

1922

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Ord. of Va. & Tenn 8-19

39
Structure 19

1923

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1004

1930

Va.
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TRAVERSE BOOK

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

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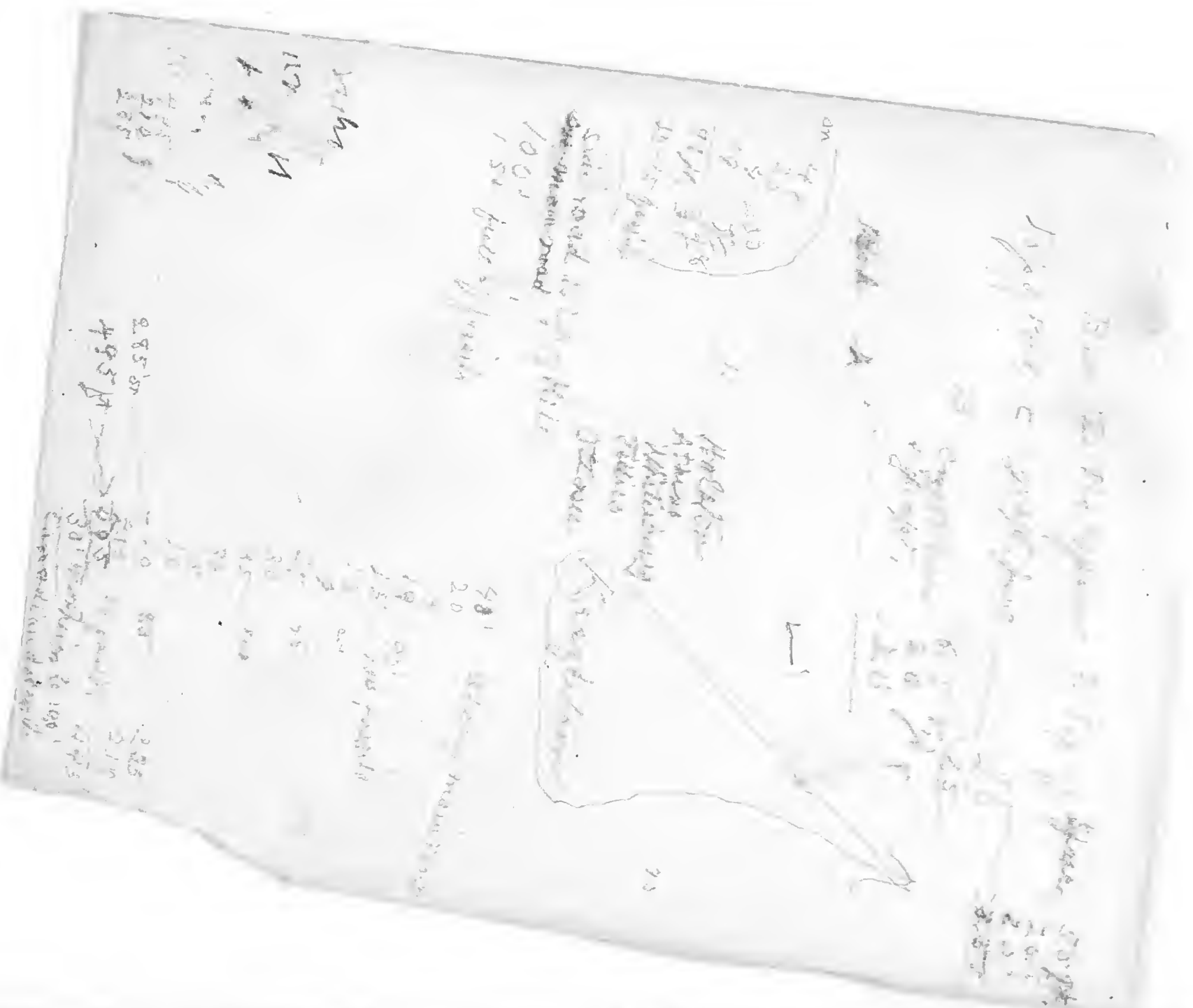
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 20 ft
 20 ft
 Top of Bed C graft joint 35
 25
 B Crystals + graft 65 ft
 20
 24

Bed A

on
 48
 20
 4 400
 19
 91 ft 3 ft
 20-15 fossils

Holston
 Athens
 Whitcomb
 Fellers
 Oleson

Kearzletown

side road to top of Hill
 main road

100'
 1.50 full of fossils

48' along main road
 20
 4

19
 15 - 100 fossils

13
 2
 27

30
 35
 30

5
 10

20 55 235
 210 210

285 ft
 495 ft
 210 15 fossils 445
 30' maximum to 100'
 Canadian dolomite

117
 405
 210
 285

75
2
35
20
9
30
45

218

30
10
20
50
250

30-82

15 670

005670
2000
1-80

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Millerstown

 probably Keefer collected 3

Wincy, Bill
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* Moccasin

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*Copy of the original report
of the Washburn shale above
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Very important
reference provided by Dr. B. B. 33 -
and also by Dr. C. W. Davidson*

Marble	
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GEORGIAN GEOLOGY
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YAVRUS TVCIGOTOE99
DEPARTMENT THE OF INTERIOR
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Juniata Furnace	
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GEOLOGICAL SURVEY
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---	---

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---------------------------------	---

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---	----

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--	----

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YAVRUS TVCIGOTOEG
DEPARTMENT THE FO INTMENTI
SEATIS DEITINU

Green shale
with ostracods, Wills Creek Gorge, Cumberland,
Md. 7

Hermitage
Curdsville, Bigby, 215', Loyston, Tenn. sec. 55
Hiatus
equals Muret, Holston, Strasburg, Va. 9
Hilderbergian
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of Broadway, Va., 31

Holden, Dr. R. T.
" with Ulrich and Mesler, Blacksburg, Va. 11
" " " Newport, Va., sec. at
Sinking Creek $1\frac{1}{2}$ miles east of, about 10
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Holston, Murat
equals hiatus, Strasburg, Va. 9
Holston

65' sec. at Sinking Creek, $1\frac{1}{2}$ miles NE of
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* Conococheague	1000-2000' in Strasburg, Va., sec.	10
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GEORGIAN STRATIGRAPHY
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

Cincinnati

at Broadway, Va., sec. thru Brooks Gap in

Little North Mt., west of,

Eden

Clinton

?Fairview,

Gray

ss

Page
31

at Broadway, Va., sec. 31

lower and middle at Lewiston, Pa. 5

ostracods and anoplotecha, 200' or more above

base of, Lewistown, Pa. 5

at Mulberry Gap, Tenn. 17

saw none in anticline north of Newport, Pa. 1

sec. at Juniata Furnace, 3 mi. E. of Thompson-

town, Pa. 3

collection here at Thompsonstown, Pa. indicates

high middle or low upper. Compare cresserton

ore which zone should come in lower than this 3

lower - possibly exposed at Thompsonstown, Pa. 3

sec. at Juniata Furnace, Juniata Co., Pa., 3 mi. east

of Thompsonstown, Pa. 3

considerable thickness of should come beneath

Zygospira emaciata zone at Thompsonstown, Pa. 3

92' of upper part at Loyston, Tenn. 53

Conasauga

or Nolichucky, Madisonville-Povo road 83

Madisonville, Tenn. 85

* Cotter

or all in Jonesboro, 2 mi. west of Bulls Gap,

thence NW toward Russellville 69

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4 mi. north of Fountain City, Tenn. 51

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it and to top of Rich Hill, Va. 29

* Conocheague

or more likely Elbrook 29

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YEARNS TACIGOTOGG
DEPARTMENT OF THE INTERIOR
SALVAGE DIVISION

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with Ulrich and Resser, Brushy Mt. sec.	29
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Cacapon	17
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YEVNUS 7VC1G1070E9
 DEPARTMENT OF THE INTERIOR
 SĀTATS ĒĒTĒINĒ

Bloomsburg in Ferguson's valley	5
Bluff City pre-Lenoir marble outcrop 1 mi. north of Arcadia school passed on drive from Rogersville to Johnson City, Tenn., via Kingsport, Blountville, Bluff City, Piney Flats and Austin Springs	66
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	55
	58

Bevan with Ulrich, Butts, Teichert, Brown, sequence of Cambrian beds at Austinville, Va.	93
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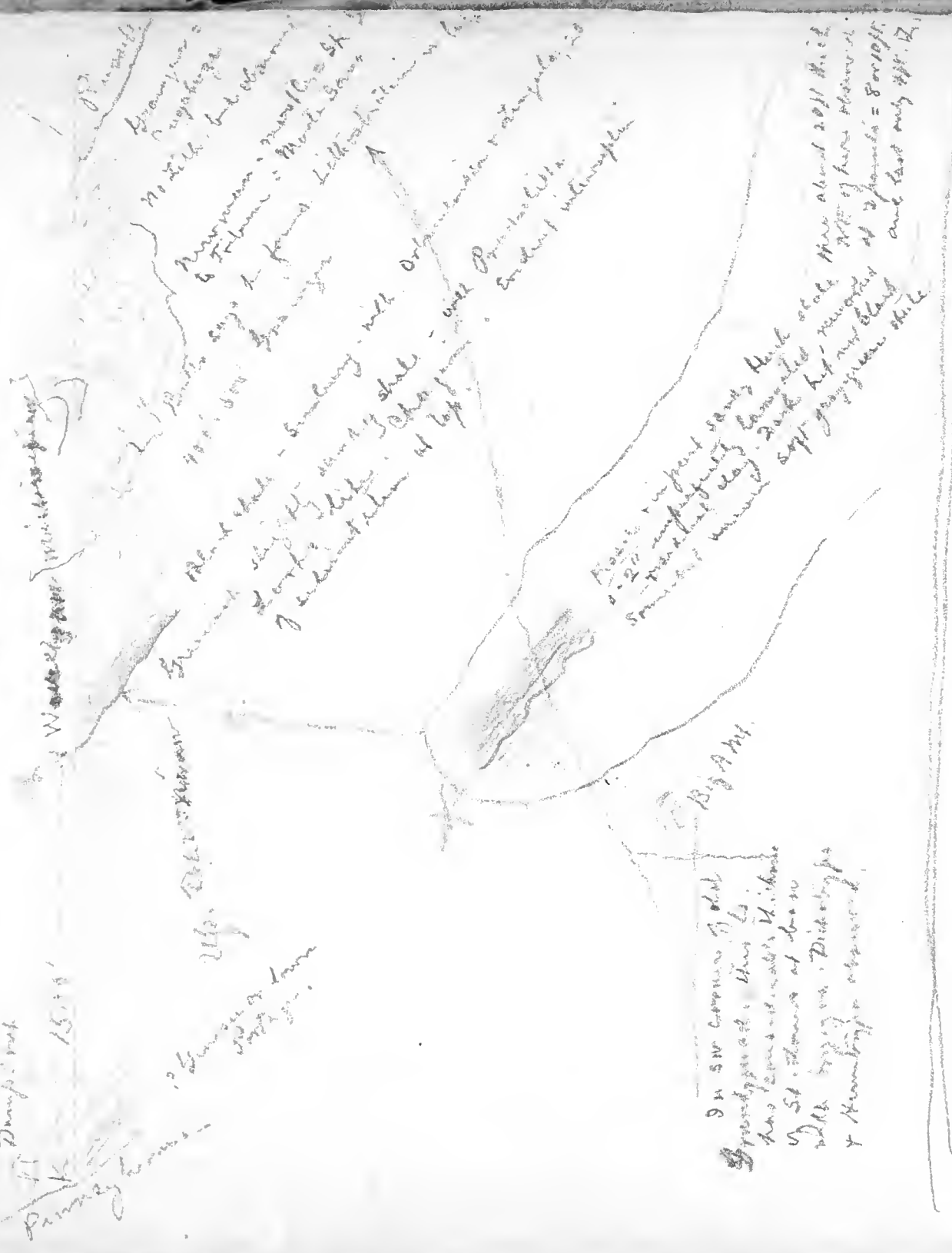


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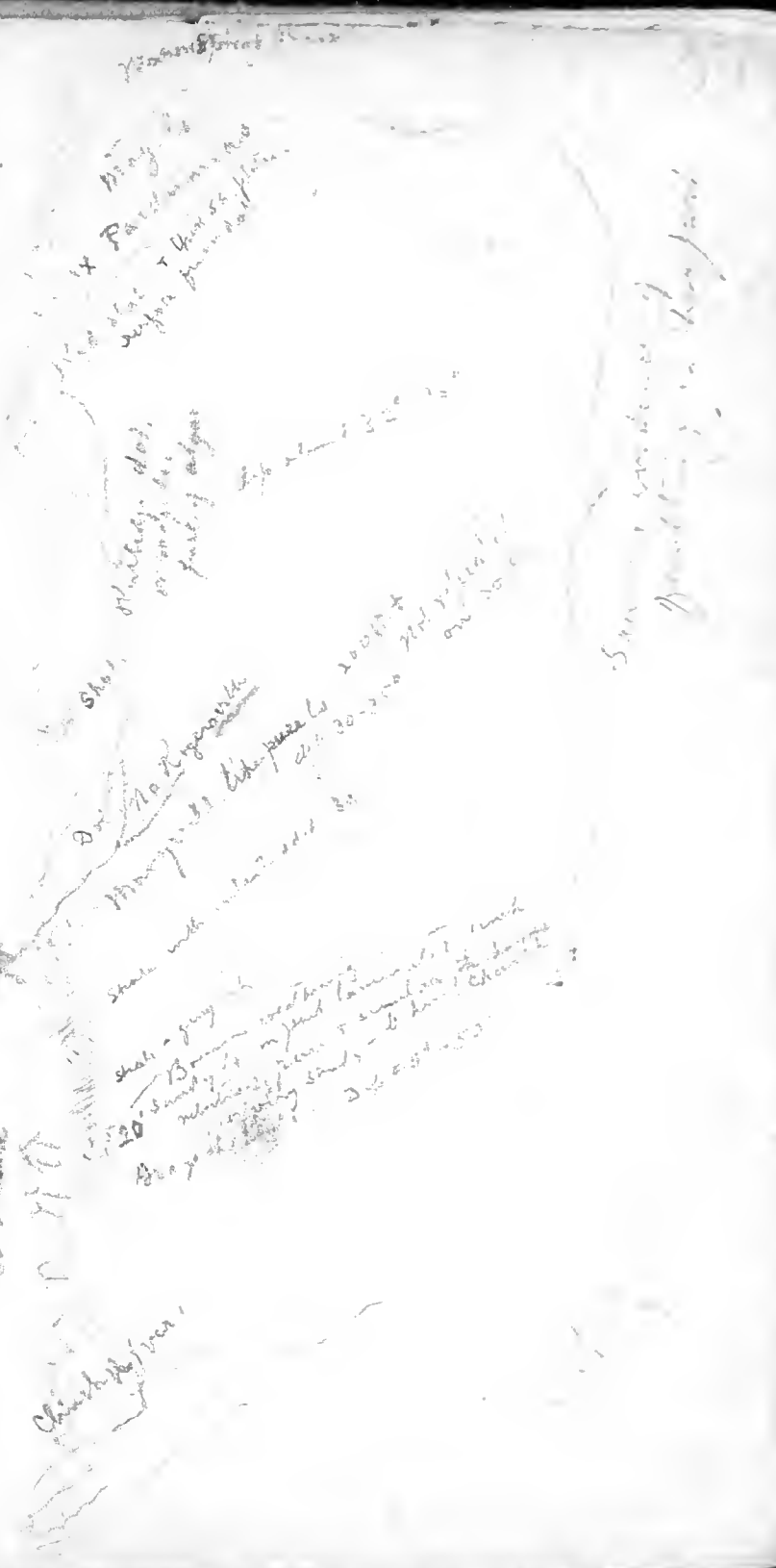
Alpha, Tenn.
 Gastropods - 1/4 mi. NE of on south side of RR 69
 Anoplothecca
 200' more or less above base of Clinton at Lewiston, Pa. 5
 Athens
 shale - Murat under at Lexington, Lexington via Fincastle 10-A
 thins materially going northwest across strike from Bullsgap, Whitesburg formation, Whitesburg, Tenn. 15
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 and ls. at quarry, Marion, Va. 96.
 Arcadia School
 Fowell chert - typical drusy near top of.
 Canadian at 66
 Austin Springs
 passed Arcadia Springs on drive from Rogersville to Johnson City, Tenn., via Kingsport, Blountville, Bluff City, Piney Flats and Austin Springs 66
 Arcadia School section at, April 21st, 1909
 passed on drive from Rogersville to Johnson City, Tenn., via Kingsport, Blountville, Bluff City, Piney Flats & Austin Springs 66

Cleveland to Dumps in May 21, 1915
 Dumps in Mississippi section
 NW
 Dumps
 1510



In SW corner of hill
 Spent geodes, thin ls.
 has some small shells, Strophomena
 W. St. Thomas at base of
 with large ones. Plectambonites
 + Strophomena observed

Cleveland to May 22, 1915 - Cambrian section, SE
 NW
 Cleveland



shale - grayish
 20' sandstone - mostly blue - with Plectambonites & Strophomena
 thin bedded shale - with Strophomena & Plectambonites
 sandstone - mostly blue - with Plectambonites & Strophomena

Princeton

Coop. from [unclear]
New Scotland

May 25, 1922

$\frac{1}{2}$ - 1 m. S. of Hopewell, Pa.

Saw no Clinton in
anticline north of
New Bloomfield ~~near~~
south of Johnsbury.
Clayport's map of Perry
Co. evidently incorrect.

A

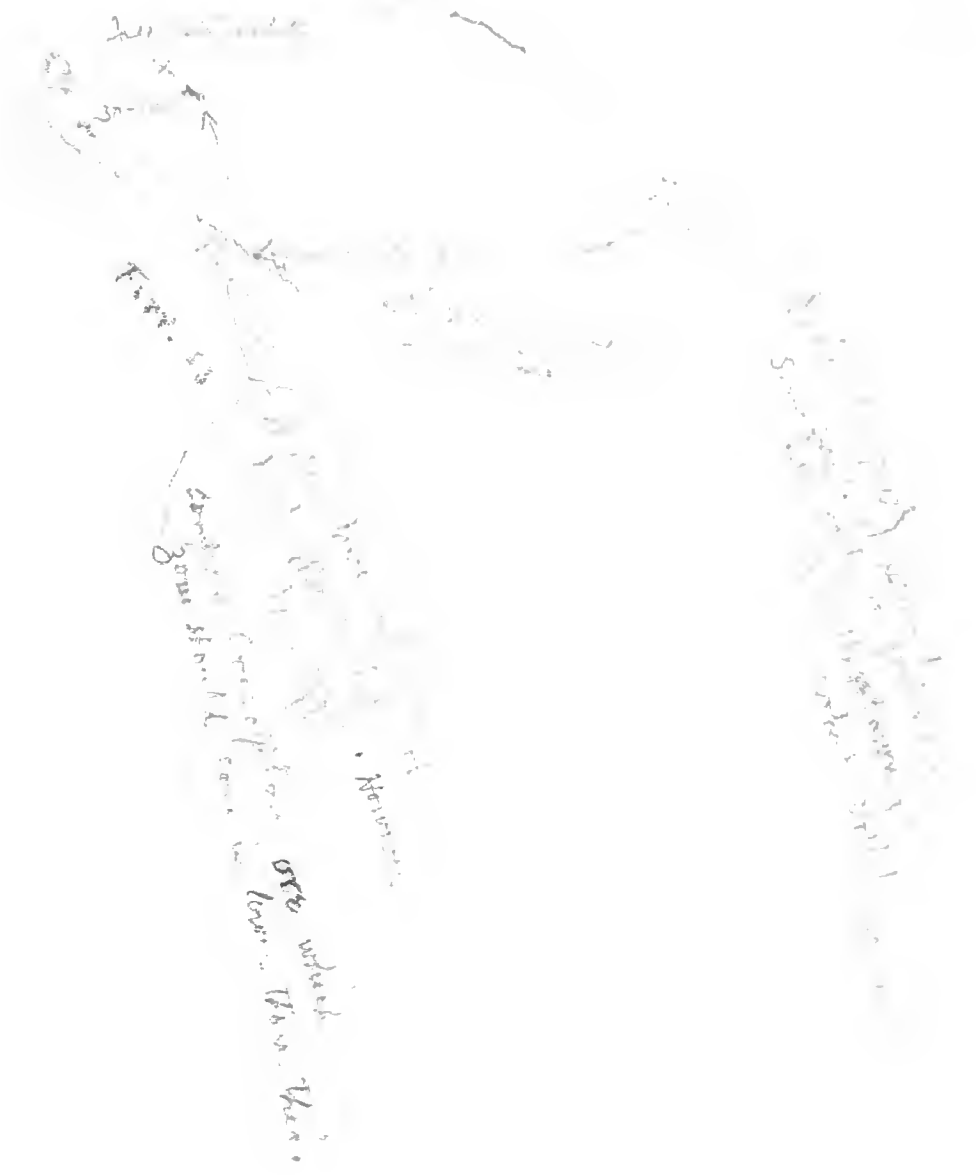
May 25 1922
with notes

Clouds in line of ...
Thompson ...

