

1922

Clinton of Pa. & Md. 1-7
Ord. of Va. & Tenn. 8-19

33
Stratigraphy

1923

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Porterfield
w. of Rogersville, p. 65

Va. & Tenn.
p. 43-87

9-904

1930

Va.
p. 89-93

GEOLOGICAL SURVEY
TRAVERSE BOOK

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

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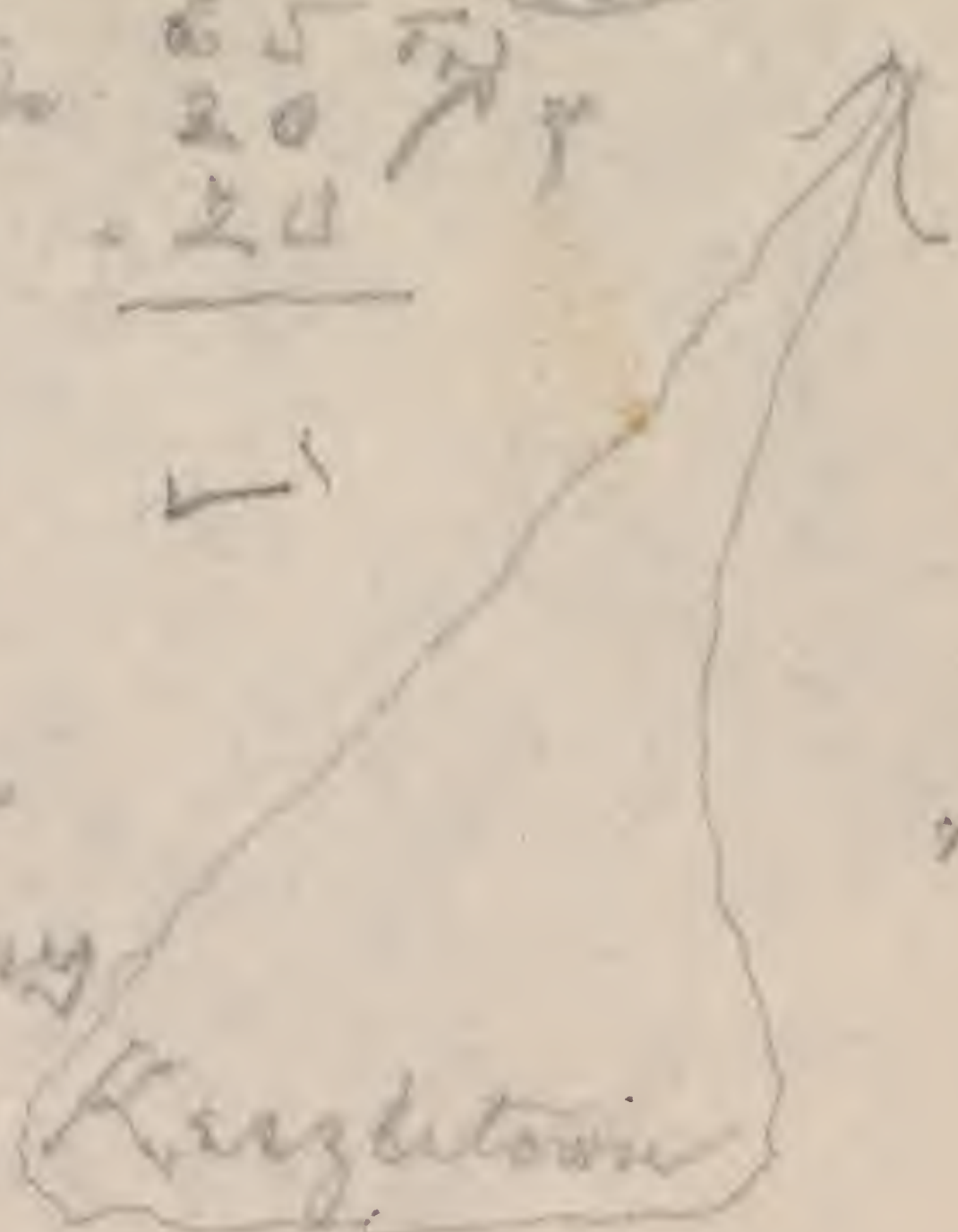
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Bed D No exposure to top of zone 50 ft
 20'
 20'
 Top of Bed C graft, fine 35
 25
 65 ft
 20
 + graft, 20

Bed A

on
 48
 20
 4 400
 19 32
 91 ft 378
 20-15 fossils

10
 Holston
 Athens
 Whitcomb
 Tuller
 Oleson



side road to top of Hill
 100'
 150' full of fossils

48' along main road
 20
 9
 19 90'
 15 - 100 fossils
 13 24
 9
 27 45
 30
 35 - 700
 30
 5
 10
 20 55 225
 210
 285' or 495 ft → 210 to fault, 495
 30' moraine to 100'
 Canadian dolomite

117
 495
 210
 285

75	50	14	670
2	10	3	
30	10	13	
40	50	2	
30	250		
40			
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Nidulites

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Millerstown

Probably Keefer collected 3
 Mincy, Bill

* Moccasin farm, 3-4 mi. NE Sweetwater, Ottosee and Iron ore 87

mapped as Bays, Knoxville, Tenn. 35
 regular at south end Newport, Va. sec. at
 Sinking Creek 13

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" " Lewisstown, Pa.	5
" " Strasburg, Va.	9
" Ulrich, NW slope Catawba Mt. and Valley sec. 10-B with Ulrich, and Holden, Blacksburg, Va.	11
" " "at Sinking Creek, 1½ mi. NE of Newport, Va., 10 10 mi. NW of Blacks- burg, Va.	13
with Ulrich, Whitesburg, Tenn.	15
with Ulrich, sec. in south edge of Loudon, Tenn.	19
with Ulrich, sec. Cherry Grove, Va.	25. .

