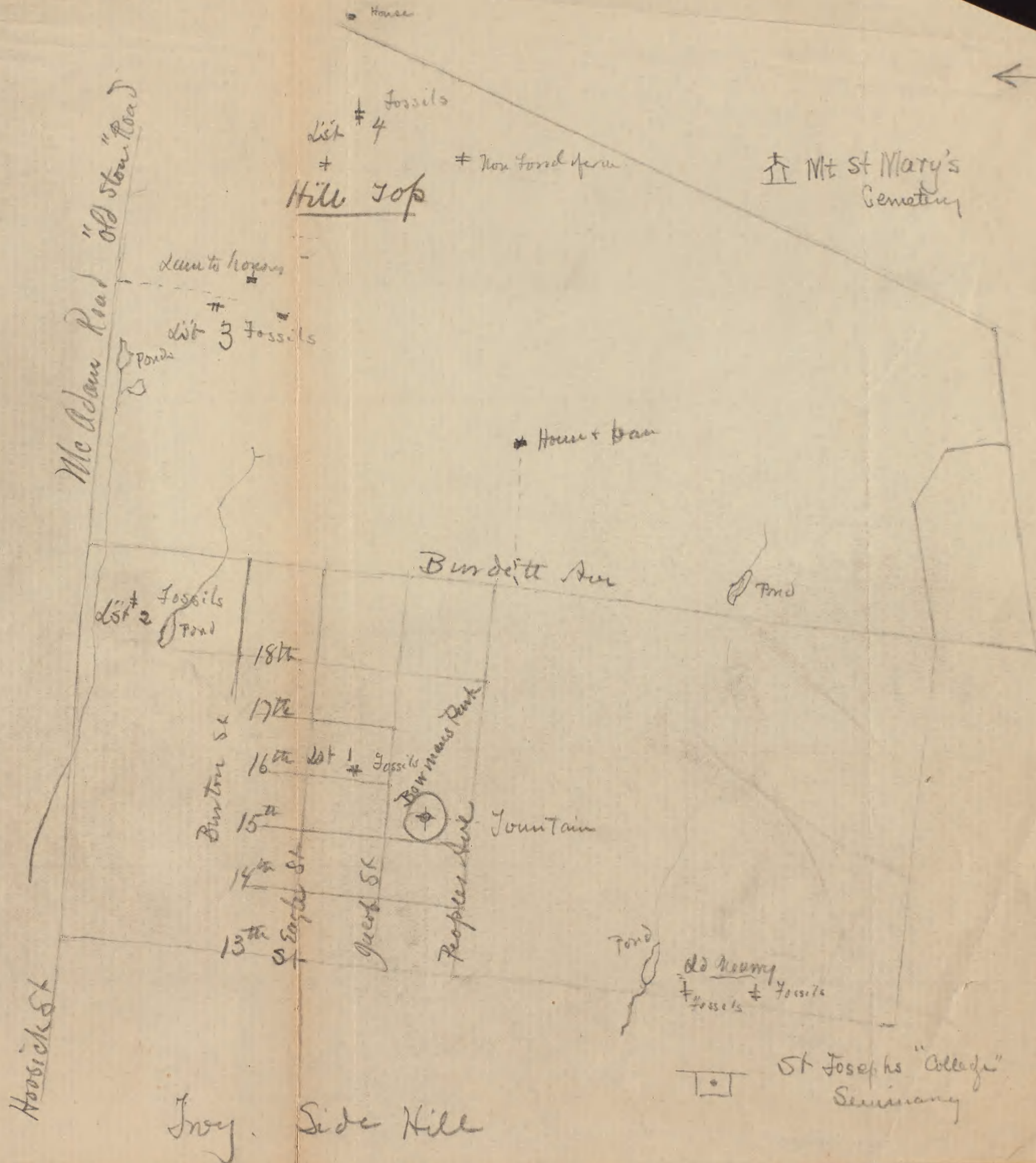


b. Hudson River shales.
 c. Pomardal. 1. 2. 3. 4 Bands of
 fossiliferous limestone.
 Vol 6. 1873. Am Jour W. Ford.

Plan of Older Potsdam
 Territory of S.W. Ford -
 drawn by C. Curtin
 from map of Troy in City
 Directory '83 and from
 memory - no measure-
 ments were taken.
 Troy, N.Y. Oct. 6, 1883.

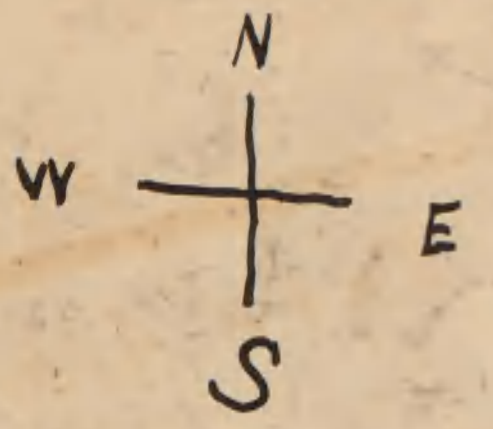
This area is on the hill top
 to the N.E. of Troy Union Depot

1 2 3 + 4 are thought by me
 to be the fossiliferous out crops
 1 2 3 + 4 of S.W. Ford



Troy
N.Y.

Pawling-Ave
Take-Albia-car.



2 1/2 miles

Mahle-Ave

3 miles

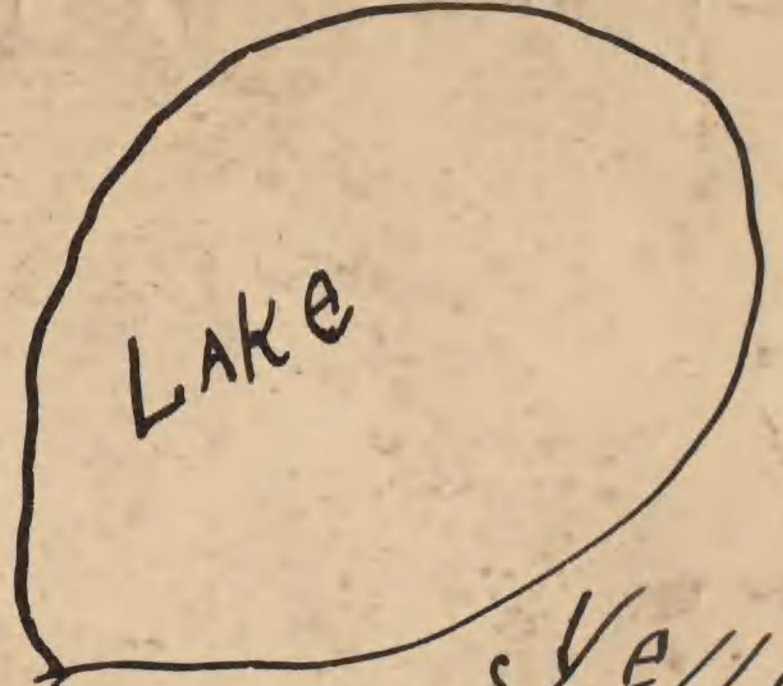
AIBIA

Residence
Property

Road-down-hill.

Paper-Mill

House



Yellow
Slates

Bridge

County-Quarries

No-1

No-2

Distance from Pawling Ave
to County Quarries
good 1/2 mile.