Some ...
Some ...

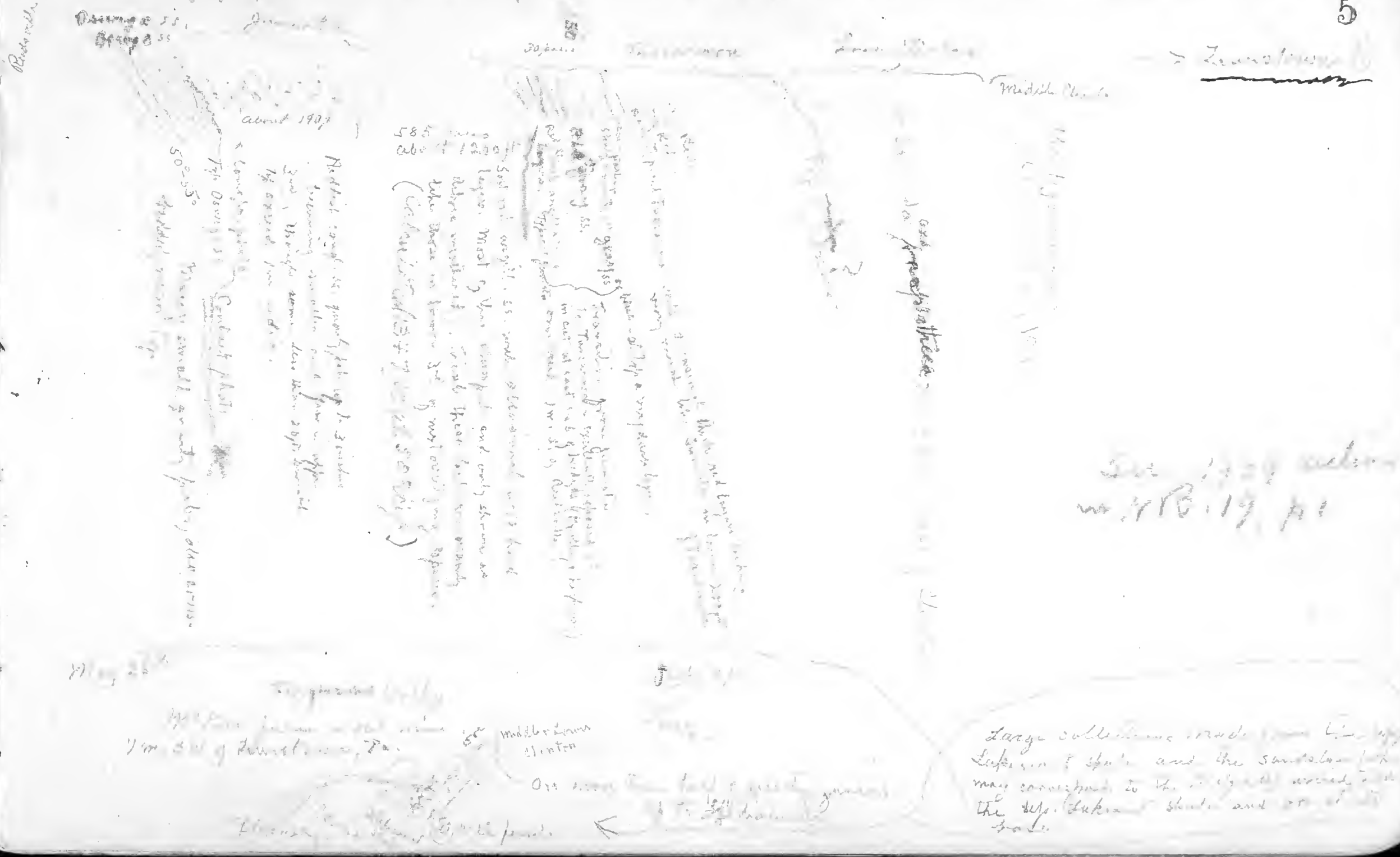
Following ...
... ..

Some ...



along gorge to Lewisburg →

May 25, 1909, with Wheeler



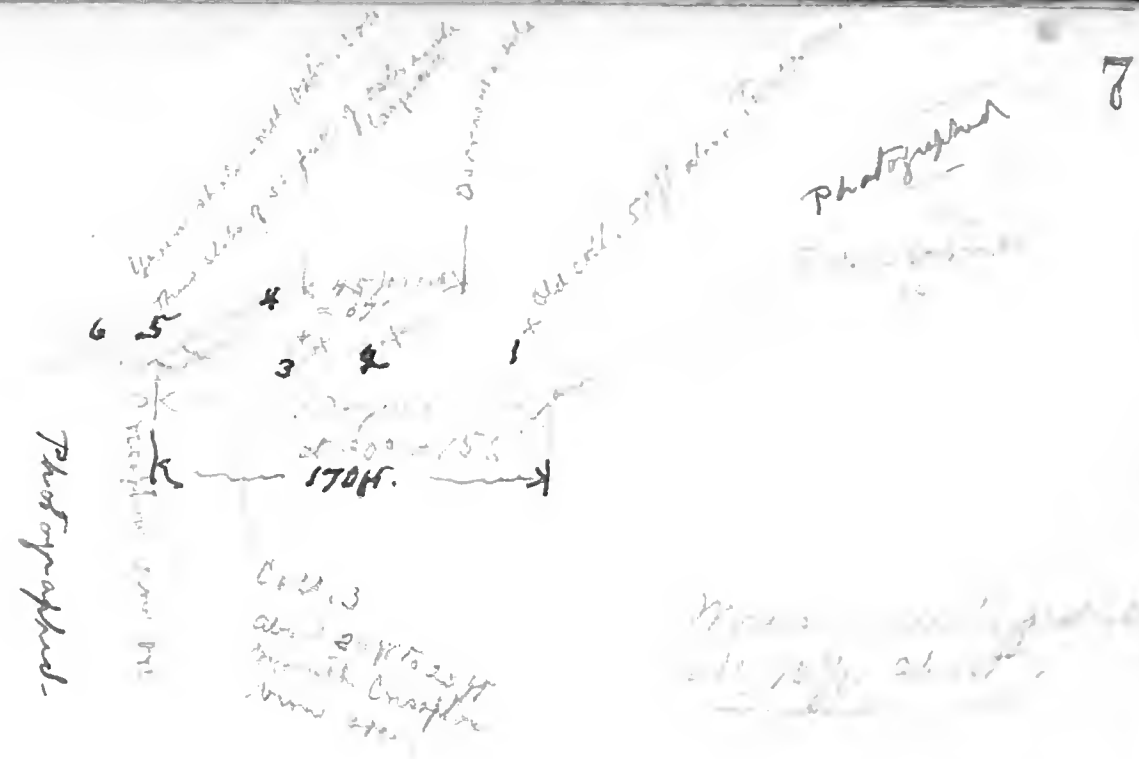
May 26

1 1/2 miles from ...
1/2 mi SW of Lewisburg, Pa.

On road from ... to ...

Large collection made from ...
Lefevre & Spate and the sandstone ...
may correspond to the ...
the ... and ...

Wills Lonic gorge,
Cumbria
May 27, 1922

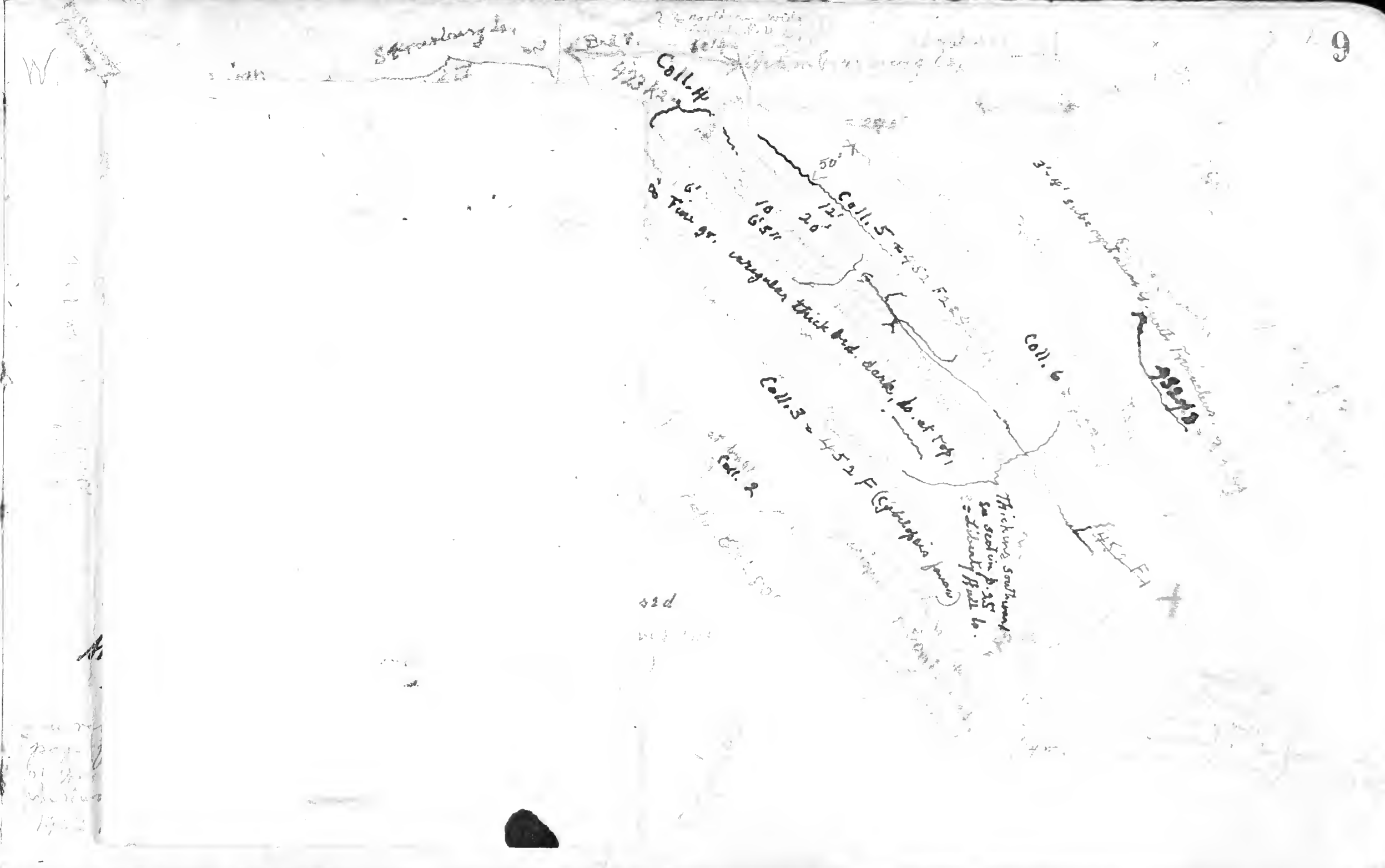


- Observed zone = 170-57ft above Trossachs
- Z. antiochiensis 2 = 98ft
- Z. decorazona 3 = 142ft
- Z. amacista 4 = 170-174ft
- Z. lampartii = 5 = 178ft
- Z. solis composita 6 = 180-5ft

Strasburg
Virginia
Fall 1938

X								
X	6	12					36	42
1	7	13	19	25	31	37	43	
2	8	14	20	26	32	38	44	
3	9	15	21	27	33	39	45	

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 Baltimore, Md. Atlantic City



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No.

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Field:

Determined:

LOCALITY:



Collector:

Date:

Memoranda:

Note Book:

Page:

May 31, 1922

J. H. [Signature]

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X	6	12	18	24	30	36	42
1	7	13	19	25	31	37	43
2	8	14	20	26	32	38	44
3	9	15	21	27	33	39	45

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Face 1938

Virginia

Stairway















Oct. 1938.

622

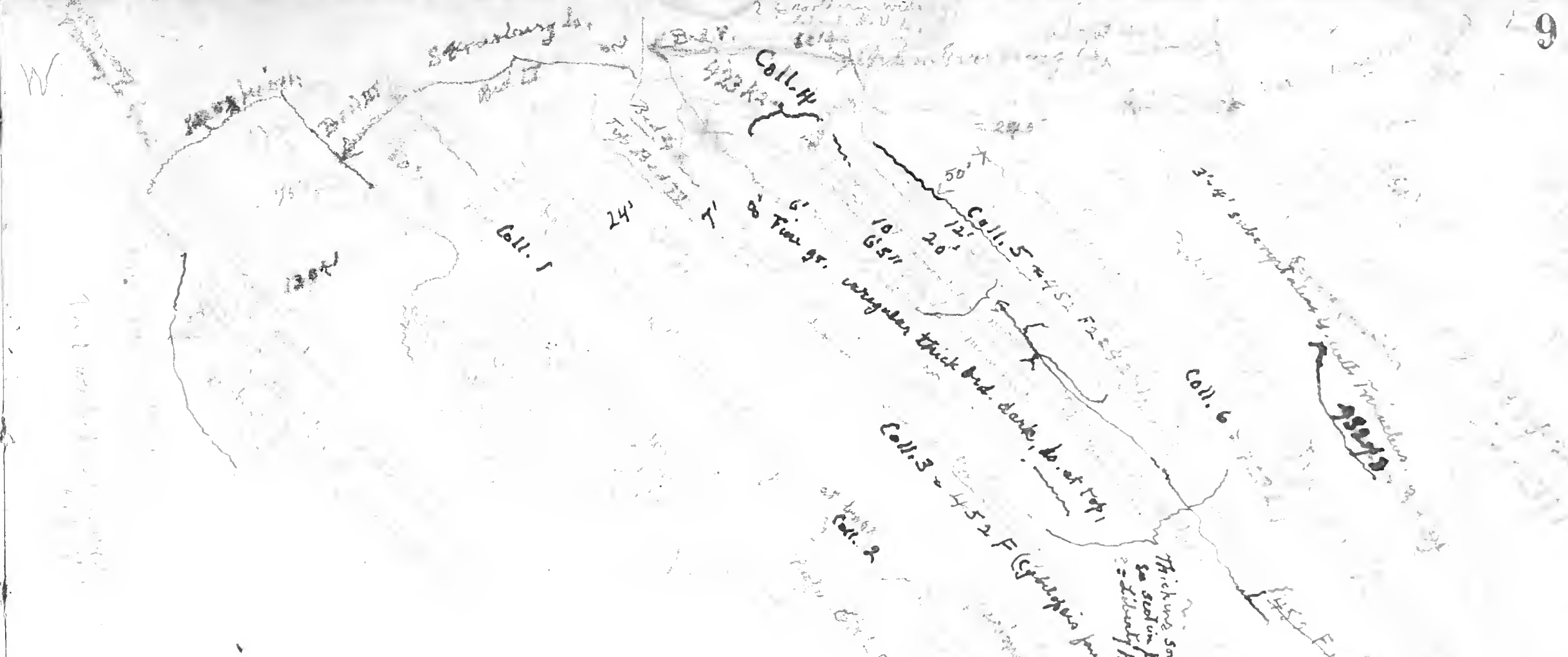


622
779



622

Revolution

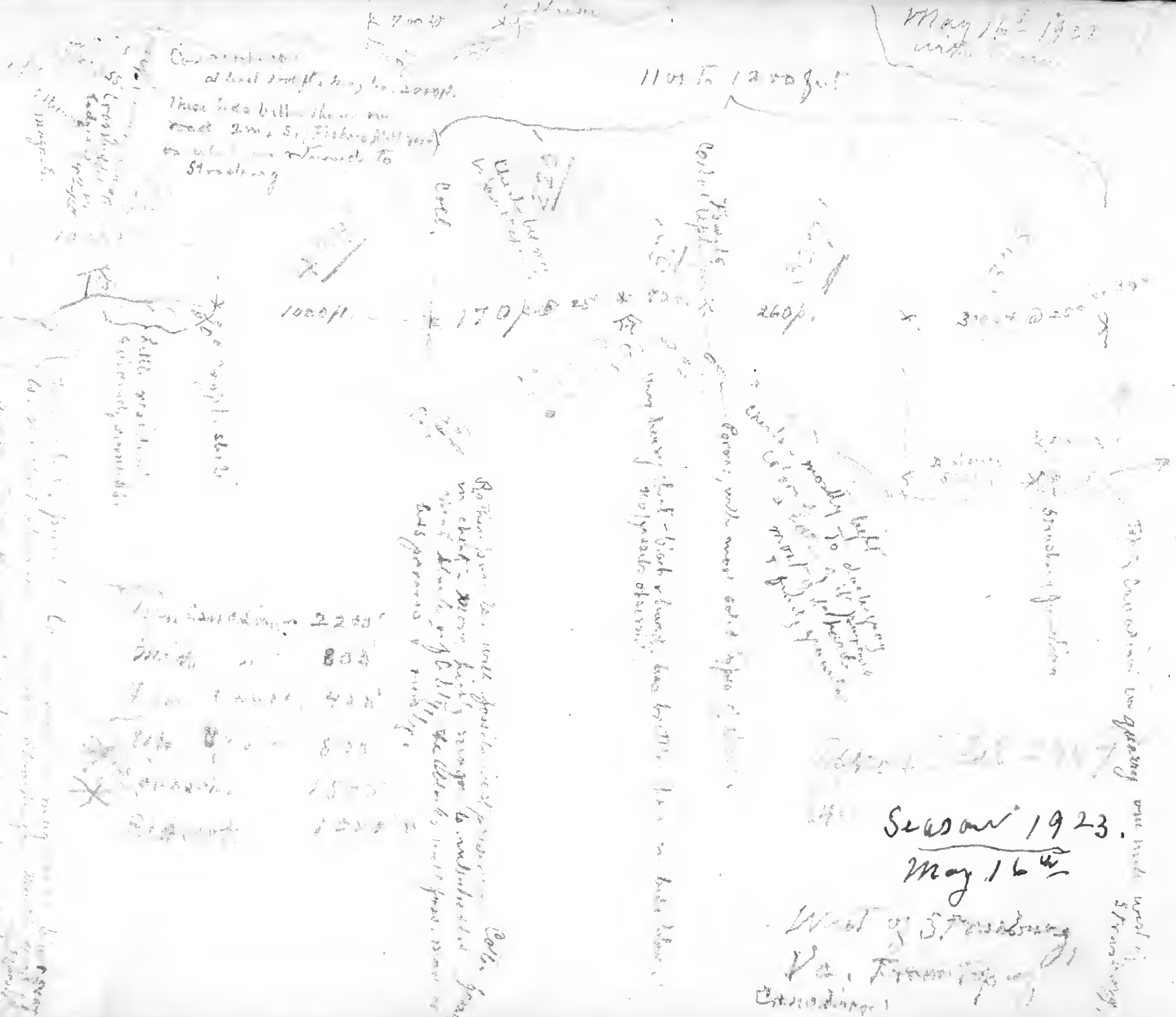


Strasburg, Va. Ordovician section, revised
 May 29 & 30th 1922 (1905, 2 sections revised
 on 10/8/52)
 W. R. R. Mather.

In reverse of this page for better part of the section (cont. northward) made in 1922.