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115' not well exposed, Loyston Cross Roads, Tenn.	56
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1s. typical, 1 1/2 mi. SW of Lone Mt., Tenn.	60
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Washburn, Thorn Hill sec. compare with Marble Hill Belt SE from Powder Spring, Tenn. depot	74

*Longhorn Creek north of Loyston, Tenn. - p. 53-58
 178 beds shale above. Clinton -
 very important.
 very probably contains one or two*

Marble	
quarry 1/2 mi. up hollow, RR spur, Friendsville, Tenn.	79
at least 50', Madisonville-Povo Road	83
vestal? region of Meadow, Tenn.	39
dark red, provisionally referred to basal Telllico, Maloneyville, Tenn.	76-77
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in pre-Lenoir, 1 mi. north of Bluff City	66
Bluff. 8mi. west of Loudon, Tenn. suggests comparison with. 5-6 mi. due So. of Knoxville	37
Marcem quarry	
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Martinsburg	
Trenton, under Chambersburg ls., at Murrat, Va., ,	27
shale, Strasburg, Va.	9
shale, Cherry Grove, Va.	25
shale 4 1/2 mi. due west of Rogersville, Tenn.	65
Matheson	
Alkali quarry sec. 1 1/2 mi. S SE of Saltville in Rich Valley	48

YEARNS TWICIGOTOEG
 DEPARTERIINI EHL FO INENWIRVPEED
 SALTATS DELININ

Lenoir continued

Chilhowee Park Ridge, west end of sec. NE	Page
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Knoxville, Tenn.	35
5-6 Mi. due south of Knoxville, Tenn.	37
and Holston lacking, Marble Bluff, 8 mi. SW of Loudon, Tenn.	41
Walker Mts. in NW 1/9 of Wytheville, Va. quad.	47
? or Mosheim, Rich Valley, 1 1/2 mi. S SE of Saltville, Va. in sec. Matheson Alkali Quarry	48
typical, 7' argillaceous seams with overlying Whitesburg, 219'; in Stose sec. given as 288'	49
Liberty Hall.	25
1s. at Cherry Grove, Va.	9
1s. Strasburg, Va.	27
on SE. Murat, Va. sec.	11
Lister's gate 3-4 mi. E SE of Blacksburg, Va.	58
Little Barren sec. along Loyston Piek, Tenn.	63
Little North Gap to Kyle's Ferry, 15 mi. north of Rogersville, Eidsen, Tenn. sec.	25
Little North Mtn. on NW end	39
Little River limy shale 200-250' thick at briège over; region of Meadow, Tenn.	60
Longview Mtn Tenn.	83
? Madisonville-Povo road	13
Lowville (Blacksburg, Va. type of rock, but cobbly and shaly here)	35
upper - Loyston, Union Cot., Tenn.	43
1s. Walker Mts., Wytheville, Va. quad.	47
Inneville Creek to Cherry Gorve, Va. Woodstock quad.	25

YEARBUS 1V2IG070E9
 DEPARTINER THE FO INEMIVRVEDP
 SALTIS DALINU

Lee Highway
 3 mi. W of Marion - 9 mi. E. of Chillhowee,
 small quarry north side of road 49
 Lenoir

pre. marble outcrop 1 mi. north of Bluff City	66
60' more or less darker than Mosheim, Saltville, Va.	49
200' Eidson, Tenn. sec.	63
318' Newlands Church - road between Kingsport and Blountville	66
25' faulted down	66
followed by Athens	66
40' Mosheim Cut	67
2 mi. west of thence, NW toward Russellville, Bulls Gap	69
on Morristown Pike	71
20' Maloneville, Tenn.	76-77
✓ Neubert Springs, Tenn.	79
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---	---

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--	----

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DEPARTVREI THEI FO INTMENTVAPED
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" " " Newport, Va., sec. at
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YEARNS TVCIGOTOEAG
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Cincinnati

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 Little North Mt., west of,

Page

Eden

Clinton

?Fairview, Gray ss 31

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* Cotter

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with Ulrich and Resser, Brushy Mt. sec.	29
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Campbe beds, at. Aust ^{Yst} ing ^{ing} ville ^{ville} , Va.	93
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Mosheim Cut	67
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Basal conglomerate of Cambrian with Ozarkian -

YEVNUS TVCIGOTQEG
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SELTATS CETLINU

Bloomsburg in Ferguson's valley	5
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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

Bigby

Curdsville and Hermitage, 215' at Loyston,
 Tenn. sec. 55

Blackburg, Va.

about 10 mi. NW of sec. at Sinking Creek, 1½

mi. NE of Newport, Va. thru Catawba : : : : 13-A
 Lexington via Newcastle

Black beds

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Black

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at Mulberry Gap, Tenn. 17

Black Water valley

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Black River

beg. with red in Marble Hill belt SE from Powder

~~Black Spring, Tenn.~~ Depot 74
 Bland *See below.*

perhaps same as at John Gracey's place, 4 mi.
 SW of Big Walker Mtn. Gap on Wytheville-