F. Revolution section as labeled on page 11 all ...

Lower part (Lansing) in NW of Strasburg

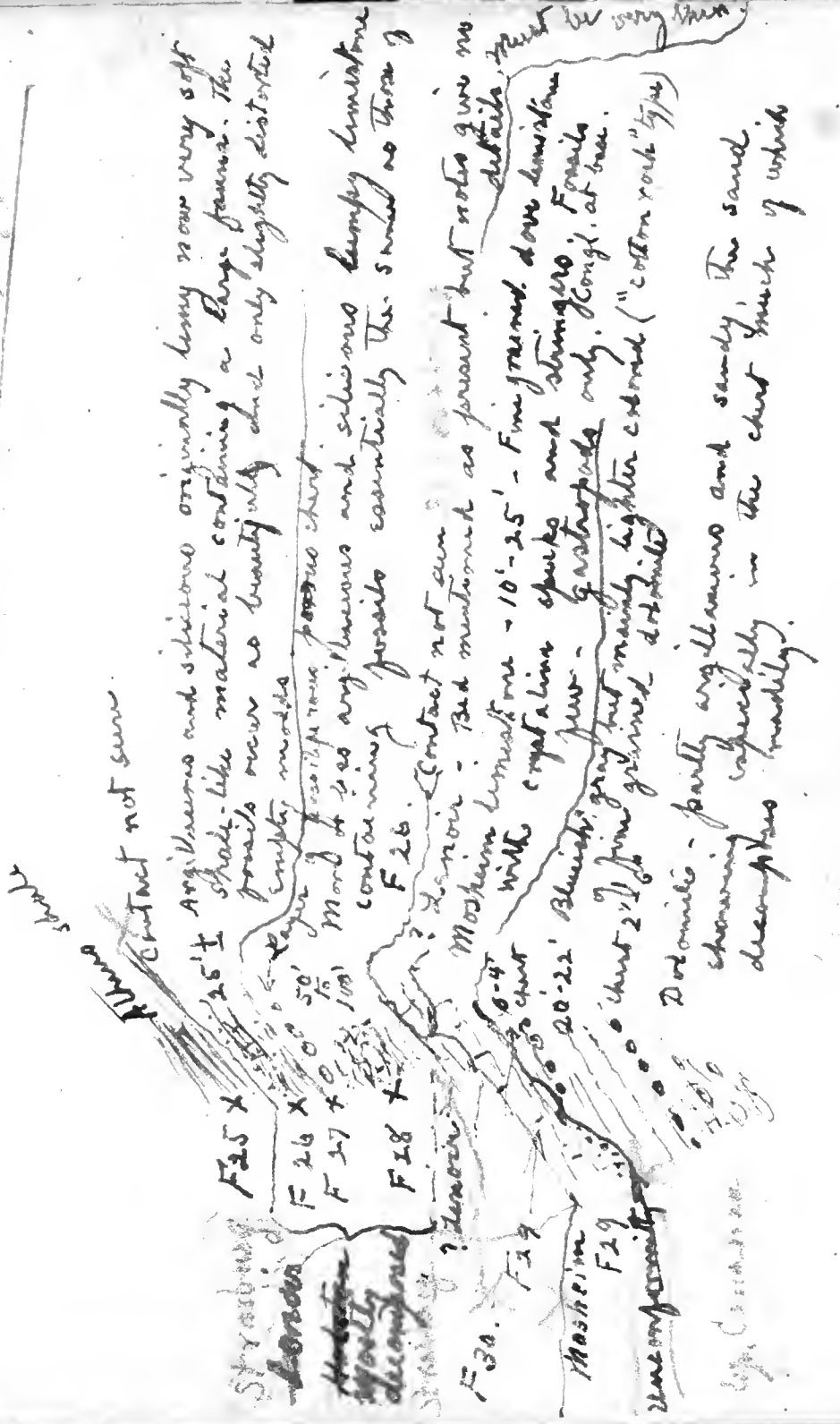


Season 1923. May 16th

West of Strasburg Va. From top of ...

May 16th 1923

Continuation downward of Catawba Valley section (For higher beds see reverse of this page)



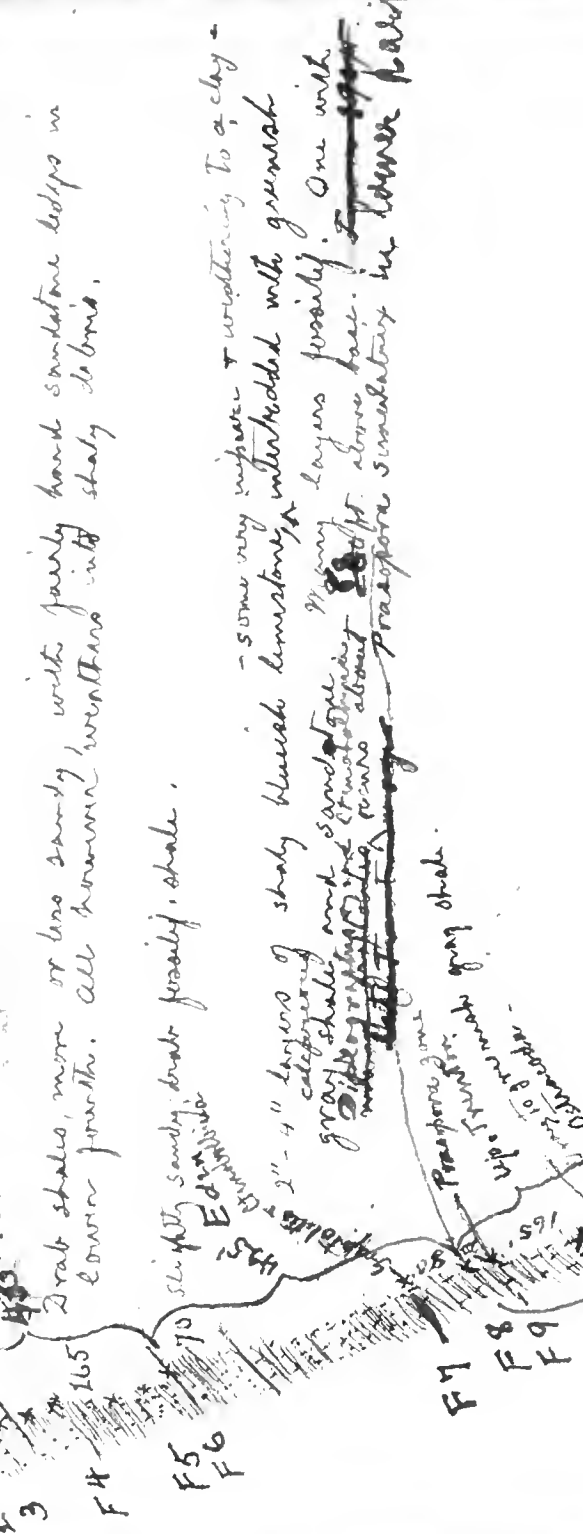
More information desired regarding the Holston? ... and Mosheim ...

May 20, 1923

1/2

10-B Section NW slope Catawba Mt. & Valley to E. summit R.D. Muler 1915-1919

Tuscarora (clayey quartzite) makes top of mountain. 1915-1919
100' or less purple ss. red and light gray harder layers interbedded.
Several layers of fossils, particularly one of *Traspora* beneath clitic. Basal McMill
Dark sandy shale, appearing massive in fresh exposure, and interbedding
Some calcareous shale - both more or less shaly fossiliferous; part of base
at base.



Shales and more or less nodular or irregularly bedded mostly thin limestone - highly fossiliferous. *Traspora sinuata* most characteristic fossils. Fossils particularly abundant at 35', 140', 170' and 175'.
Upper and lower beds consist of dark bluish compact ls., middle third more nodular all interbedded with gray shale. Collected fossils at 15' above base, 85', and 145 ft. above base.
175' in middle part.

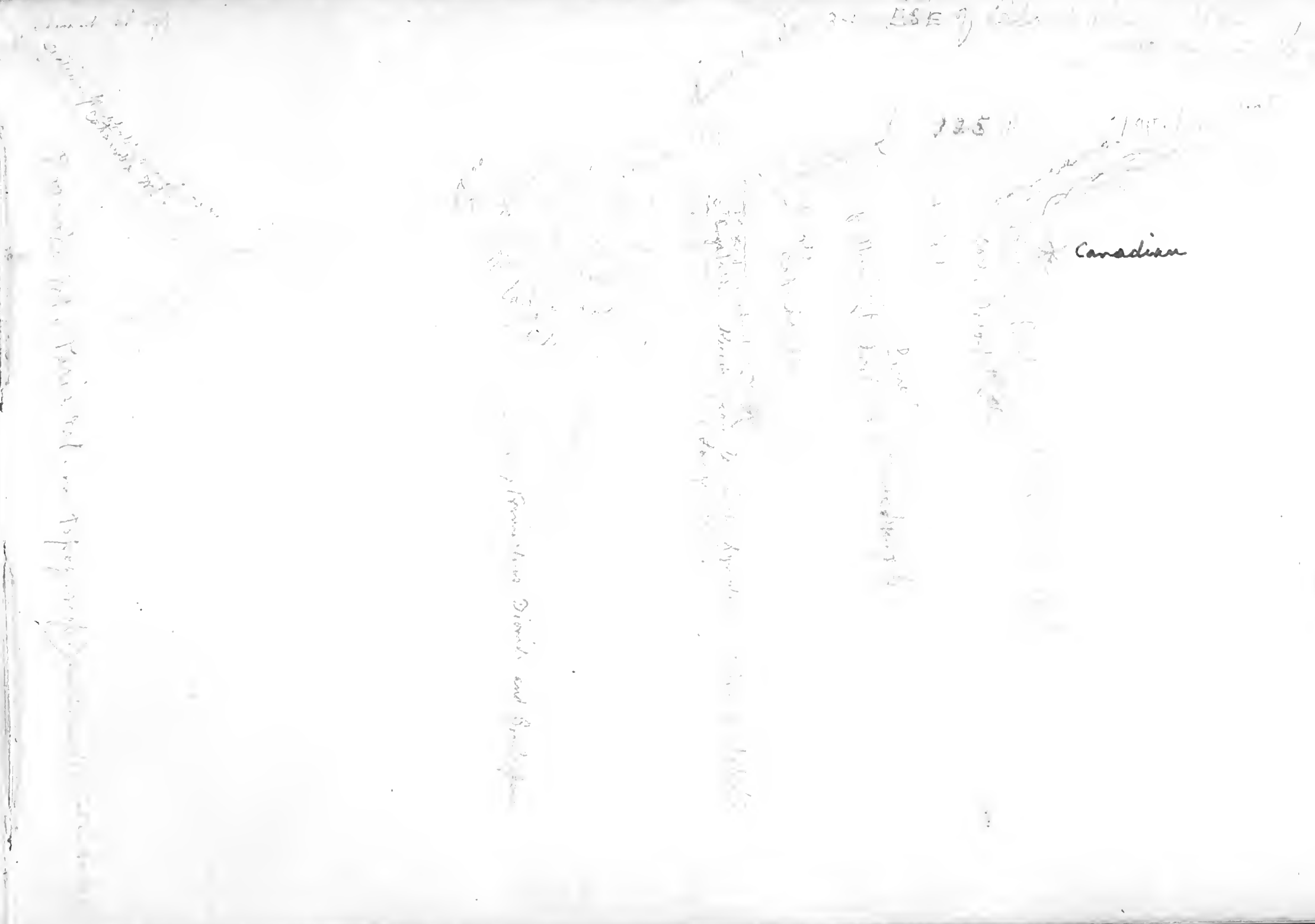
Upper 50 ft. less massive ss. out after breaking down more readily - dark color. Foss. zone 25 ft. beneath top.
Some thick beds conglomerate 7-8"
95' beneath top bed of red sandy shale 3-5"
100' beds red shale, lower 8", upper 12" with 8" ss. below
105' red shale with a few white green shale above it
115' Hard, dark & greenish, micaceous sandstone and some greenish dark shale on whole appearing rather massive. in fresh cut.
145' same as above a bit with *Lingulella*.
Dark blue compact ls.

Concreted
Hard compact bluish black or black even bedded ls. (1-2") interbedded with gray to bluish black thin shale parting. Sparingly fossiliferous. a few *Traspora* - *Athena* type
mainly gray to black shale with a few limestone layers in upper part. Fossils few. Opportunity gradual upward little at a time into the overlying limy zones of the Athens.

25' interbedded hard blue ls. & black shale
gray to black fine shale often filled with *Traspora*.

could be turned.

Catawba Mt. & Valley



Canadian

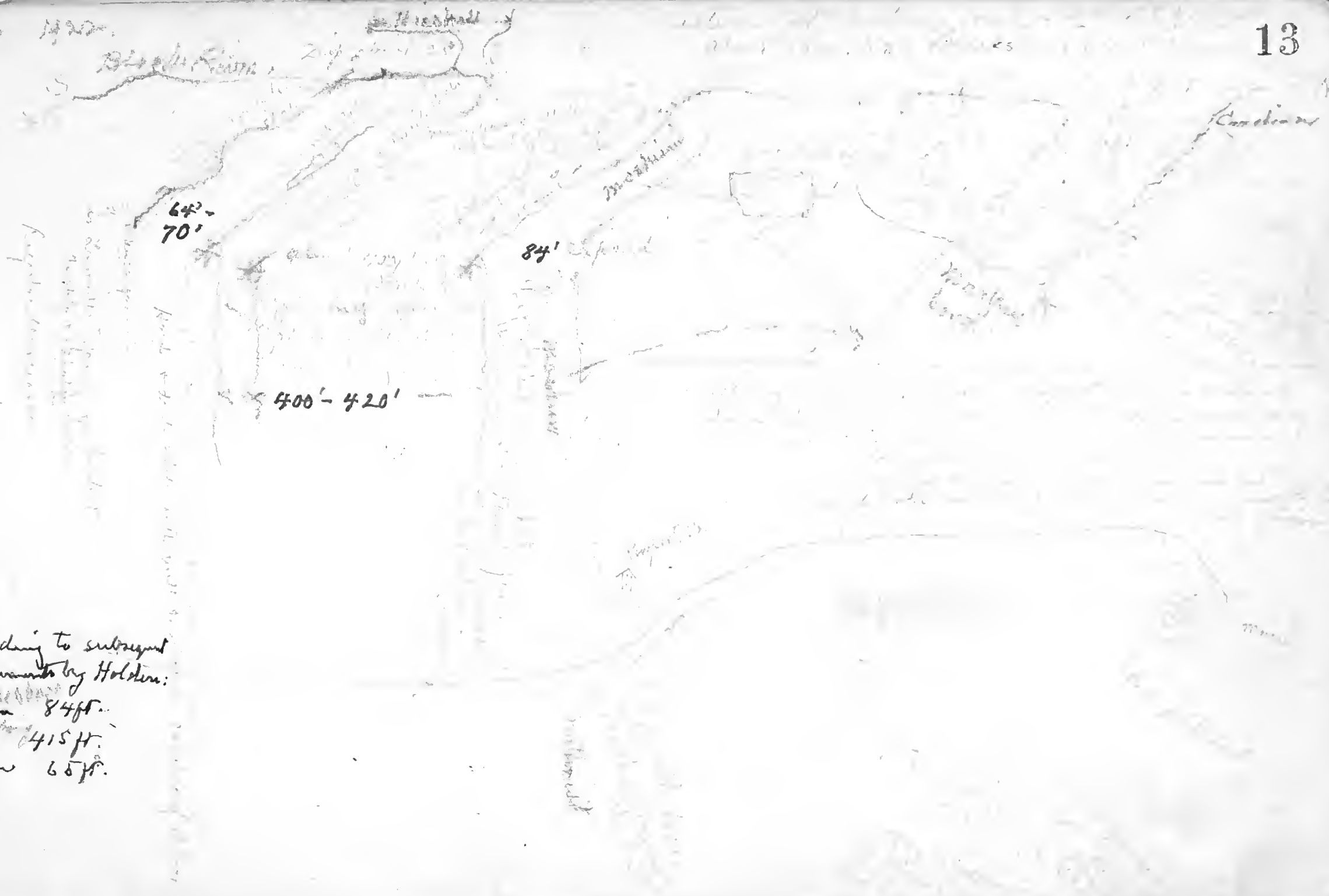
N
 Murfreesboro
 Moshell
 Sinking
 Strasberg
 Sta.

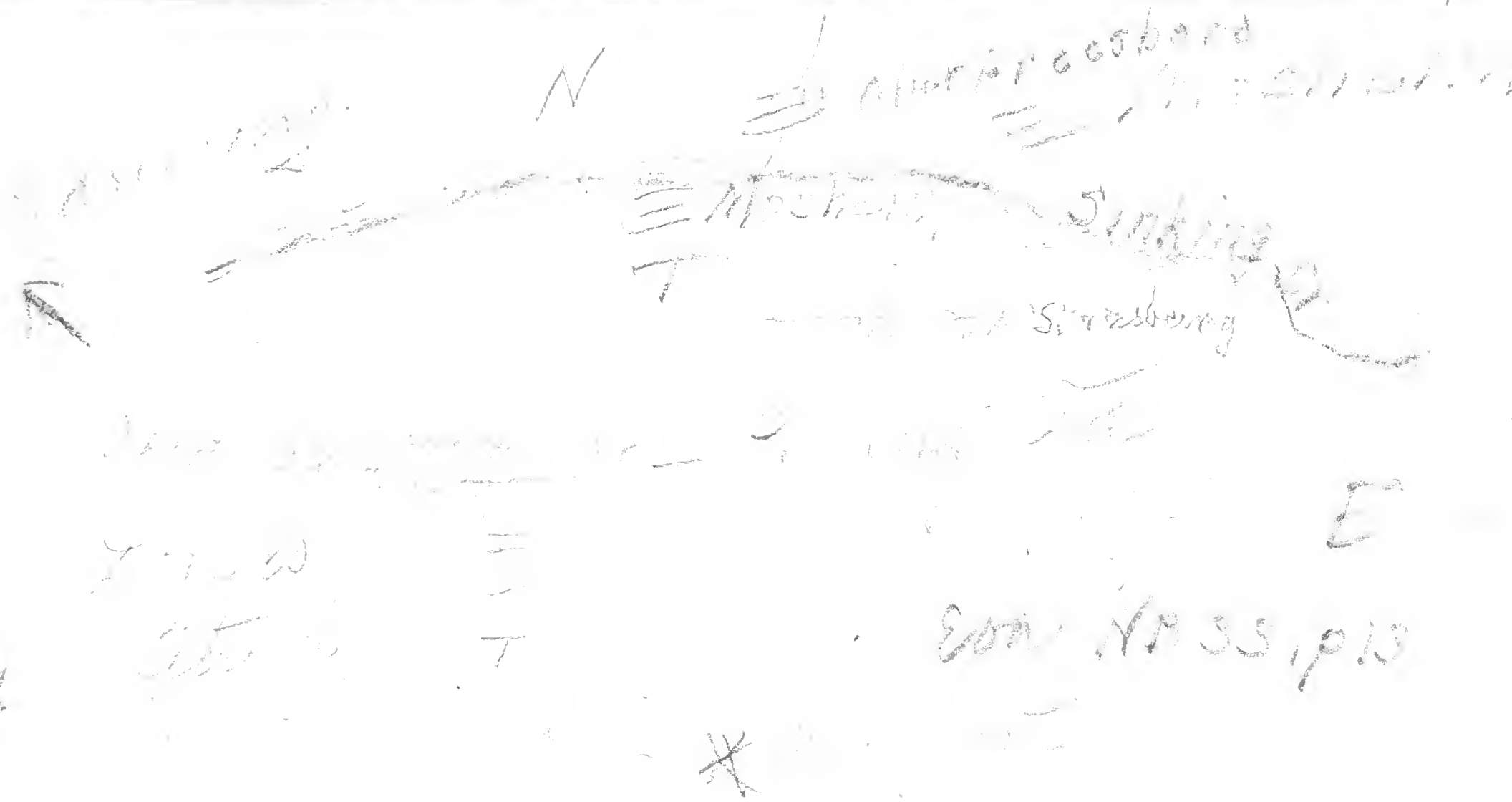
E

13

D. B. V.

June 1822





June 20, 1911

64' - 70'

84'

500' - 420'

According to subsequent
measurements by Holden:
Mochin 84 ft.
Sinkine 415 ft.
Holden 65 ft.

Handwritten notes on a separate piece of paper, including a large '5' and some illegible text.

5

July 7 727

be...
...
July 7 727

B.F.N.

...



Most of the Whitehall is
 exposed in the lower part of
 the north of Whitehall. In some localities
 protruding the soft crystal ls. is at or near top
 of formation. The Whitehall is less than 100 ft.
 thick. It should be noted that a ^{small} limestone lens
 occurs in the shale in the west section of these bands
 this lensing toward the west more than 1000 ft. in the
 surface and the Bull's Gap - Morristown path.
 Apparently the Albion also thin ^{intermittently} in going N. across
 strike from Bull's Gap. This would be as expected.

June 30, 1900

Got to ... from ... via ... - the ... road ...
to ... - but had to ... to ...
rest of the distance across ... - Powell Mt. ...

Mulberry Gap section - 1922 - Ordovician
+ Powell Mt. (Clinton)

See NB 25, p. 60-62 for ...
detailed ...

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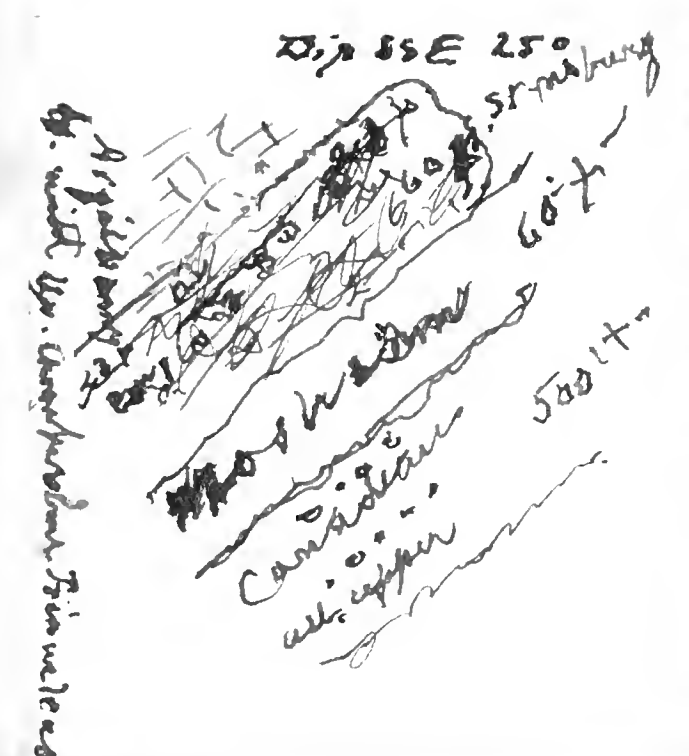
2

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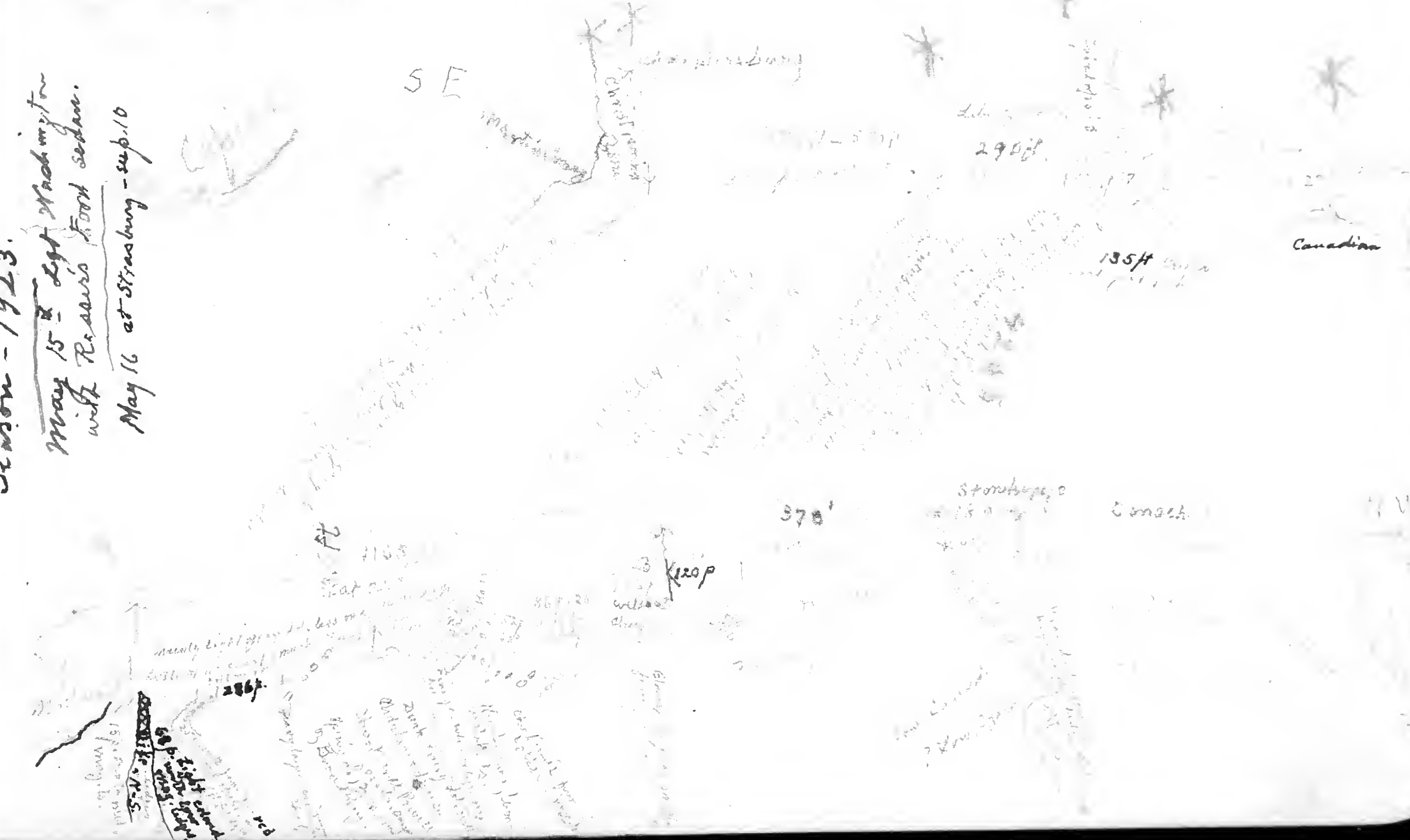
21

Canadian
 4 1/2 mi. N. of Strasburg
 2 1/2 mi. S. of Strasburg
 200 ft. at 400 = 570 ft.
 113 ft.
 222 ft.
 200 ft. at 400 = 570 ft.



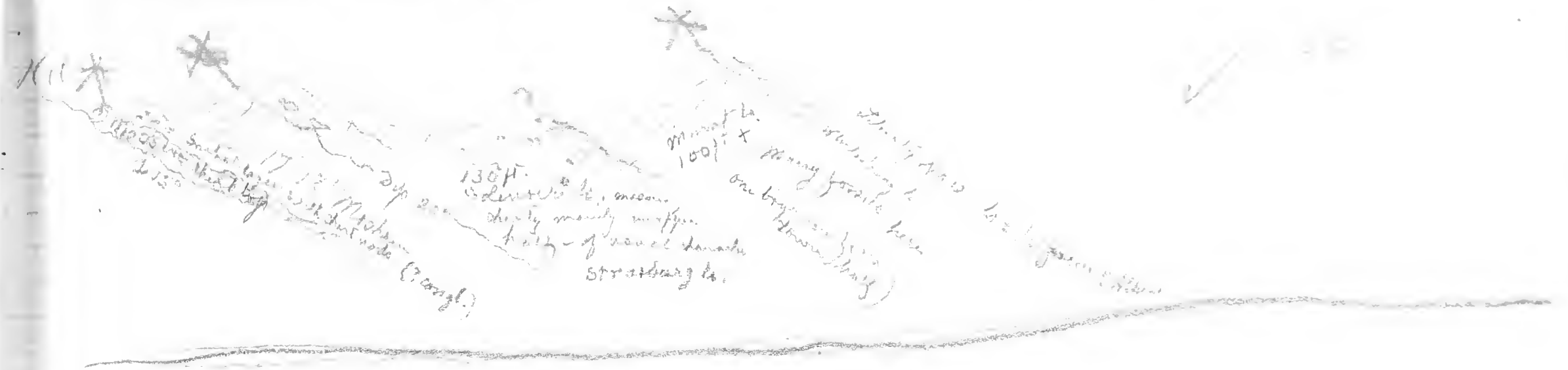
Season 1923 in Virginia with Proctor & Meade
 Road Leesville Road to Cherry Grove, Rockingham Co. Noodin's road. May 15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31

Season - 1923.
 May 15 - Left Washington with Reass's Ford sedan.
 May 16 at Strasburg - sep. 10



Section at Mount St.

May 17, 1920



Along Buffalo creek, where it crosses ...
 There is here at least 40 ft of Trenton ...
 in or at base of ...
 showing beneath overthrust Canadian ...



May 19

*
Fossiliferous
E. 2' med.

*
Fossiliferous
E. 2' med.

Brady Rd.

*
Crest

*
Fossiliferous

May 19 - Section across Brady rd across valley between it and ...
with N.S. ... and ...

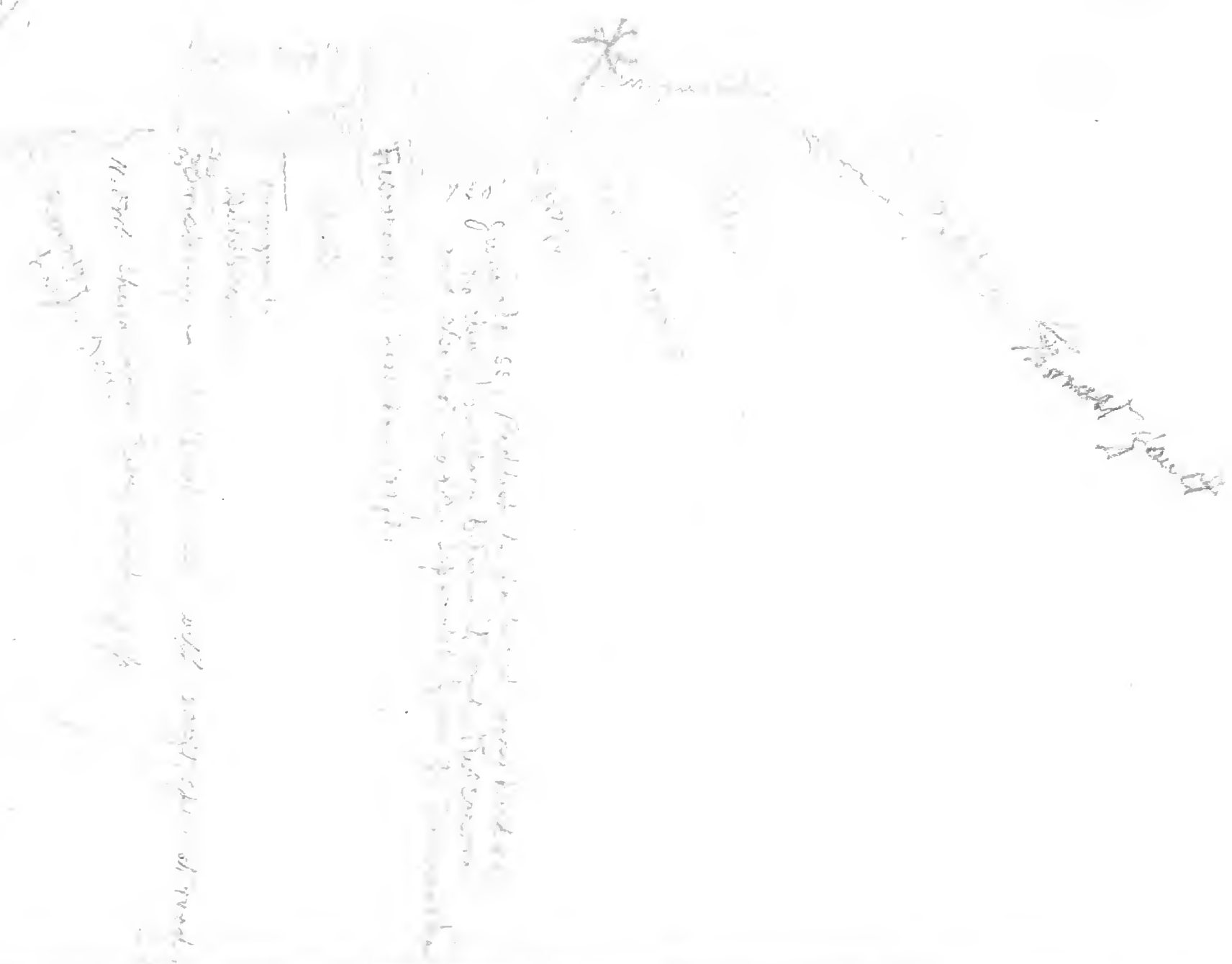
May 20 - Summit on ... section, with ^{probably} ~~lower~~ ^{Stasbury} ... all developed ...
... along ... - ... road. Just S of ...
... out of the Stasbury taken from here?

Stasbury

Sketchy section thro' the Brooks Gap in hills. North of road
Broadway, Ia. May 17th 1923.

Sketchy section

W.W.



From top of hill to road
 1. Sandstone (SS)
 2. Limestone
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 99. Sandstone
 100. Limestone

East Tennessee - 1923.

Interesting
Exposures

Knox

Clinton

2400' from top
of Knox

— base of divide to Keokuk River

— redish - sandy clay

— sandstone

— shale

— limestone

— sandstone

— shale

— limestone

— sandstone

— shale

— limestone

— sandstone

— shale

— limestone

— sandstone

— shale

marked by
the glacial drift

Section from North end of ...

June 7 1923

Section beginning 2 m. SE of Lake ...
extending to middle of bed made by
the Holston River on the east and the
Tennessee River on the SW side

Point

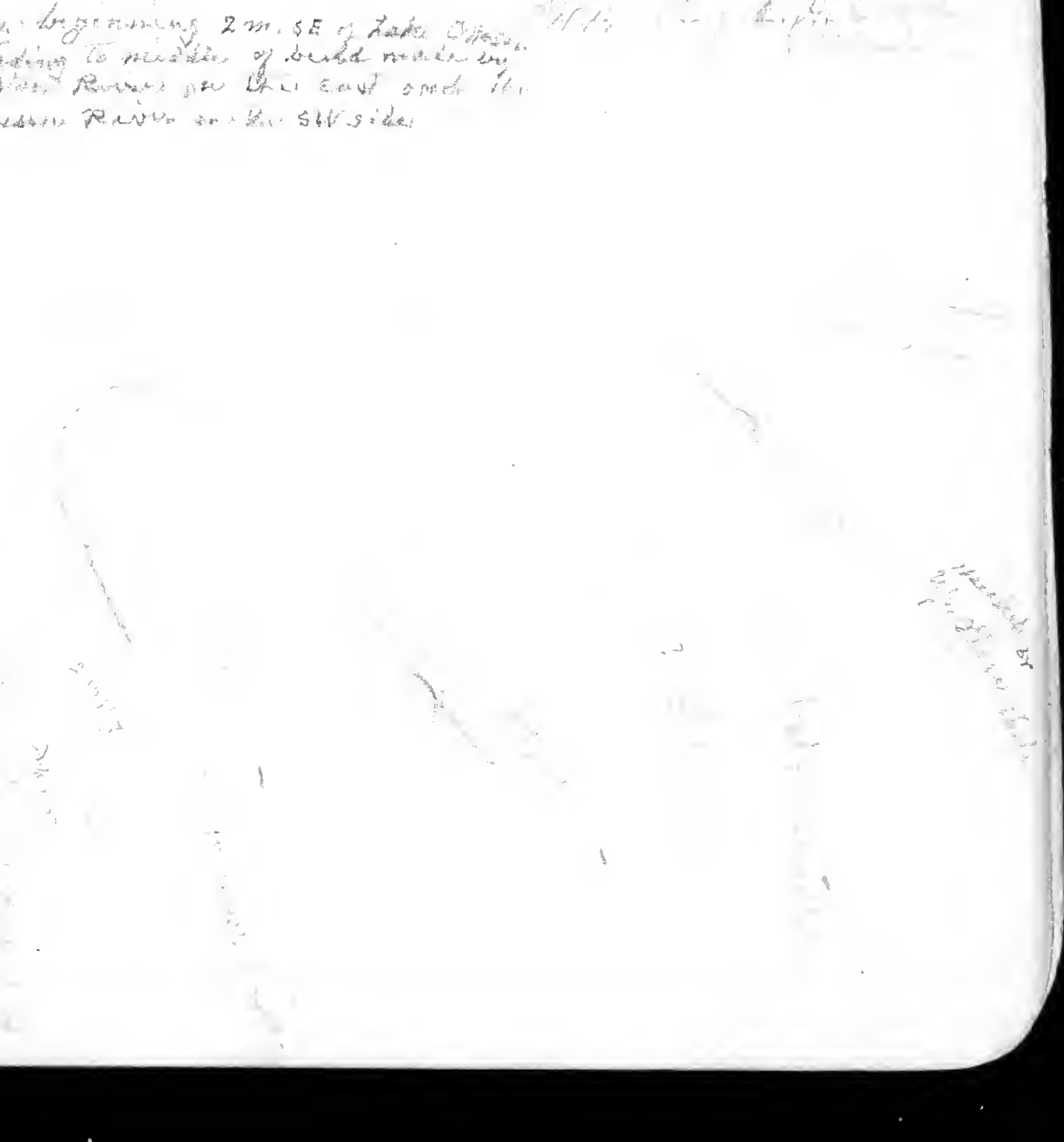
Point

Point

Point

Point

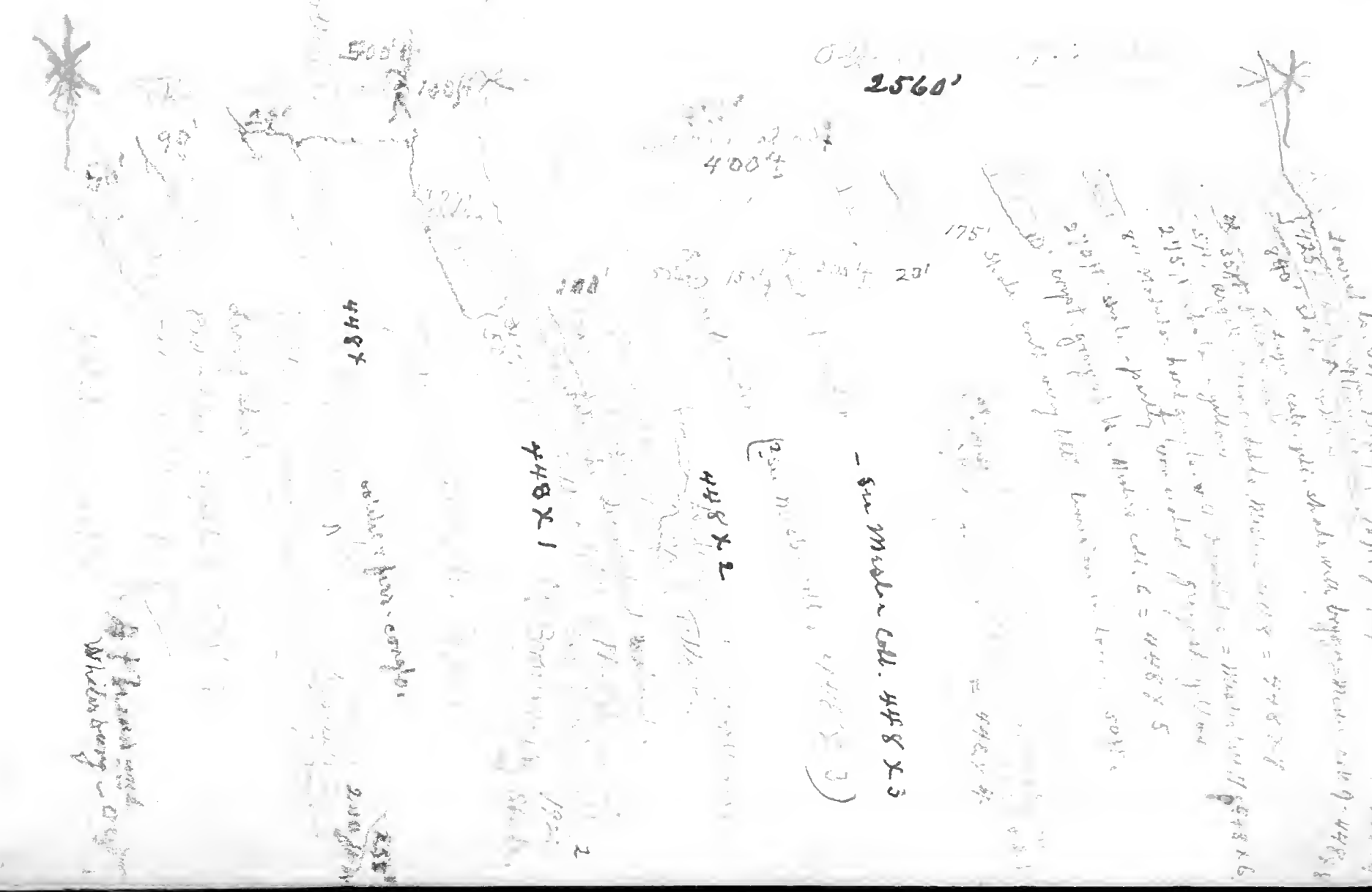
Point



East Tennessee - 1923

June 7, 1923. Lower part of the ... creek 7-8 m ...
Wall, ... Prof. ...
in 1921 - No. 32, p. 41.