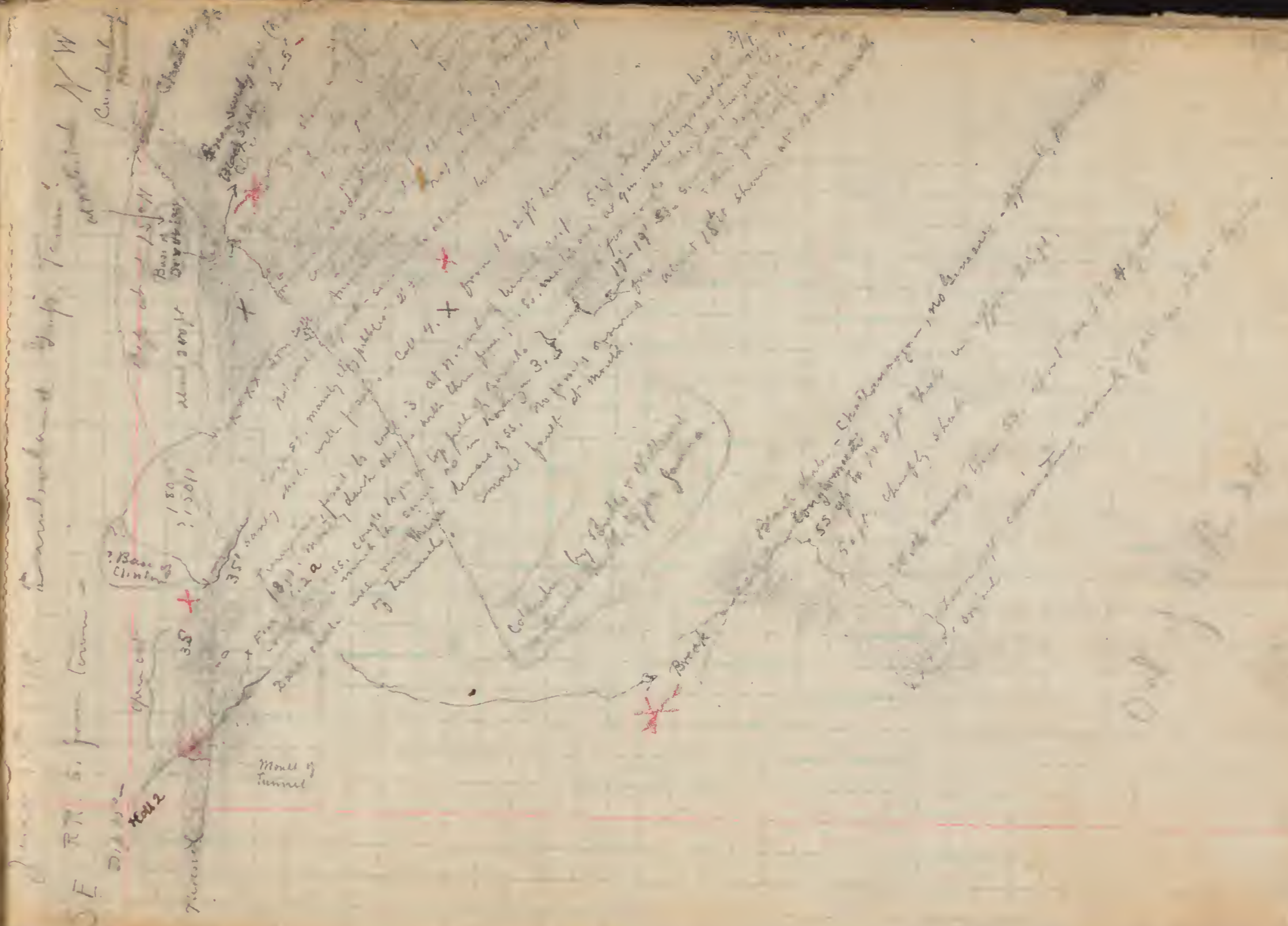
Shawn Springs Road 45

Blountville

sec. **Newlands Church** road between Kingsport and 66

Arcadia school passed on drive from Rogersville

to Johnson City? Tenn. via Kingsport, Bluff 66
 City, Piney Flats & Austin Springs



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 passed on drive from Rogersville to Johnson City, Tenn., via Kingsport, Blountville, Bluff City, Piney Flats and Austin Springs 66

Truck road - *Pennsylvanian*
Camp *Shaw*
New Scotland
Clinton Hill

May 25, 1922

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

Saw no Clinton in
anticline north of
New Bloomfield, near *X*
south of Scherburg.
Clayton's map of Perry
Co. evidently incorrect.

Wills Creek gorge,
Cumberland Md
May 27, 1922



- Ostracod zone - 1 = 57 ft. above base
- Z. antiochensis 2 = 98 ft
- Z. decorosa zone 3 = 142 ft
- Z. amacista " 4 = 170-174 (base)
- Z. lower part of = 5 = 178
- Z. lata
- Z. solis compact 6 = 180-5

450 M

UNITED STATES GEOLOGICAL SURVEY.

450 M.

SURVEY OF THE

at least 400 ft of black ls

In charge.

No.

Name:

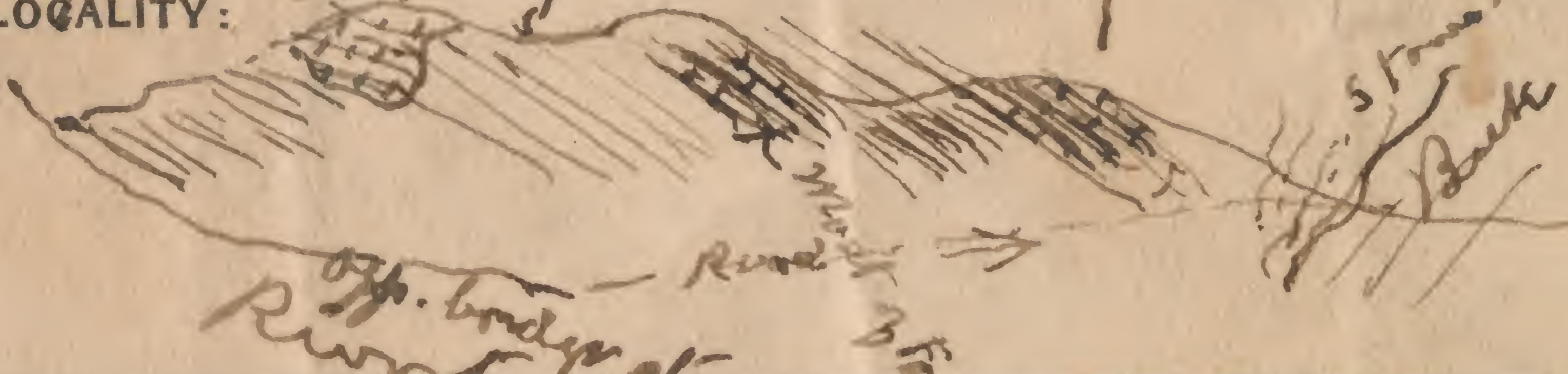
Field:

Determined:

1 sample from shale partings

LOCALITY:

old quarry



Collector:

Date:

Memoranda:

Note Book:

Page:

May 31, 1922

J. H. Boyle

129 200

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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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Atlantic City

Face 1938

Virginia

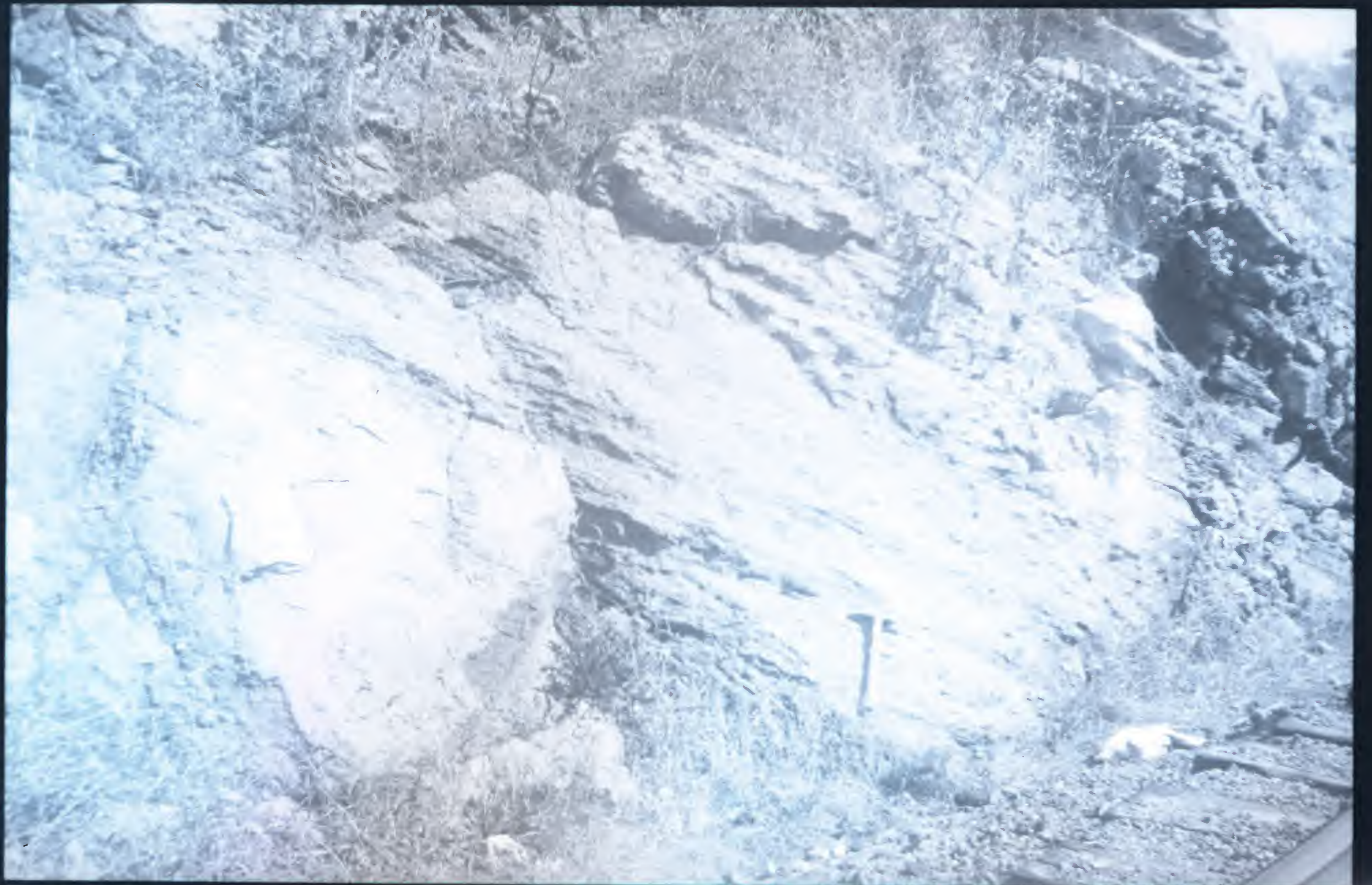
Staeburg









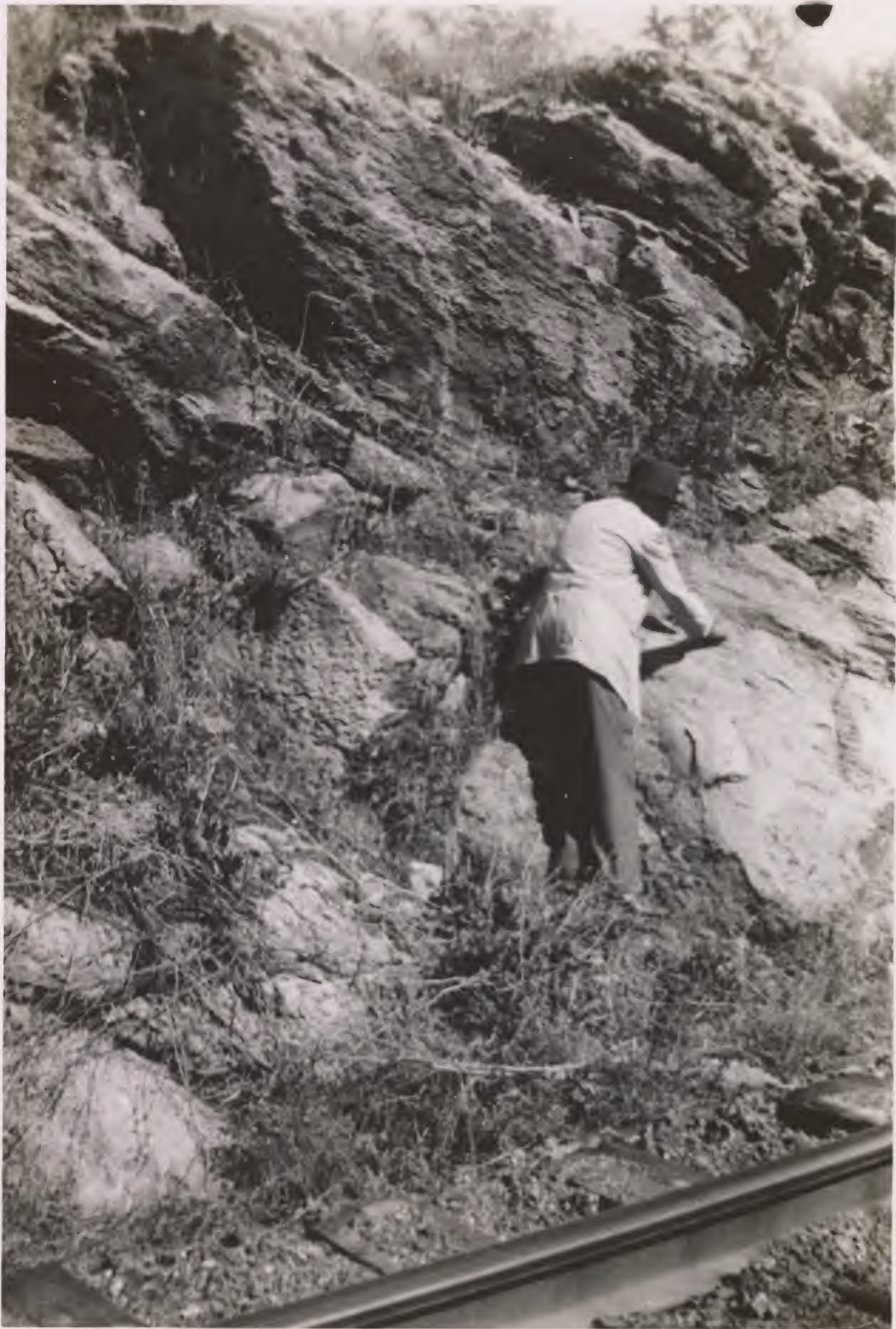






Oct. 1938.