Good section - should be used.
Dip 60° to 67°



940
555
675
2170
341
68

June 7, 1923 - Will C. N. ...
... ..



... ..

Suggests comparison with section
 at North Bluff 8 on west of
 London (see p. 41)

East Tennessee - 1923

Present structure of Marble Bluff area

Structure of Marble Bluff area

Upper Cambrian

Sp. 2479 - 2480
Sp. 2481 - 2482
Sp. 2483 - 2484
Sp. 2485 - 2486
Sp. 2487 - 2488
Sp. 2489 - 2490

2479 - 2480
2481 - 2482
2483 - 2484
2485 - 2486
2487 - 2488
2489 - 2490

Marble Bluff

300 feet = 454 c

60 ft. or more

Canadian

Dawson block

Canadian and lower dolomite in wide area

"Marble Bluff" 8 m. NW 41
of London, Tenn.
Sunday June 10, 1923, with Mesler

No. 3-153



The latter mainly in lower or middle
appears in the section as that Tellico rocks
on the western side of the section from south of (p. 94) to (p. 5) 1/2

The latter mainly in lower or middle
appears in the section as that Tellico rocks
on the western side of the section from south of (p. 94) to (p. 5) 1/2

2479 - 2480
2481 - 2482
2483 - 2484
2485 - 2486
2487 - 2488
2489 - 2490

Upper Cambrian

60 ft. or more

Canadian

Dawson block

Canadian and lower dolomite in wide area

"Marble Bluff" 8 m. NW 41
of London, Tenn.
Sunday June 10, 1923, with Mesler

No. 3-153



The latter mainly in lower or middle
appears in the section as that Tellico rocks
on the western side of the section from south of (p. 94) to (p. 5) 1/2

The latter mainly in lower or middle
appears in the section as that Tellico rocks
on the western side of the section from south of (p. 94) to (p. 5) 1/2

2479 - 2480
2481 - 2482
2483 - 2484
2485 - 2486
2487 - 2488
2489 - 2490

Upper Cambrian

60 ft. or more

Canadian

Dawson block

Canadian and lower dolomite in wide area

"Marble Bluff" 8 m. NW 41
of London, Tenn.
Sunday June 10, 1923, with Mesler

No. 3-153



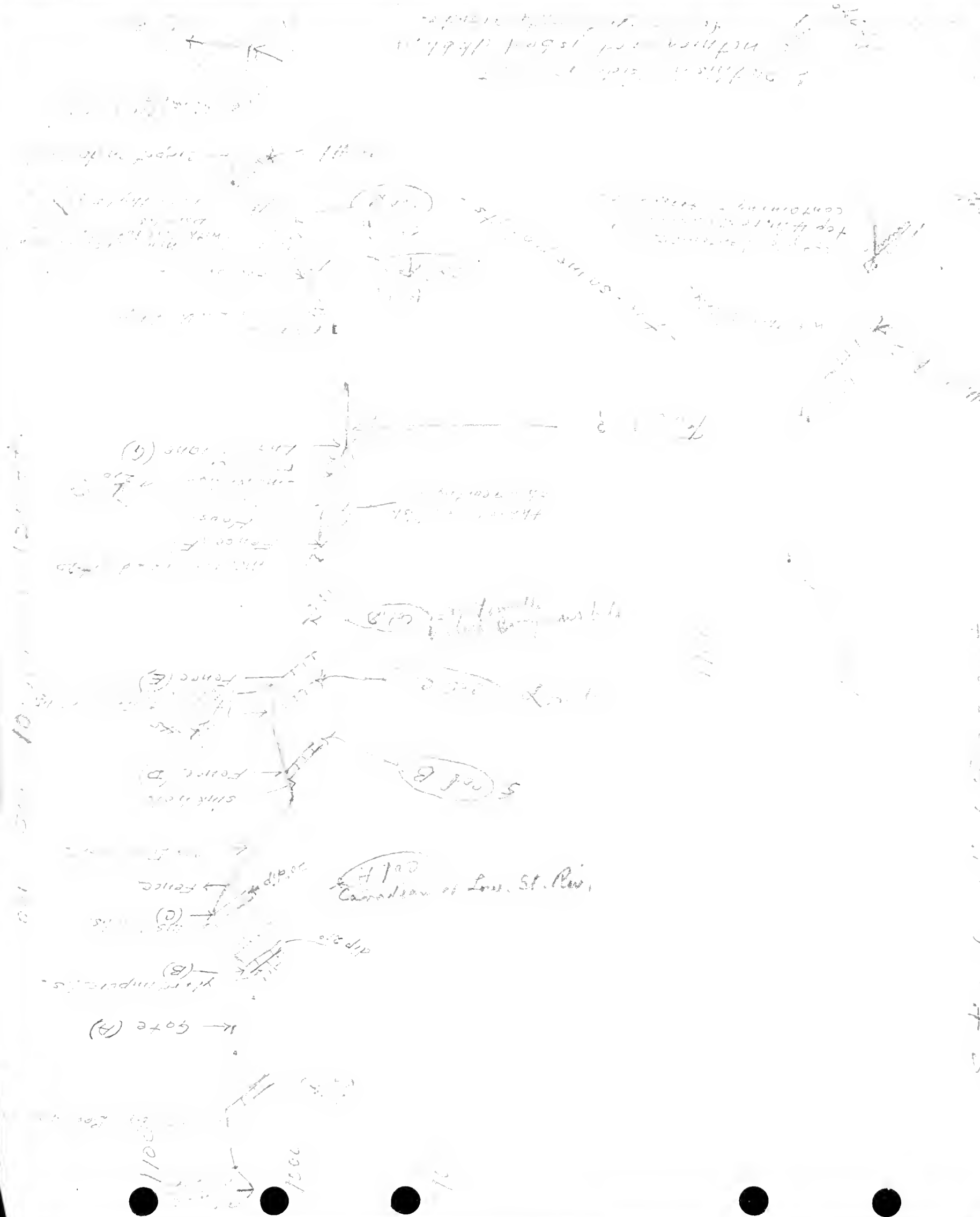
On this side of the road
 westward - 1500 ft. hills
 with some light granite
 on top of the hills
 containing fragments
 of fossils
 The same fossils
 are found in the
 top of the hills
 containing fragments
 of fossils
 The same fossils
 are found in the
 top of the hills
 containing fragments
 of fossils

LEFAX, PHILADELPHIA, PA.

ORIGINAL COPR. 1910 BY C. PARKER

For revised and more detailed sections in Logston area
 see pp. 53-58.

Logston area

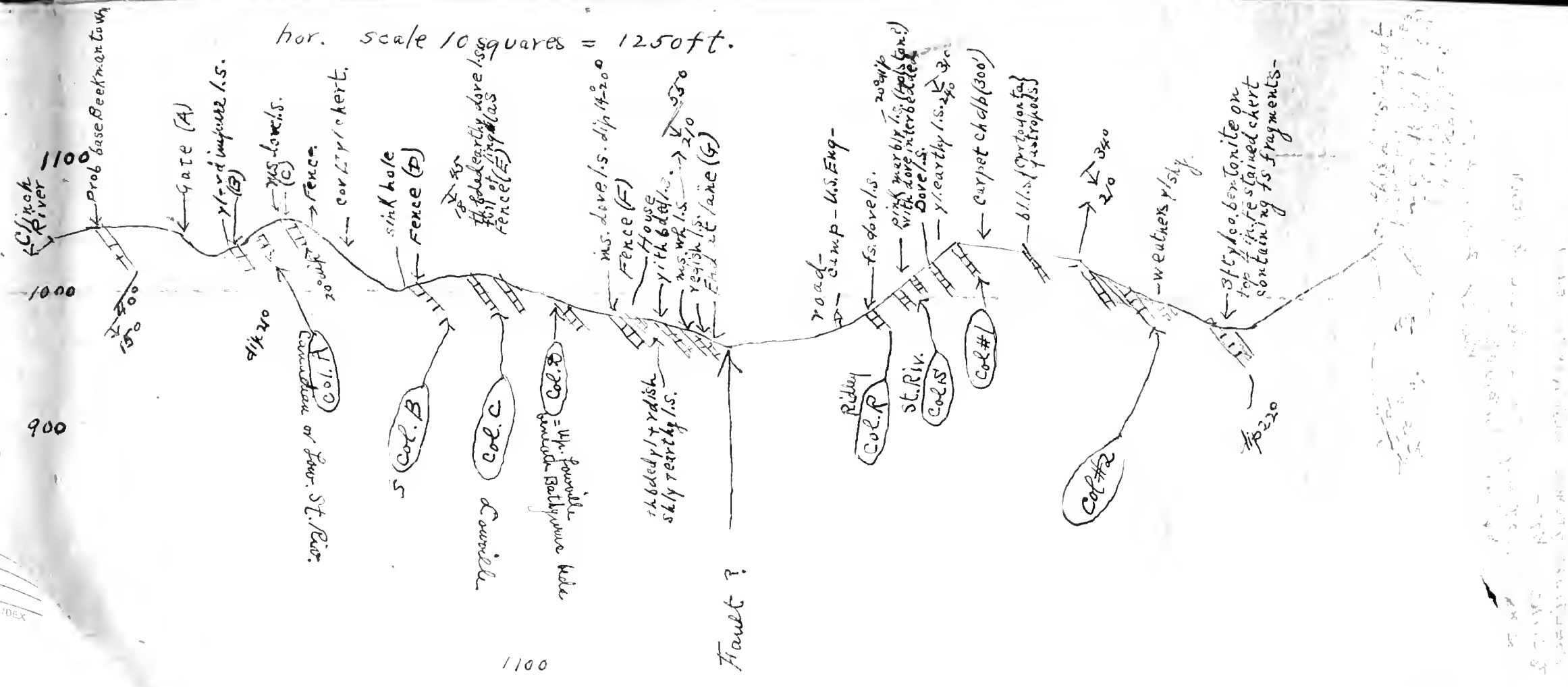


Section from Birch River - cut
 to C. L. 1174
 from top of ...
 below ...
 Place ...

Handwritten notes at the top of the page, including a north arrow pointing towards the top right. The notes are partially obscured by the diagram and other markings. Some legible text includes "Canadian of Low St. Riv." and "Point A".

Vertical handwritten note on the right edge of the page, possibly reading "Section from Birch River - cut".

hor. scale 10 squares = 1250 ft.

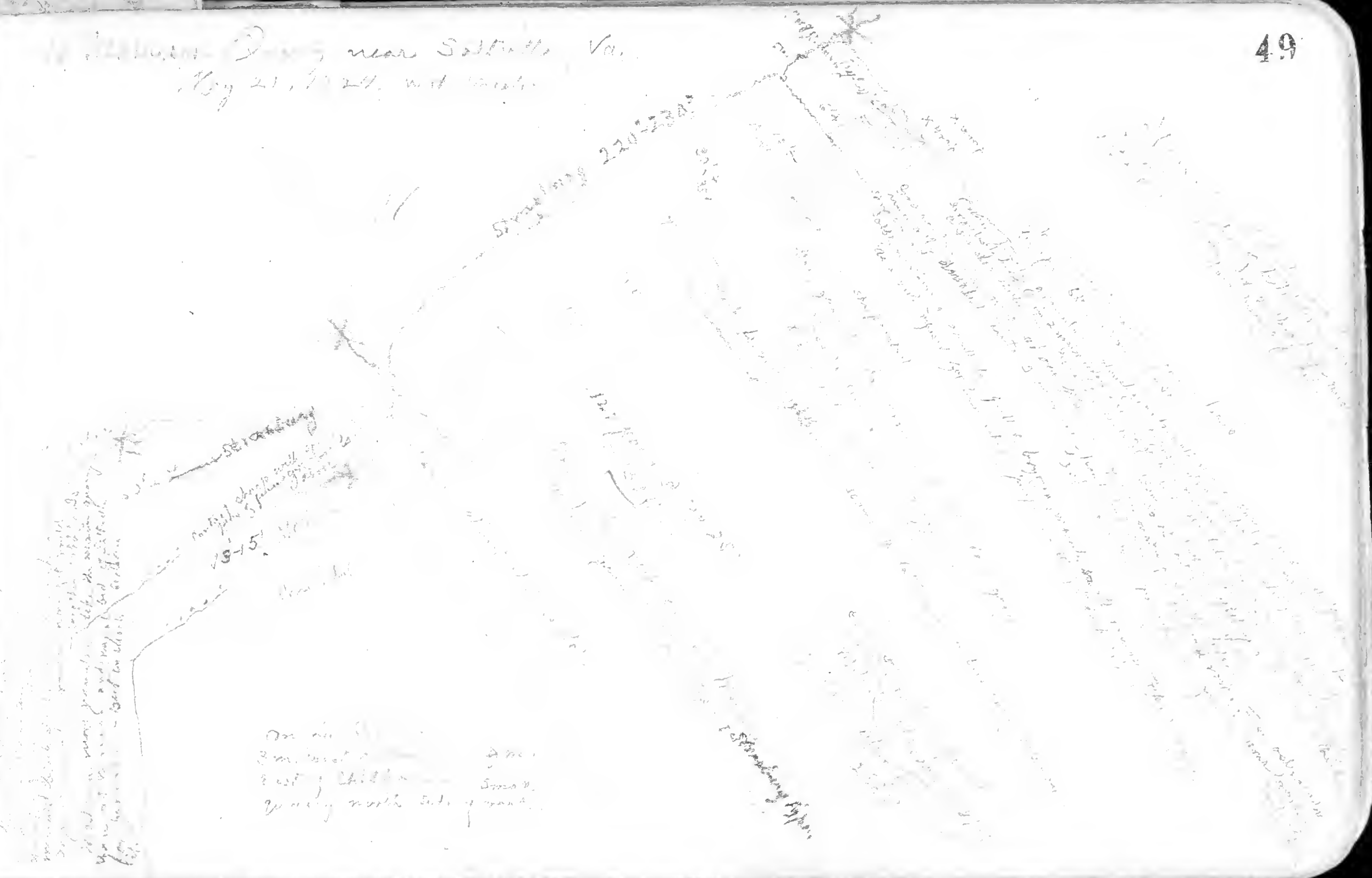


5 pure fine grain limestone, rough bedding surface + rough bed
 90+ magnesian limestone with much small chert
 + some large white chert.

? Folding

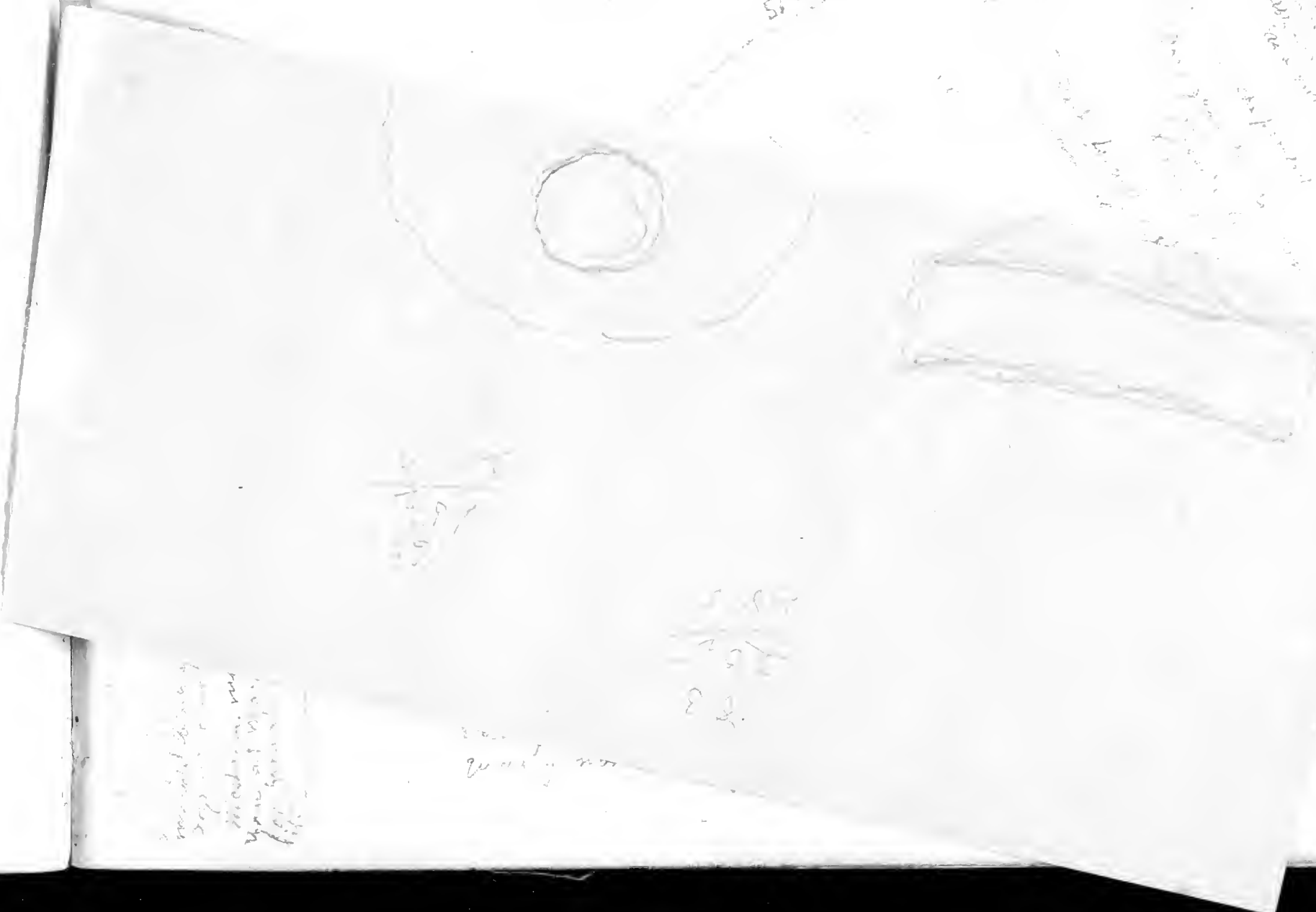
old quarry { 12' semi pure fine gr. limestone, some chert
 20' fine grain dove, laminated limestone
 (chert with flat East (Oplil) from above)
 5' light colored magn. ls
 20' fine gr. thinly lam pure ls
 13' pure fine grain dove limestone
 50' magn. + impure ls. Thick white chert at base
 70+ dolomite + magnesian limestone. massive white chert at base
 280+ massive dolomite

14. Millers Run near Slaters, Va.
 May 21, 1924. with [unclear]



On the [unclear]
 East of [unclear]
 Younger north side of [unclear]

Madison Spring near Salt Lake Va.
May 21, 1924, with ...