779



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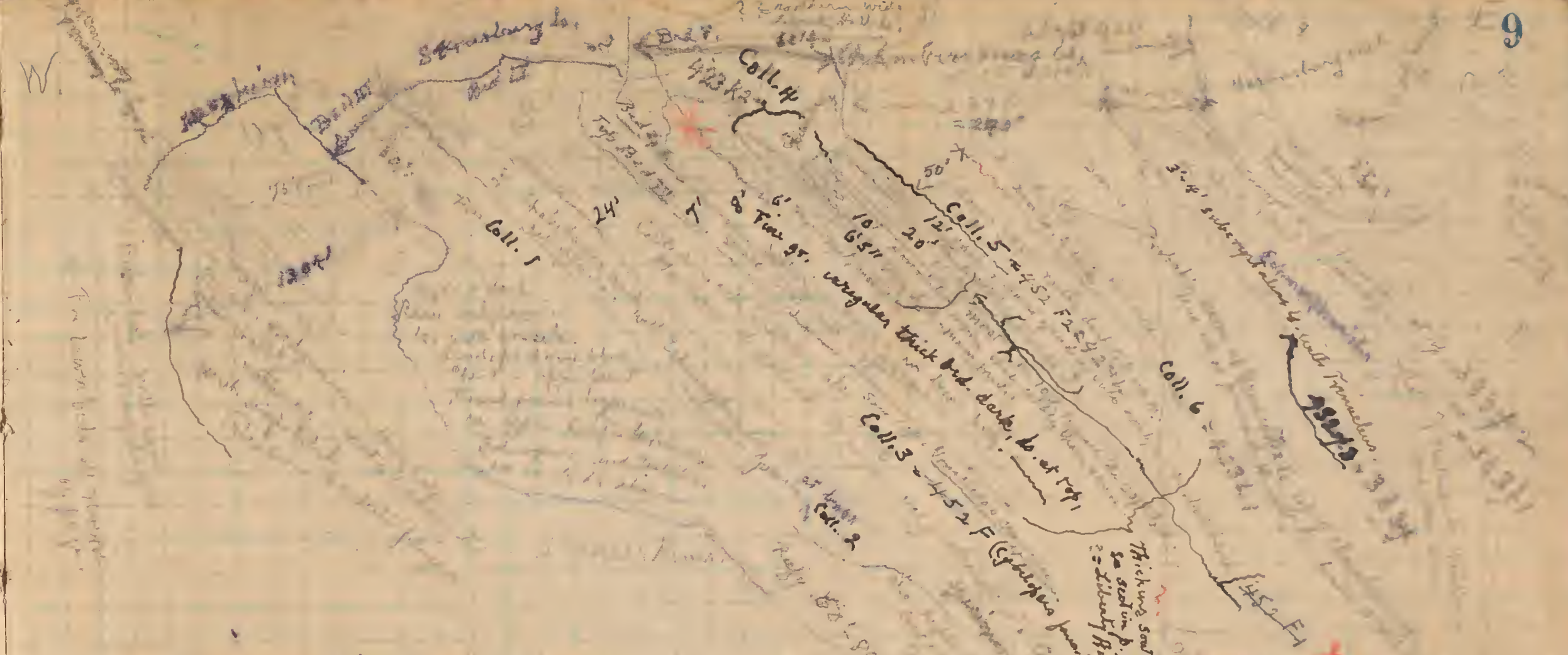


622

TO TAN

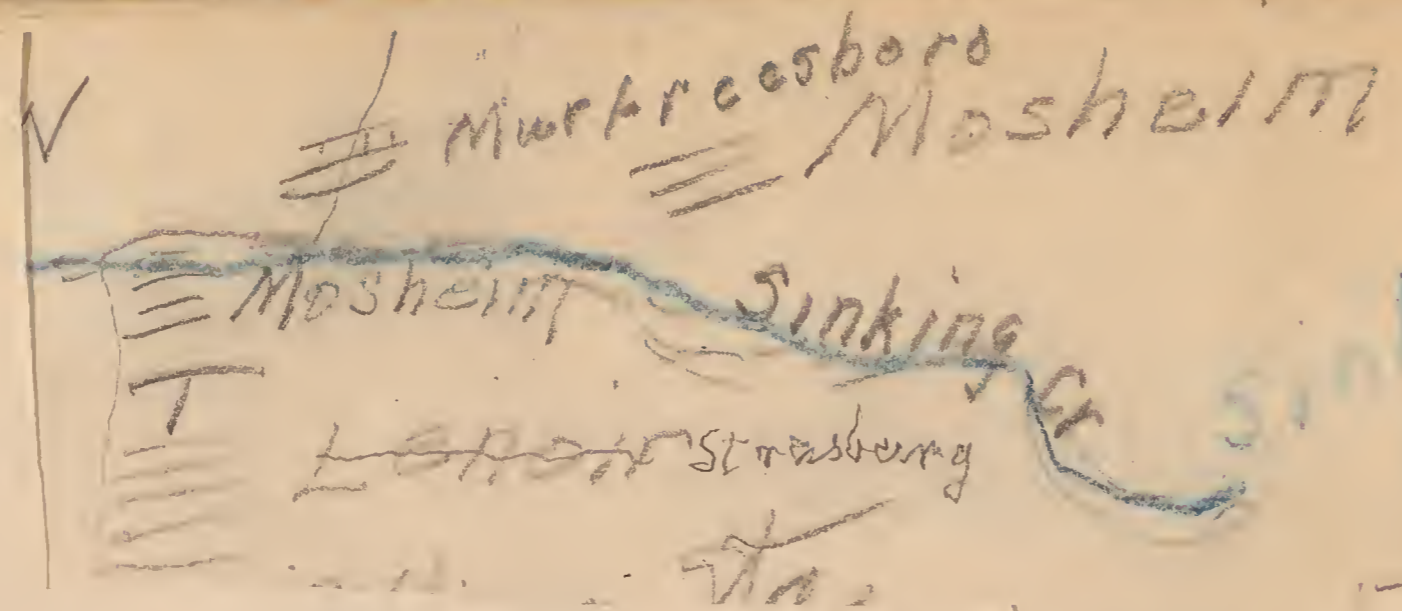
TO TAN

Riverton, Va.



Strasburg, Va. Ordovician section, revised
 May 29 & 30th 1922 (1905-8 sections & revisions
 in 1908 p. 52)
 W. R. Mather.

See reverse of this page for table of sections (cont. westward) made in 1923.
 For Riverton section see table on page 9.



E

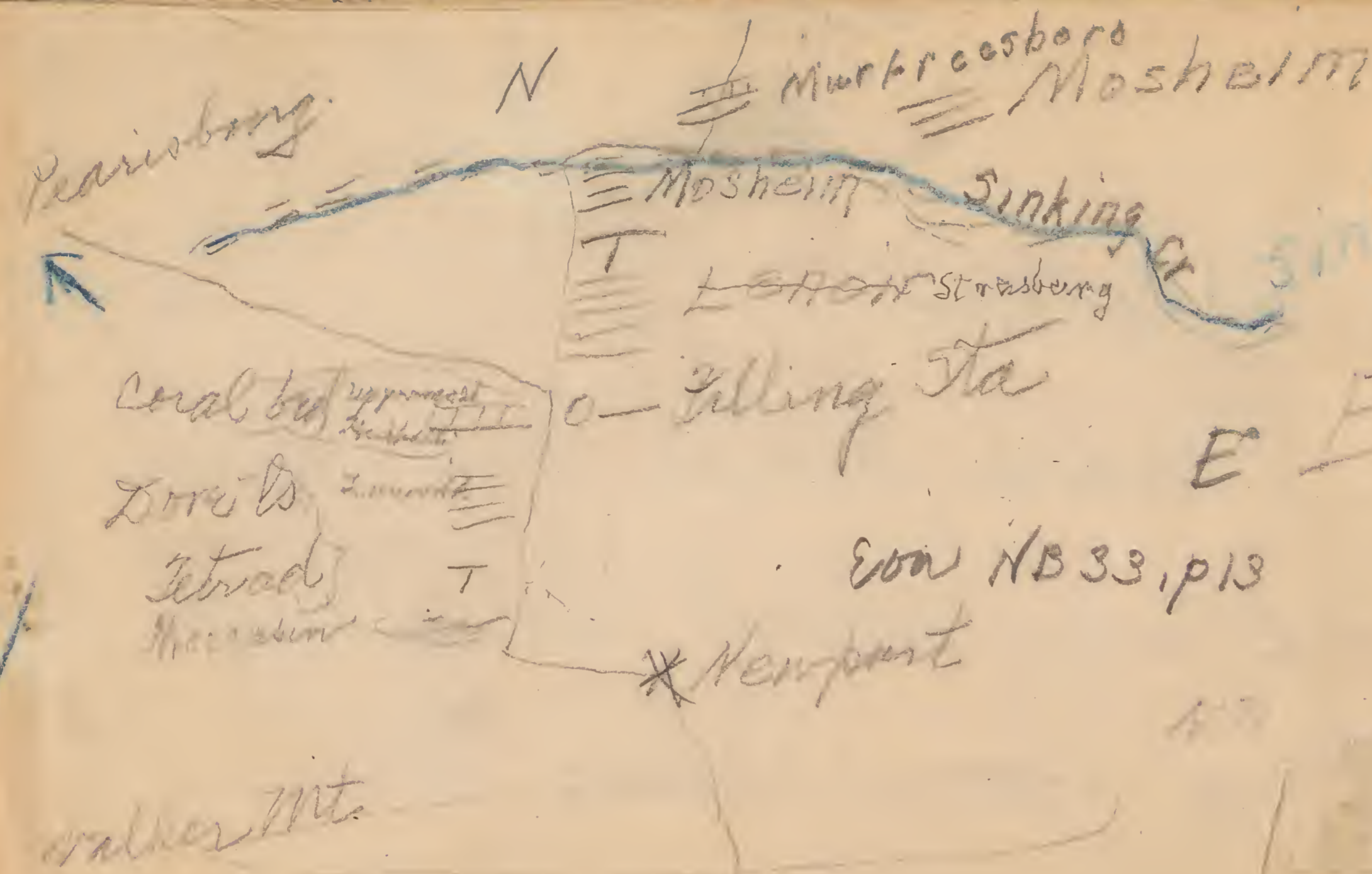
13

D. B. V.

June 1920



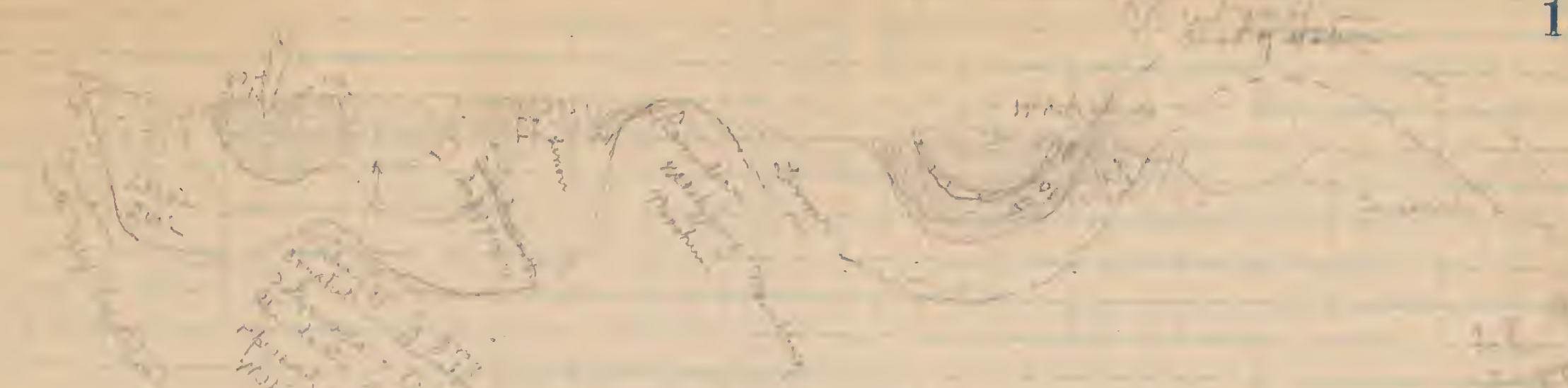
According to subsequent
 measurements by Holden:
 Moshett 84ft.
 Lena 415ft.
 Holston 68ft.



According to subsequent
 measurements by Holden:
 Moshell 84 ft.
 Lorels 415 ft.
 Holdens 65 ft.

65 ft.
 2 ft.
 100 ft.
 100 ft.