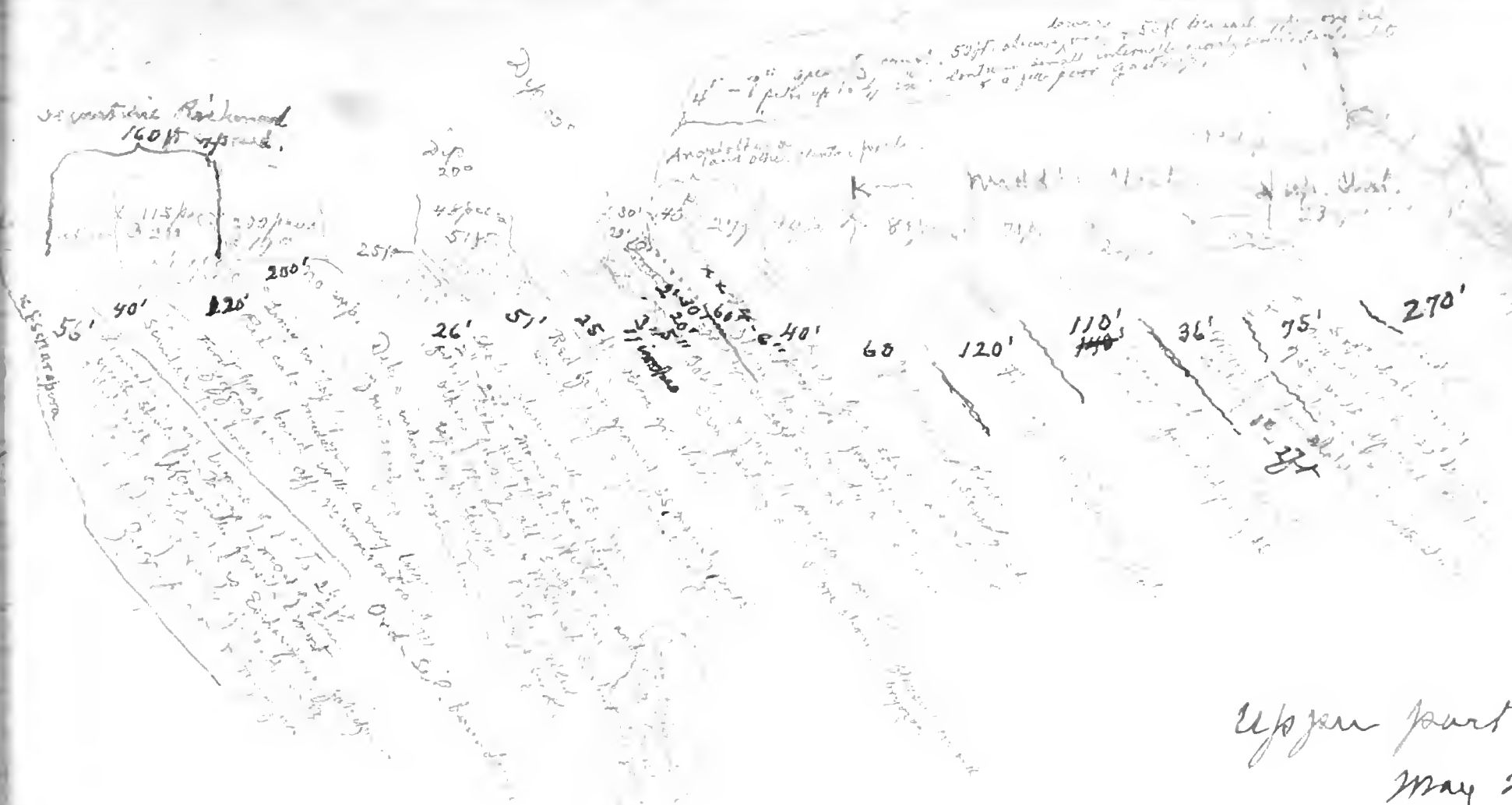
220-230

82

...
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...

...

[Faint handwritten notes and bleed-through from the reverse side of the page, including phrases like "The ...", "The ...", and "The ..."]



Clinton 921 ft.
 up. Madison 300 ft. +
 Sugarloaf 160 ft. +

See study from the ore in the Sugarloaf.

Upper part of Loyston section
 May 24, 1924
 see lower parts pp. 55 & 56.

Section Neatheson alkali quarry

1 1/2 miles south-southeast of Saltville

In Rich Valley.

By G.W. Stone

New quarry

- Dark gray shale, weathery light. Few graps.
- Irregular contact. Deep depressions
- 28 } coarse granular gray massive limest. Few fossils 27B
- 13 } Impure black banding, weathery shaly.
- Less pure granular gray limestone with some black argil. bands
- 10 } Dark limestone banded with dark slickensided argillaceous layers, weathery shaly
- 20 } Light-gray crystalline limestone with Bryoz. 27A
- Chief quarry rock.
- 12 } Similar granular crystalline limestone
- Surface covered with Ceph. 1' long, 1-2" wide, 1/2-3/4" between curved septas. Eyp. 3/4" diam. One coiled, 3-4" diam
- 135+ } Less pure fine grained limest
- 70+ } Mostly impure limestone, some granular at top with Cephal, etc. 27C
- Top of Buck?
- 185+ } Magnesian fine grained limest, weathery buff

— Thick bed white chert

135+ Similar Magnesian limestone

Thick white chert.

- 8 } Impure limestone & fine magnesian limest (Fos - 27)
- 20 } Fine even grain dove limestone. Upper beds fossiliferous & contain fine conglom. Few impure beds
- 4 } Fine grain dolomite with thin chert
- 11 } Fine grain dove limest, hackly fracture
- 31 } Very massive pure dark even grain limest. Few beds of solite conglom in lower part

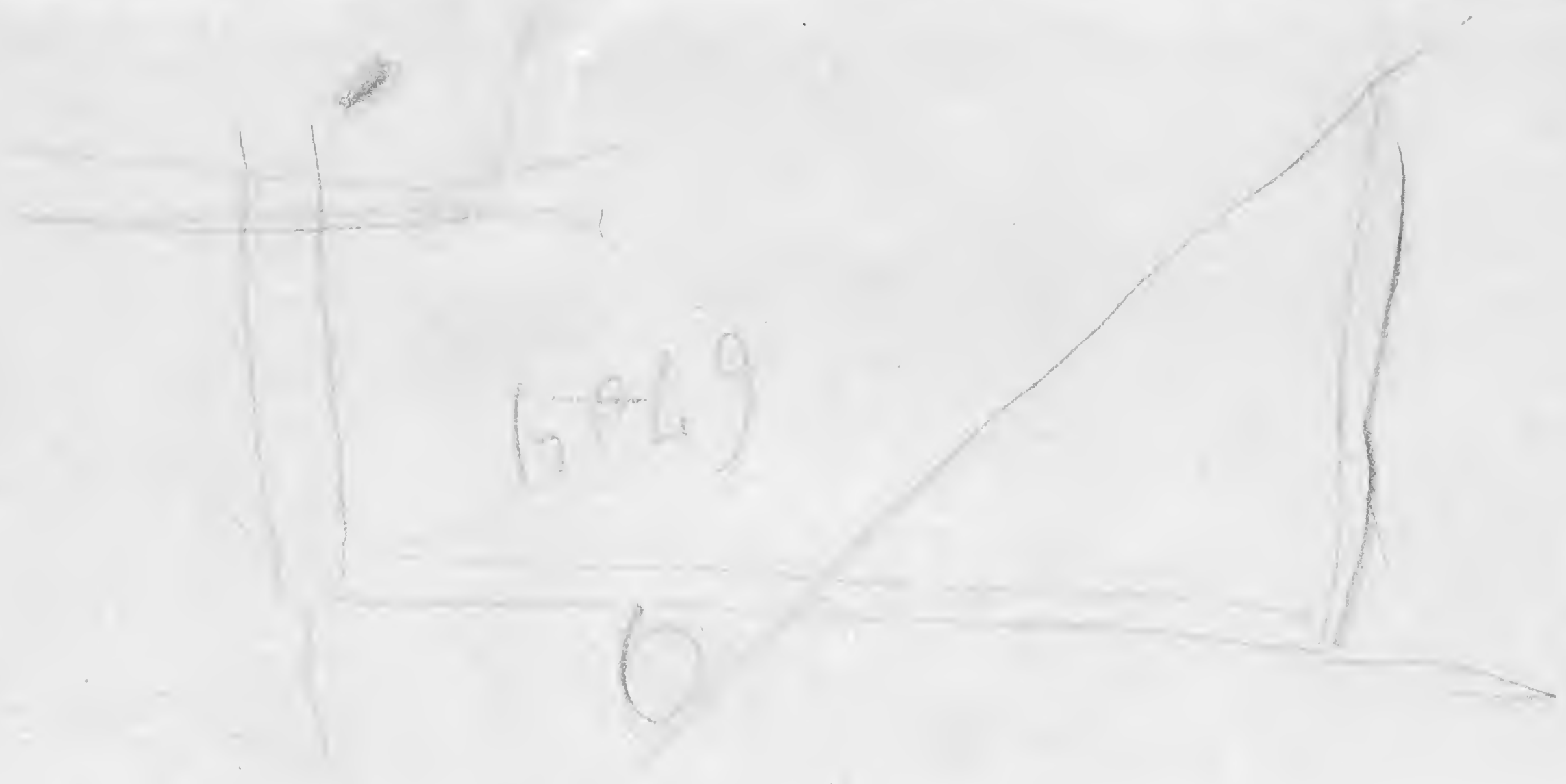
ed quarry

Orthoceras in top layer.

210 days



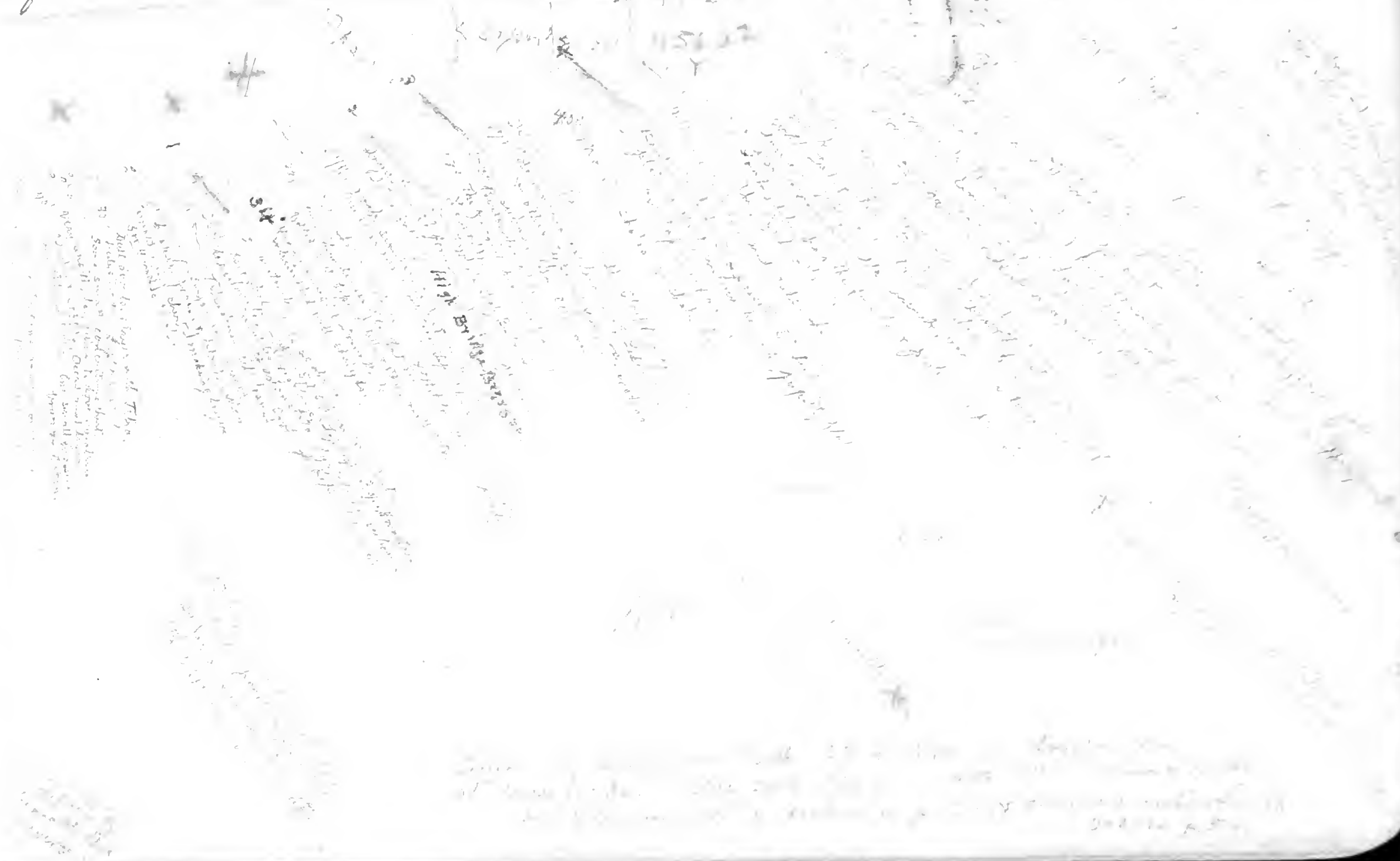
Stages sections
old & new quarries



Loyston-Tenue section.

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Lowerville

1156.27



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730ft Stone Pass

27 20

Unambiguity 115

Continued page

115ft. 1
 120ft. 2
 130ft. 3
 140ft. 4
 150ft. 5
 160ft. 6
 170ft. 7
 180ft. 8
 190ft. 9
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 790ft. 69
 800ft. 70
 810ft. 71
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 830ft. 73
 840ft. 74
 850ft. 75
 860ft. 76
 870ft. 77
 880ft. 78
 890ft. 79
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 910ft. 81
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 960ft. 86
 970ft. 87
 980ft. 88
 990ft. 89
 1000ft. 90

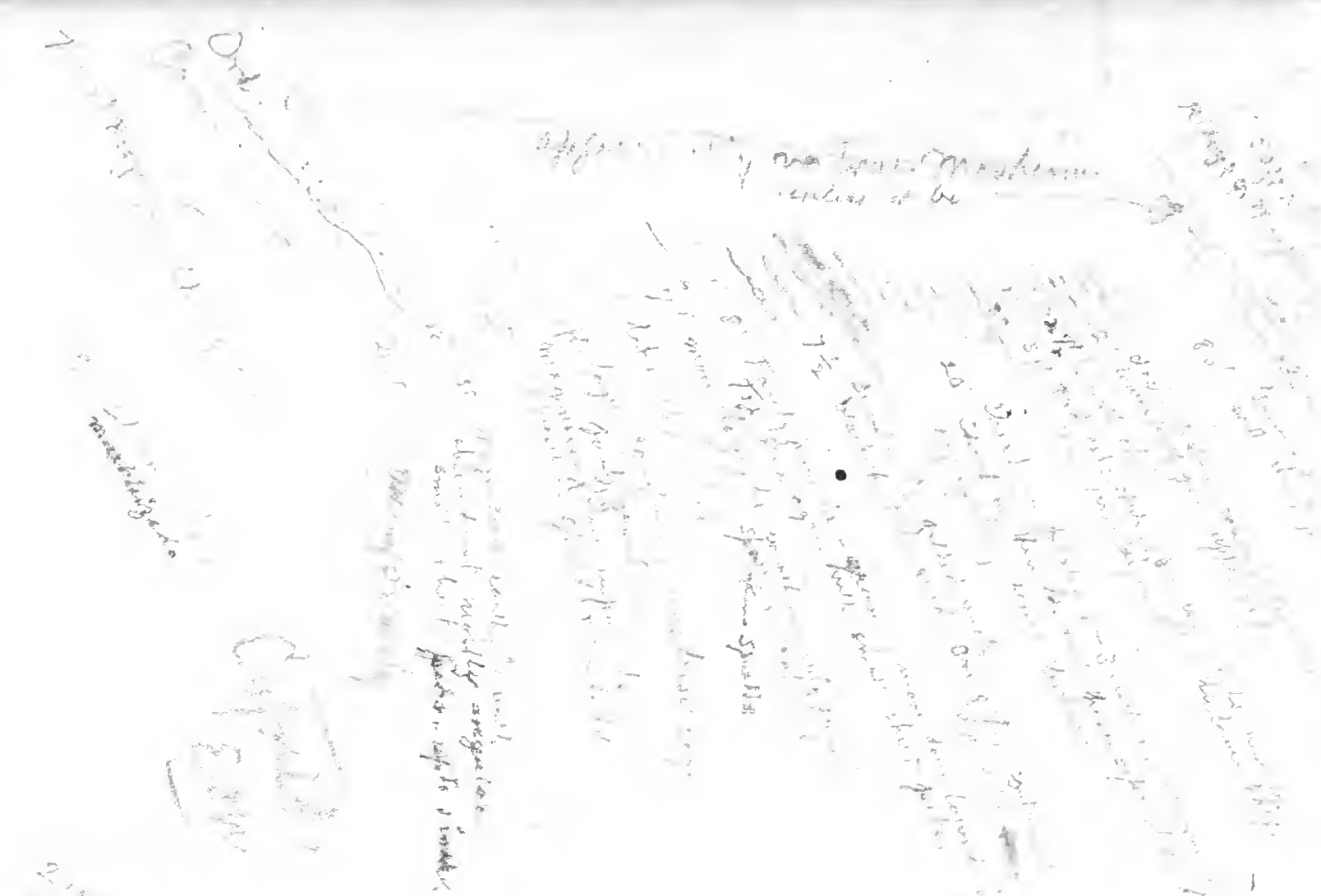
2 miles N of ...
 1 mile N of ...
 1/2 mile N of ...
 1/4 mile N of ...
 1/8 mile N of ...

copy

Probably all new members and no true members at all.

255
 100
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Section on Longston pike, east foot of Flint
 Ridge, 100 yds west of R. S. Stanley's house.
 Morgantown quad.
 May 25, 1924
 (Sunday)



Section of part of Upper Cambrian
 road 1 mi. west of Little Summit, near
 where in my notebook - 1924, May 20, 1924
 2405

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Lower part of the T. ...

Ottawa, Quebec
Albion & ...

Speers Ferry formation, base of - unexposed.

Holston marble, a small amount of chert in upper 1 foot, the remainder more or less massive grayish crystalline ^{fossiliferous} limestone. 63 ft.

Strasburg limestone, with cherty beds and at intervals more or less shaly beds most

of which are fossiliferous. - - - - - 285-348

Lenoir

Moshannon limestone - - - - - 30' - 100'

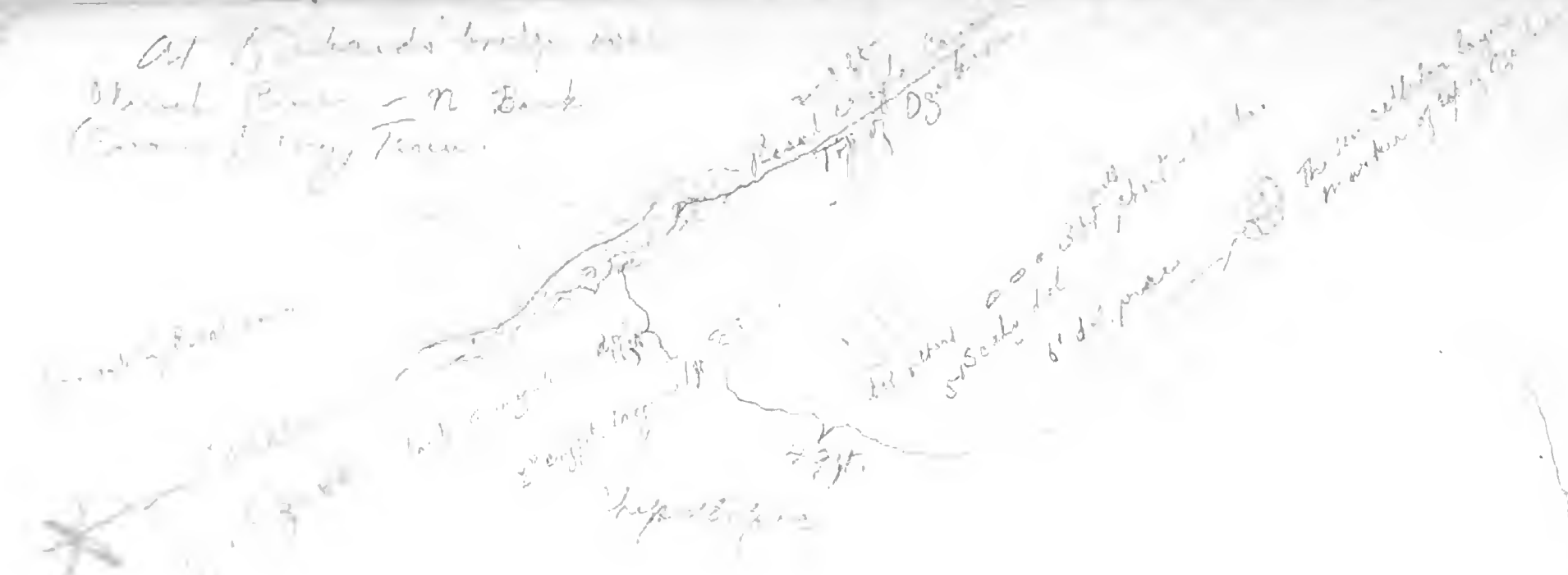
(The lesser thickness occurs at the culvert on the main road the greater one half mile on old road going ^{north eastward to} top of hill.)