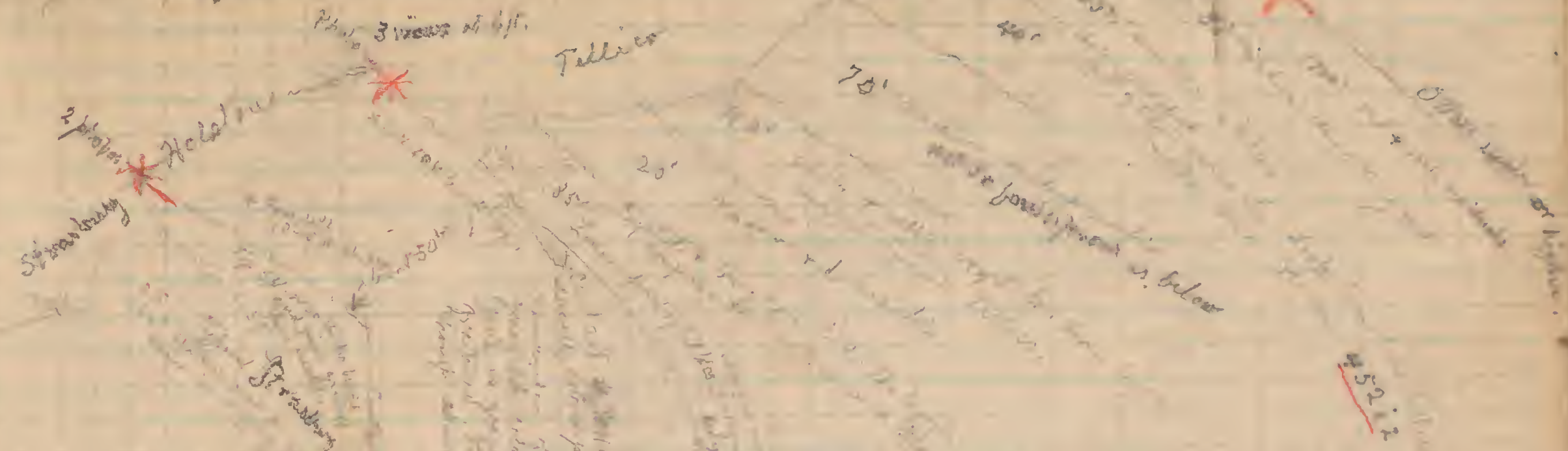
Blackburg
 S



Most of the Whitesburg is overlain by shale in bands at and to north of Whitesburg. In these bands, probably the soft crystal ls. is at or near top of formation. The Whitesburg is less than 100 ft. thick. It should be noted that ^{small} limestone lenses occur in the shale in the most southern of these bands. These lenses tend toward the north from their base & occur in the same line as the Bull Run - Mountain peaks. Apparently the Allegheny also thins markedly in going N.W. across strike from Bull Run. That would be as expected.

The Whitesburg from above
 at end of Bull Run
 June 5th 1942 with [unclear]

1922. ...

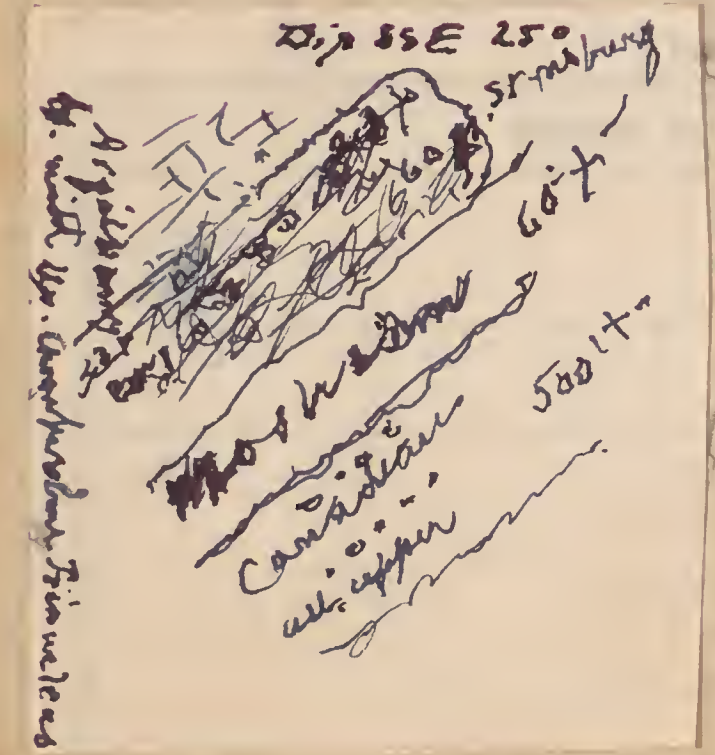
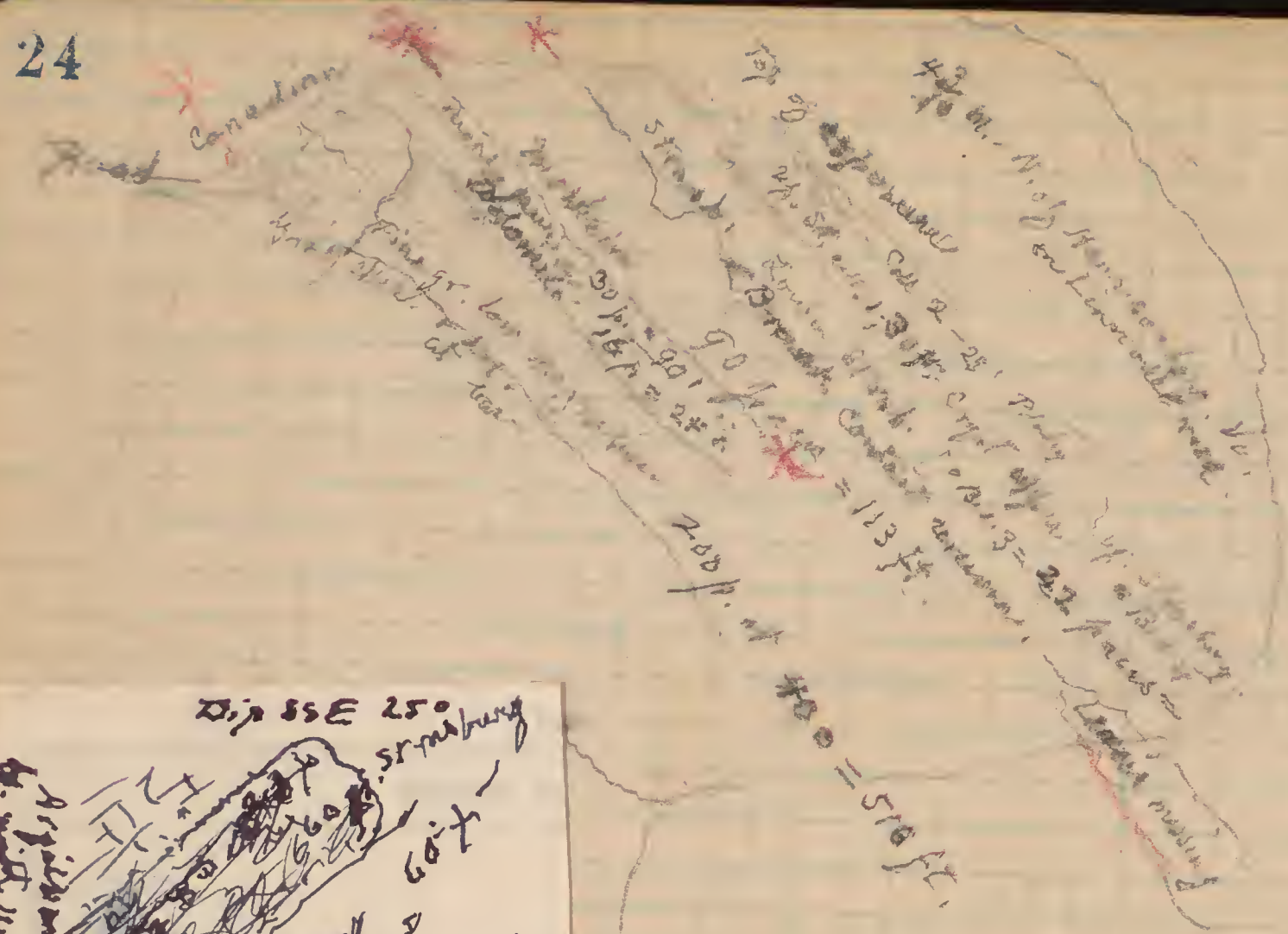