Primefreesboro
in Big Lake River, Canada

Canadian

N

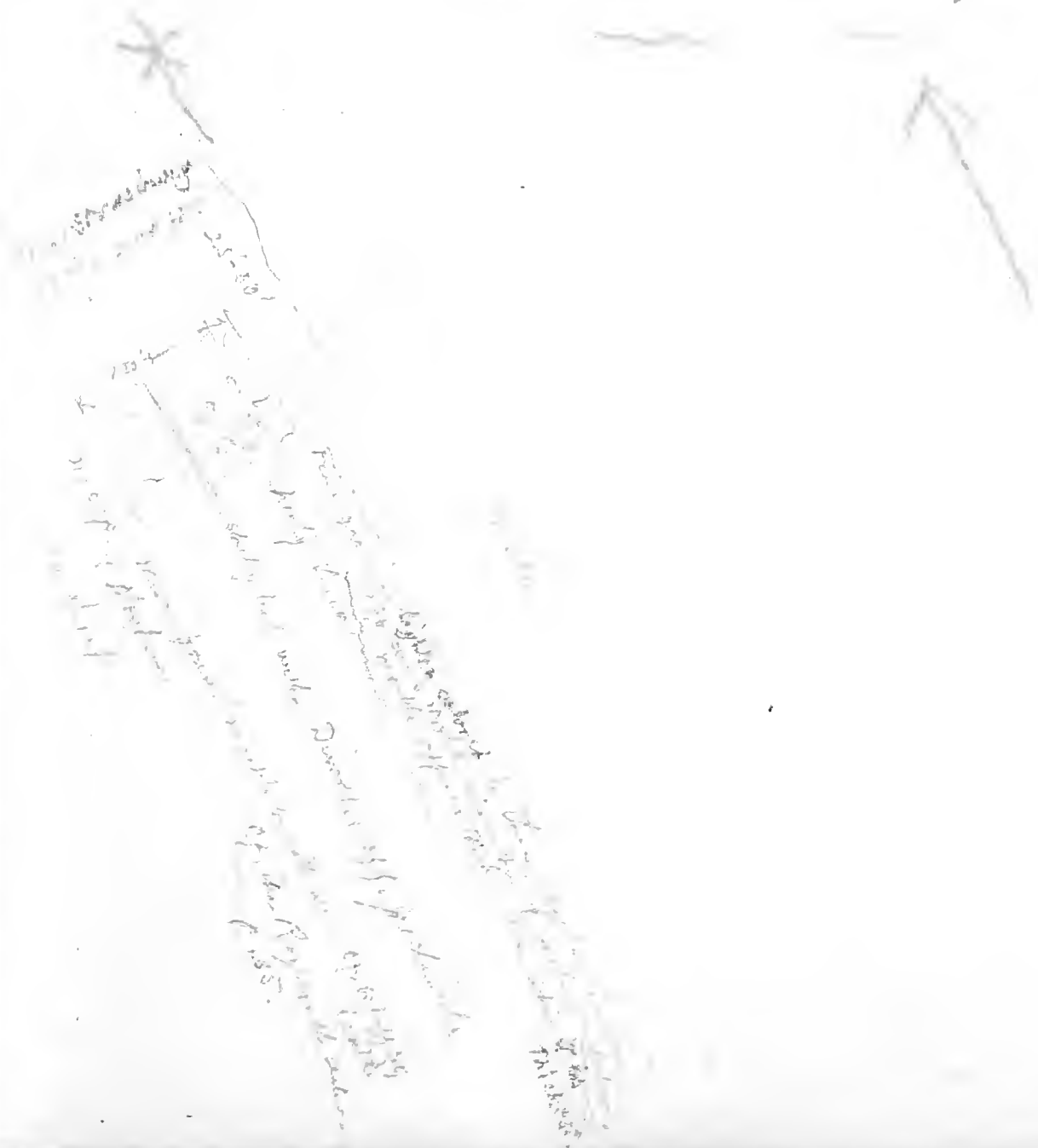
At Richards bridge with
Black River - N Bank
Canyon & Valley Town



side of road
500 yds
1 inch = 1000 ft

Elderson Trans. section with the top of the ridge - 1000 ft high

Carbon valley is complete from Meador - 1000 ft

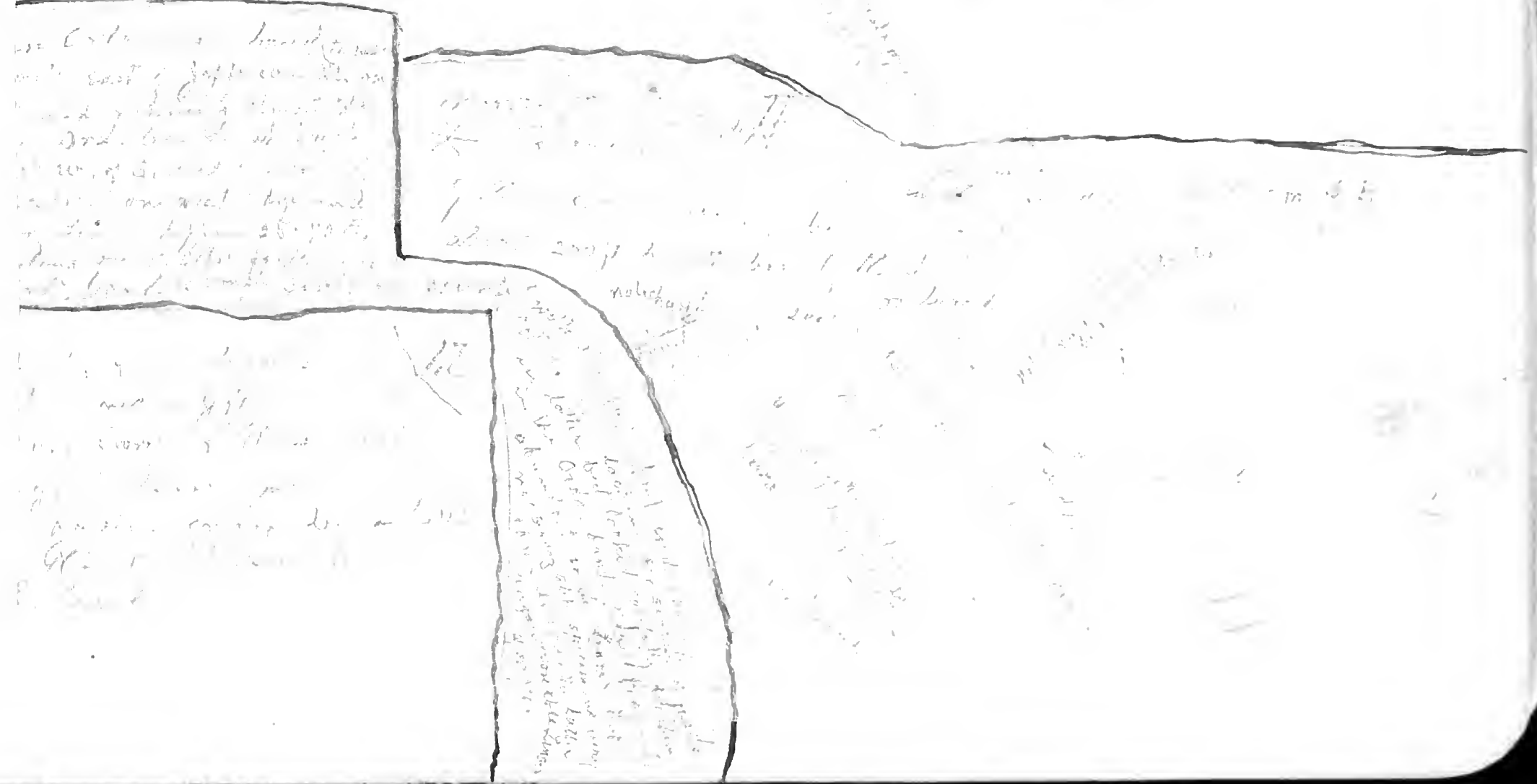


Handwritten notes on a vertical strip of paper, possibly a label or index, with some illegible text.

2nd Mill of Bull Lake & Home New York General Assembly

Cambridge

I

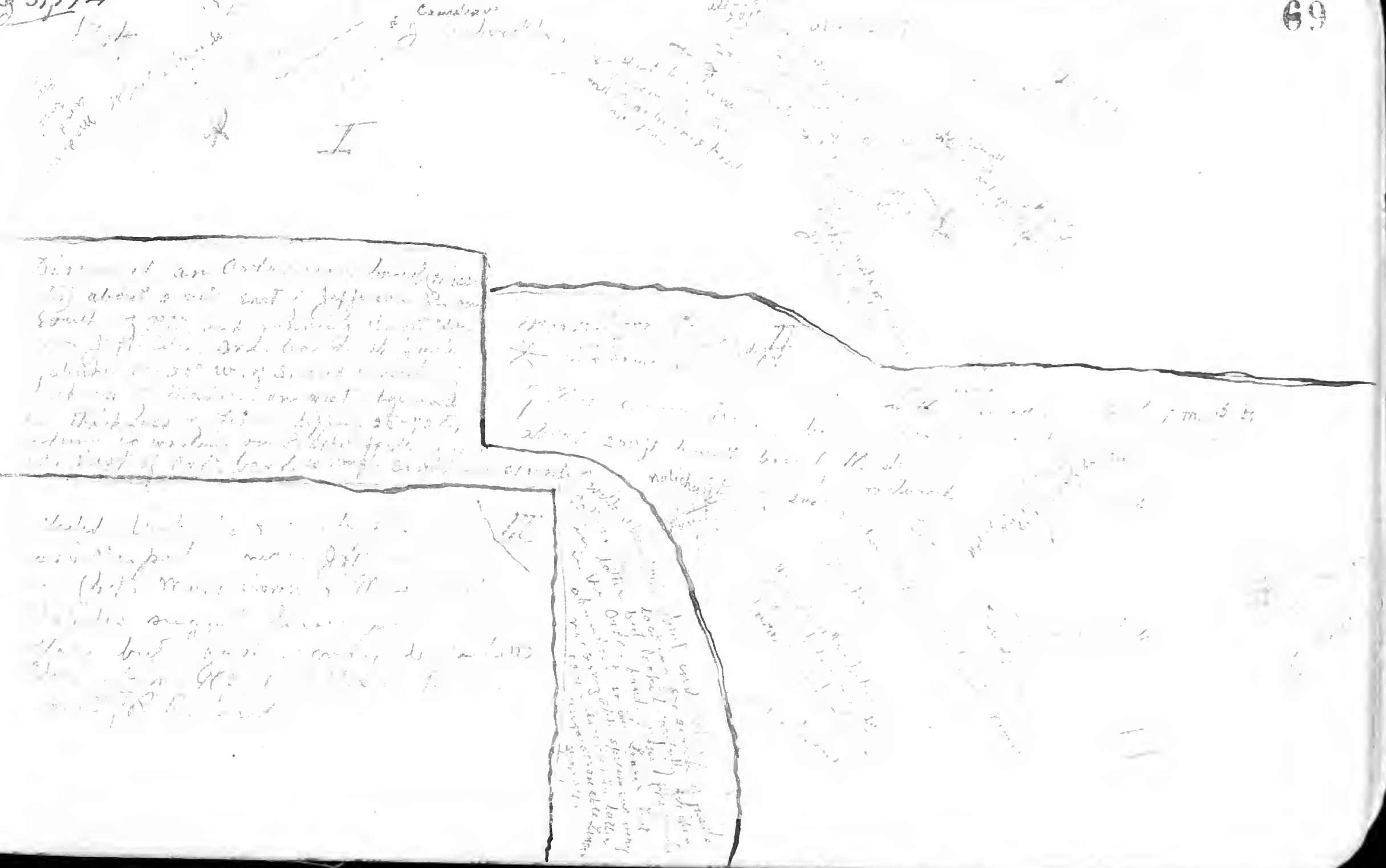


Handwritten notes in a rectangular box on the left side of the diagram, containing several lines of text.

Vertical handwritten notes on the right side of the diagram, possibly describing specific features or measurements.

May 31, 1924

(2 m. west of B... ..)



Section of an Ordovician limestone
 lying about 2 mi. west of Jefferson, Pa. and
 about 3 mi. west of... ..

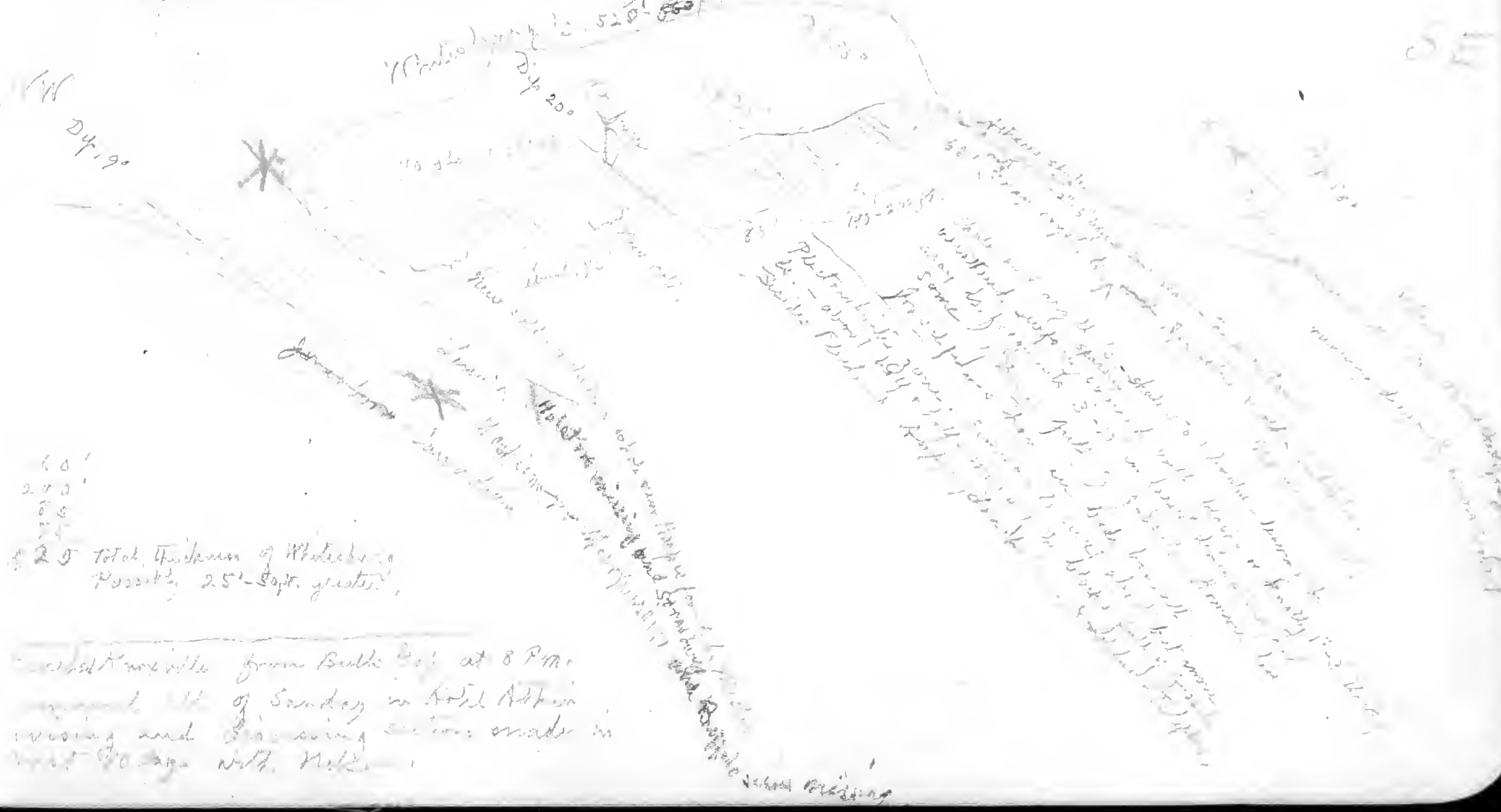
... ..

... ..

... ..

May 31, 1924

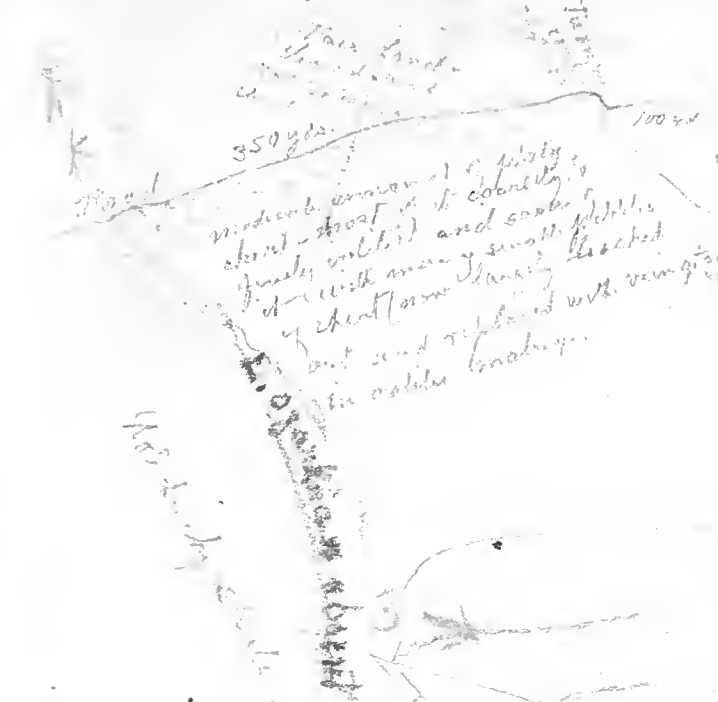
New sections of the typical exposure of the Whiteburg limestone beginning 1 3/4 mi. SW of Bulls Gap, Tenn. - and showing a fine carboniferous mainly vacuum cast and striae (from top of Carboniferous) on south side of road to base of overlying strata. Shale and collect several feet down to the shallow gully.



60'
 200'
 85'
 75'
 25' Total thickness of Whiteburg
 Possibly 25' - 30' greater

Reached Knoxville from Bulls Gap at 8 PM.
 remained all of Sunday in Hotel Arthur
 visiting and discussing sections made in
 West 80 days with Nelson.

Copper Ridge



Canadian
 Cambrian
 350 ft.
 100 ft.
 25 ft.

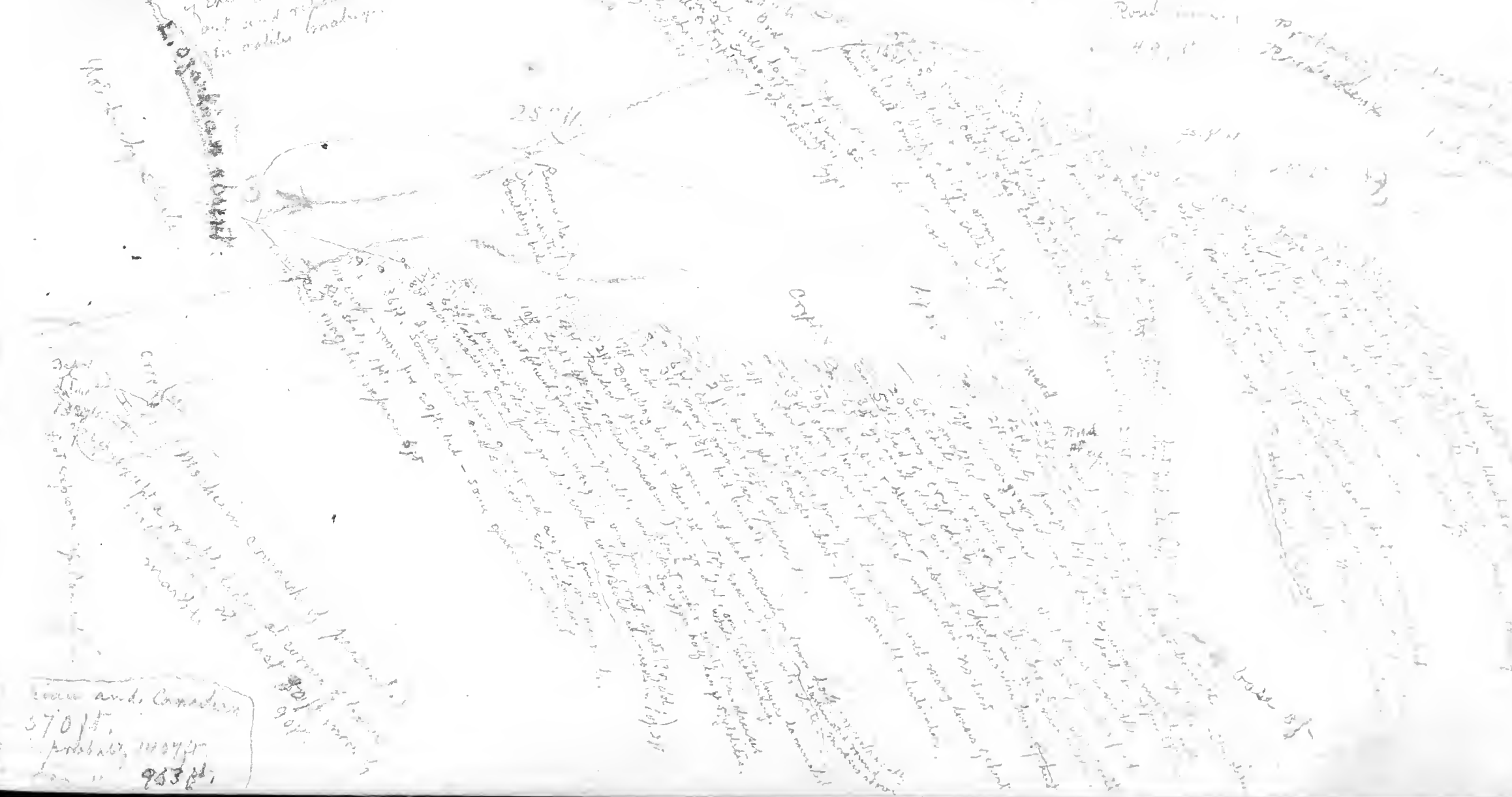
some and Canadian
 370 ft.
 probably 100 ft.
 953 ft.

Cambrian, Ogishian, Canadian & basal Drift

Section to NW on Copper Ridge from

Proctor Spring, Tenn. to ...

March 3, 1904



1033 ft.
 70 ft.
 25 ft.

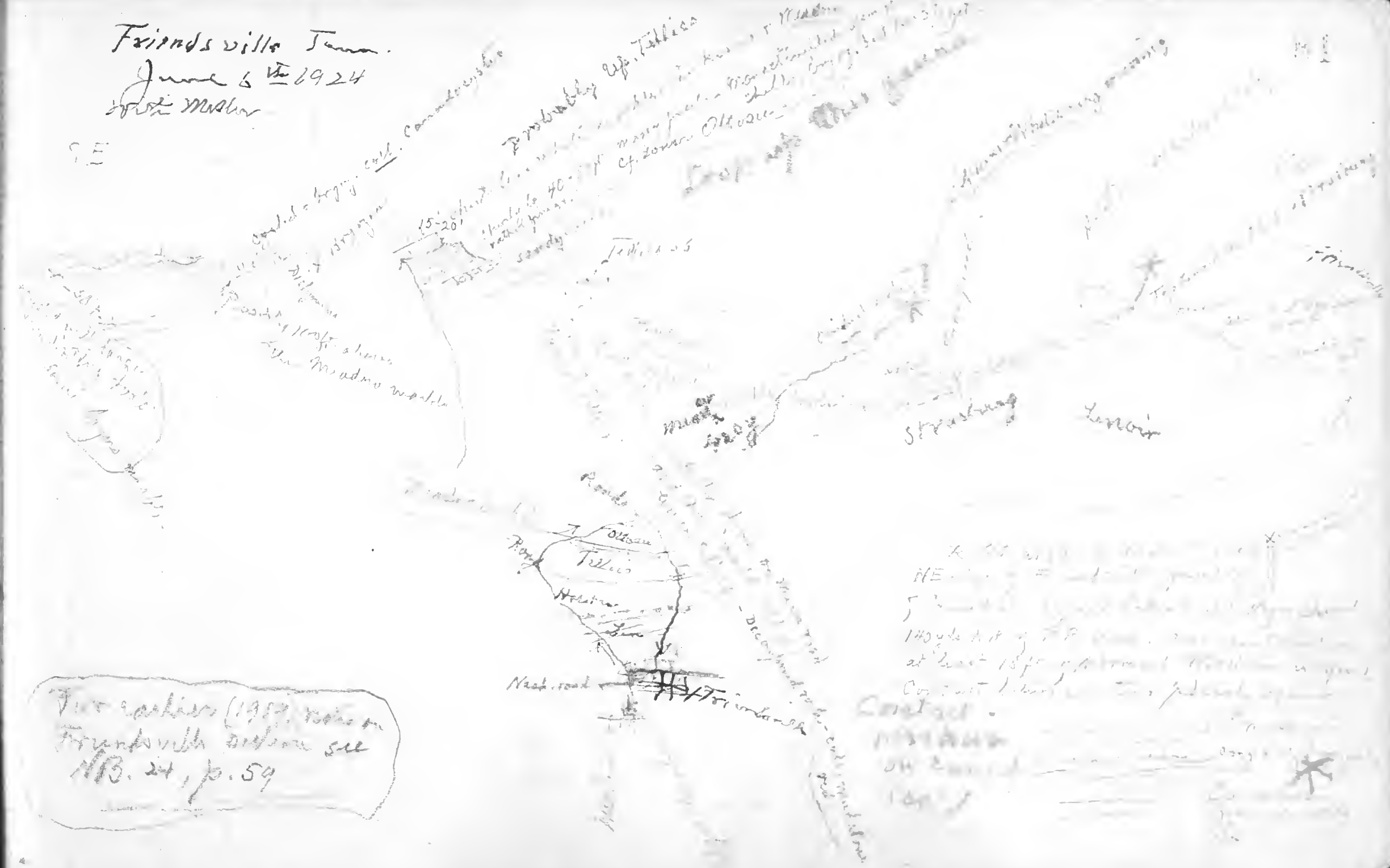
Canadian
 Ogishian
 Cambrian

370 ft.
 100 ft.
 25 ft.

some and Canadian
 370 ft.
 probably 100 ft.
 953 ft.

Friendsville Tenn.
June 6th 1924
with Maden

SE

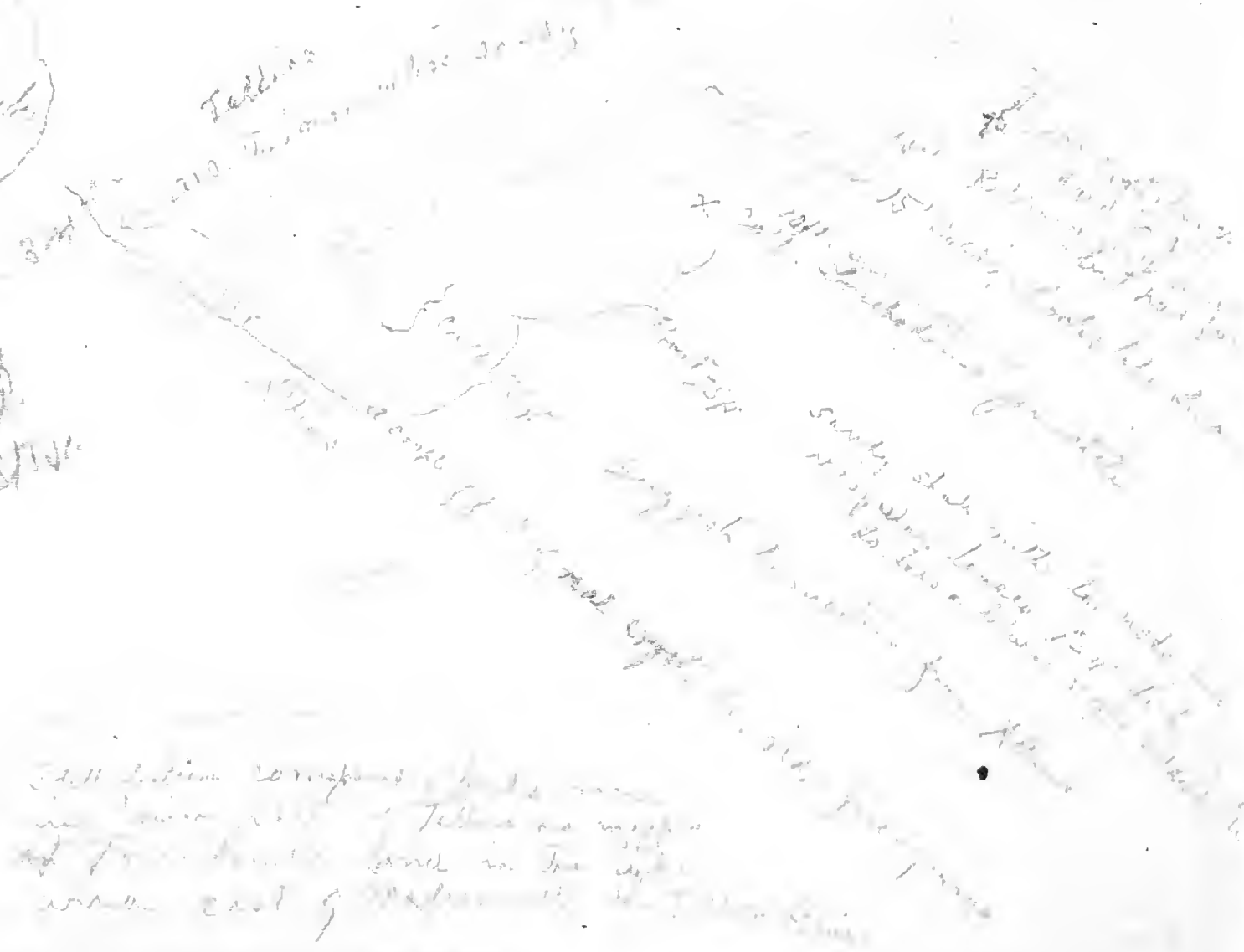


Charleston Town

East of
with Rock 1/2

Similar to those on
Mendocino Coast of California (Bridges)
3 mi. N. of 3rd bridge
4000 feet out of the Tullahoma
P.B. 20, p. 3.

More detailed sketch of the
Mendocino Coast (California) at
Calhoun, 1918, with description
of the Mendocino Coast
P.B. 20, p. 3.

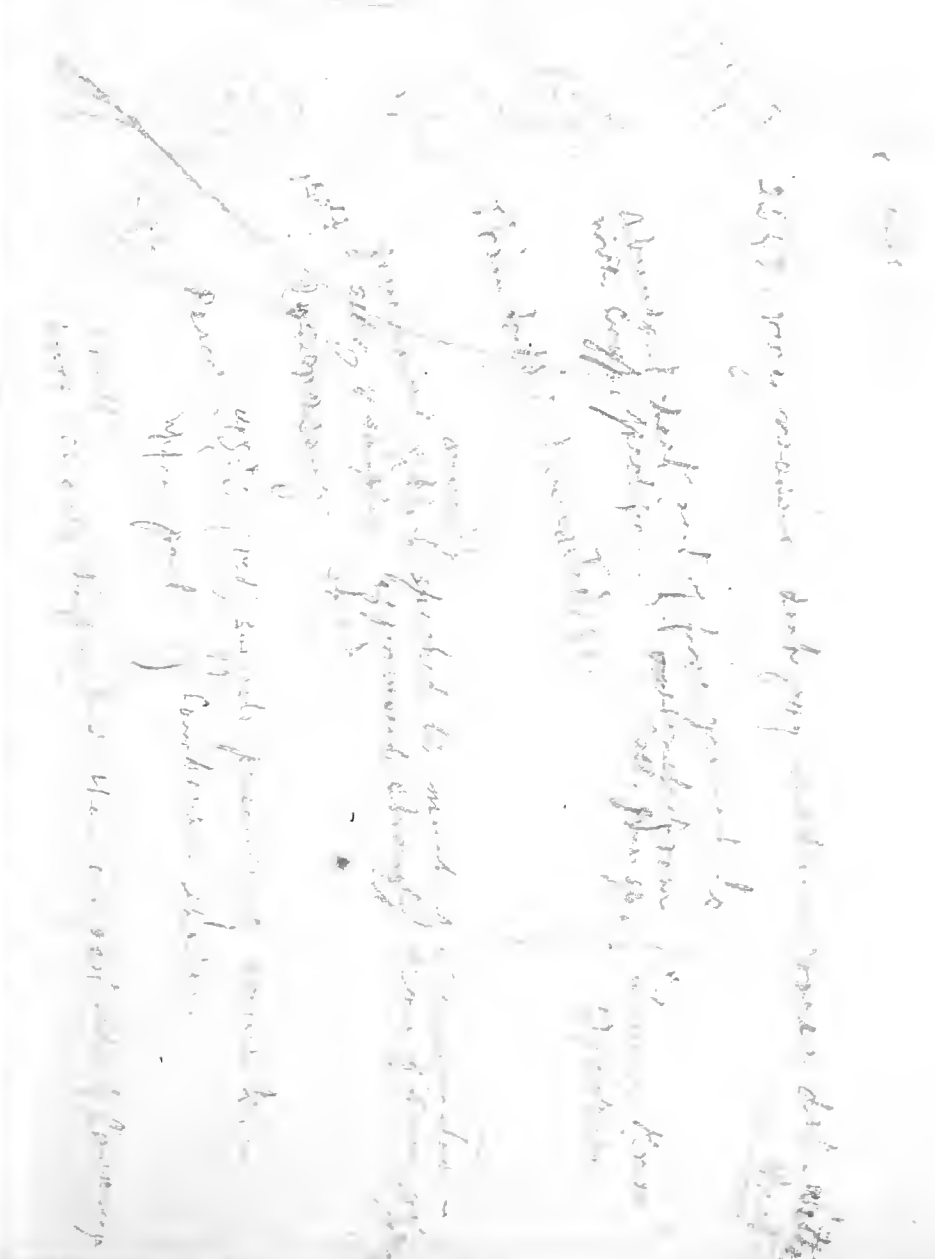


Full section complete
at Tullahoma, Tenn. in the
area east of Tullahoma, Tenn.

Basal part of Ozarkian in the
2 1/2 mi. east of Madisonville, Tenn.
with fossils

Basal Ozarkian fauna
Perrinites in general appearance
Fossiliferous limestone

Room for about 100 ft



an drawing NW from Madrasville to Sweetwater and then to Minny's farm NE of Sweetwater.

Identified Athens 3 mi. NE of Madrasville on NW edge of valley before reaching Tullahoma range of hills. Next again identified mine with that of farm the lower Otter in the system between the two ranges of Tullahoma hills. This mine is west of Otter Bend. Set across down road toward Dancing Creek from the point 3 miles NE of what Keith's map (London, Md.) terminates the Otter. In general the results of previous years work with faults in this faulted area were sustained.

After lunch in Sweetwater and delay by bad rain proceeded to the Bill Mince farm 'now owned by other parties'. Here looked particularly at the lower shales of the Otter and their relation to the underlying marl that supports the massive layers of the Sweetwater region and which is typical of the Tullahoma. The Otter shale was laid on a low eroded narrow surface though it also appears that a large part of the surface of the underlying surface has been eroded. The more recent underlying solution of the limestone and consequently the shale into the solution channel is

apparent in general collection was made Jan. 2013
 zone of hills. Layer is the soft yellow shale which
 underlies the Otter ⁵¹⁰ ft. of the Otter above the
 explanation of the lower Otter. The most interesting
 feature was again observed. The most interesting
 feature in the shale is soft chert (see p. 111) which
 is a thin bedded layer, remaining in the general
 character of the ⁵¹⁰ ft. of ⁵¹⁰ ft.

After Supp took Mince's station on road to
 Black Rock, Tenn. a trace of the ⁵¹⁰ ft.

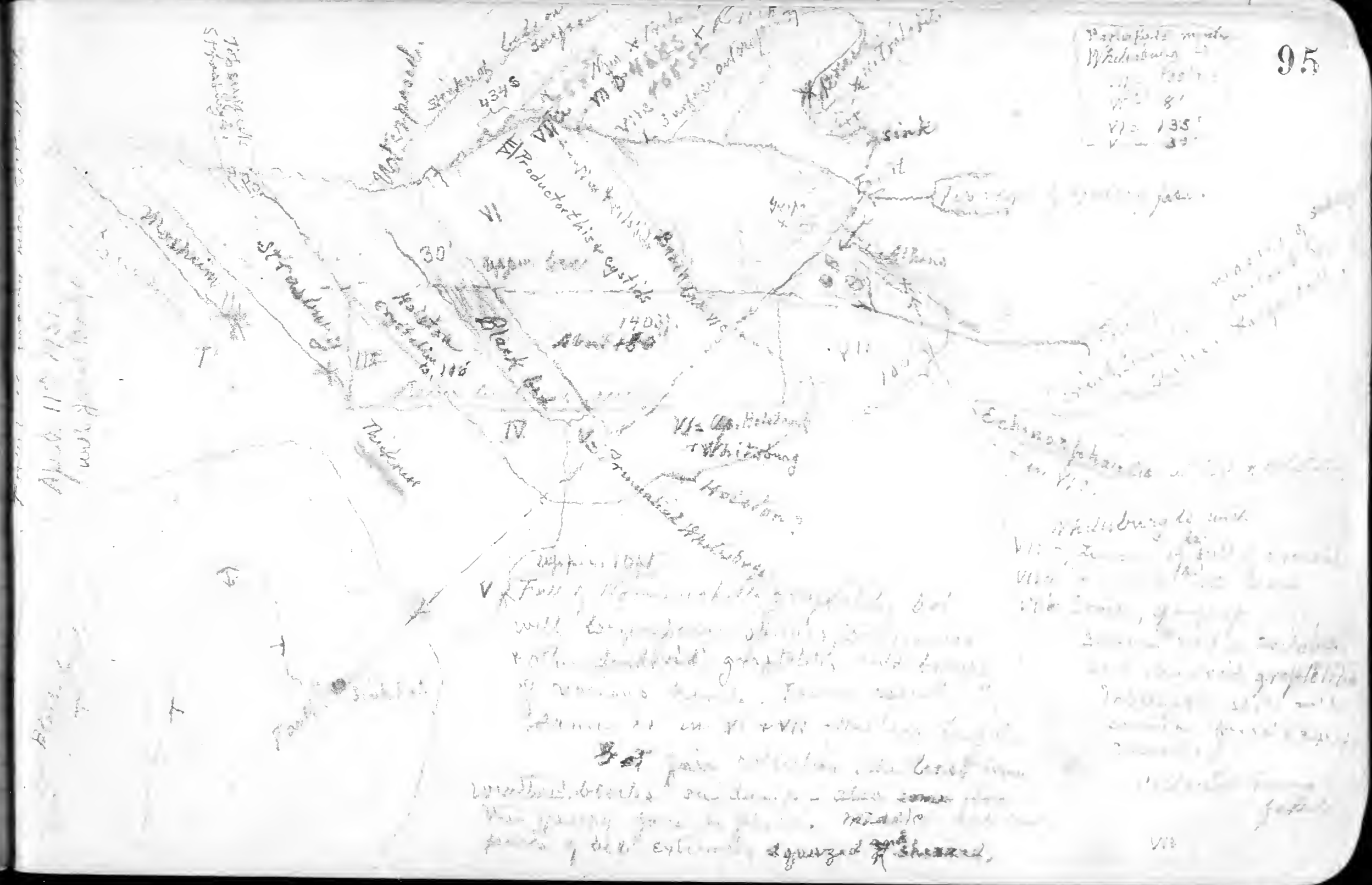
Departed 11 AM. via. Museum of Natural History
west of Gal. July 10. W.H. Bull to E. Fairport.



Collected out of the chert pits in the but did not see A. the number of my
Linnæus.

Successive strata very fossiliferous layers

27
#



Marble specimens that may be wanted in 1928

Approximate thickness of rocks in
500 and 100 ft horizontal at
dips 0° - 70°

At 70° dips 500 ft. = 470 ft. 100 ft. = 94 ft.	
dips	horizontal at
" 65 ---	" -- 452 --- 90
" 60 ---	" -- 432 --- 86
" 55 ---	" -- 410 --- 82
" 50 ---	" -- 384 --- 77
" 45 ---	" -- 354 --- 71
" 40 ---	" -- 320 --- 64
" 35 ---	" -- 286 --- 57
" 30 ---	" -- 250 --- 50
" 25 ---	" -- 212 --- 42
" 20 ---	" -- 172 --- 34
" 15 ---	" -- 130 --- 26
" 10 ---	" -- 86 --- 17



Faint handwritten notes, possibly 'The' and '100 ft'.