Phot. 1-12 - at top.
 contact of ...
 2-3 contact at top of ...
 2-4 contact at top of ...

Structure of ...
 ...

Hole No. 13 & 14 ...
 ...
 deposited at Charleston ...

up



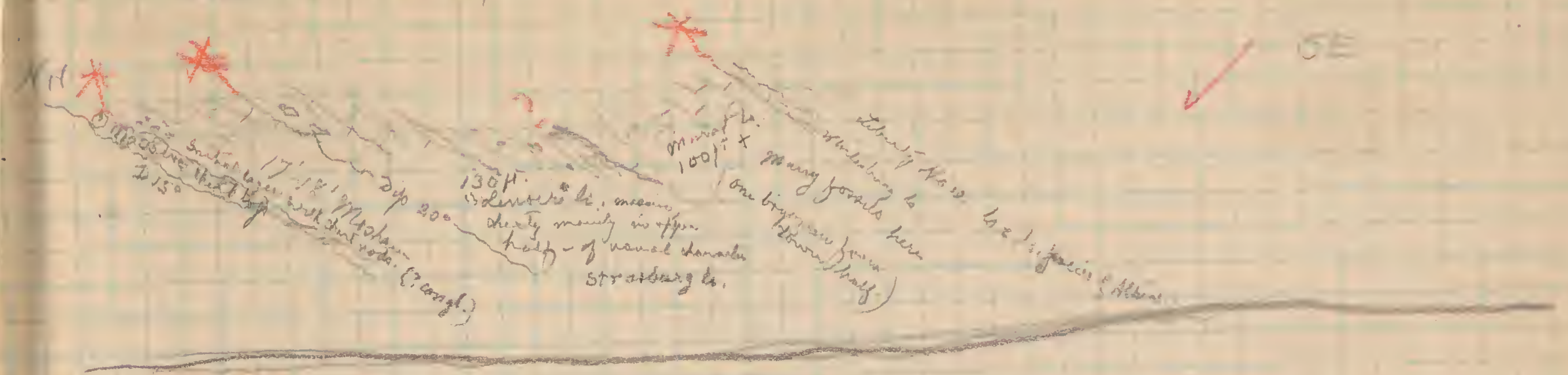
Season 1923 in Virginia with P. B. ...
 Road Leesville Gap to Cherry Grove, Rockingham Co. Va. Woodstock quad. May 18th 1923.

Season - 1923.
 May 15th left Washington with Reservoir Food section.
 May 16th at Strasburg - sep. 1.0



Section at Mesat, Va.

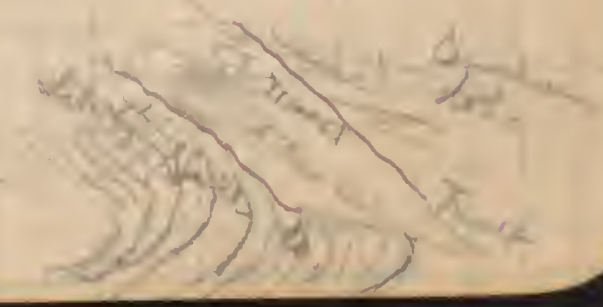
May 1920 - H. D. Campbell



Along Buffalo creek, where it crossed Truax, NW from Zullman.

There is here at least 400ft of Trenton-Mantoung shales, and under this Nidulites + other Chambersburg ls. all rather argill. & shaly weathering. Found black shales in or at base of Chambersburg with *Tetradium*, *cellulosum*. Above the Trenton comes considerable thickness of Eden which lies in order of sequence.

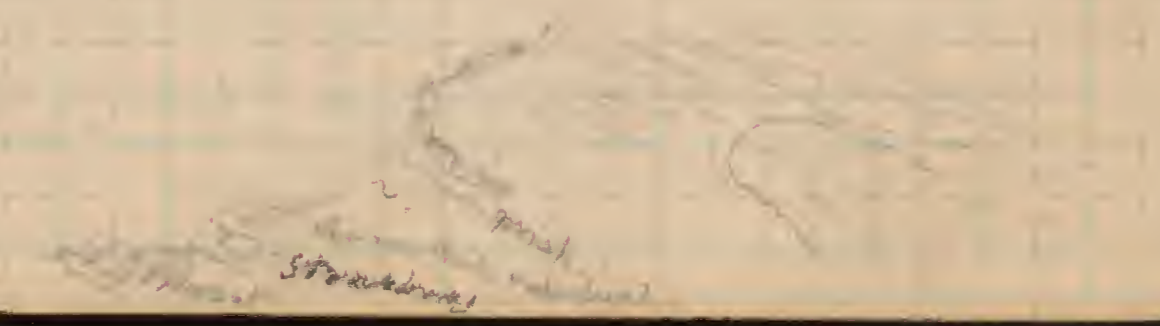
Compare with East Lexington section - 1920 - as in that section a thin argillat. ^{gullied + banded} wedge of Athens shale + another of Mesat adorning beneath overthrust Canadian dol.





May 19th - section across Brosby Mt across valley between it and top of Rock Hill
 1923. With H.D. Campbell and Rover.

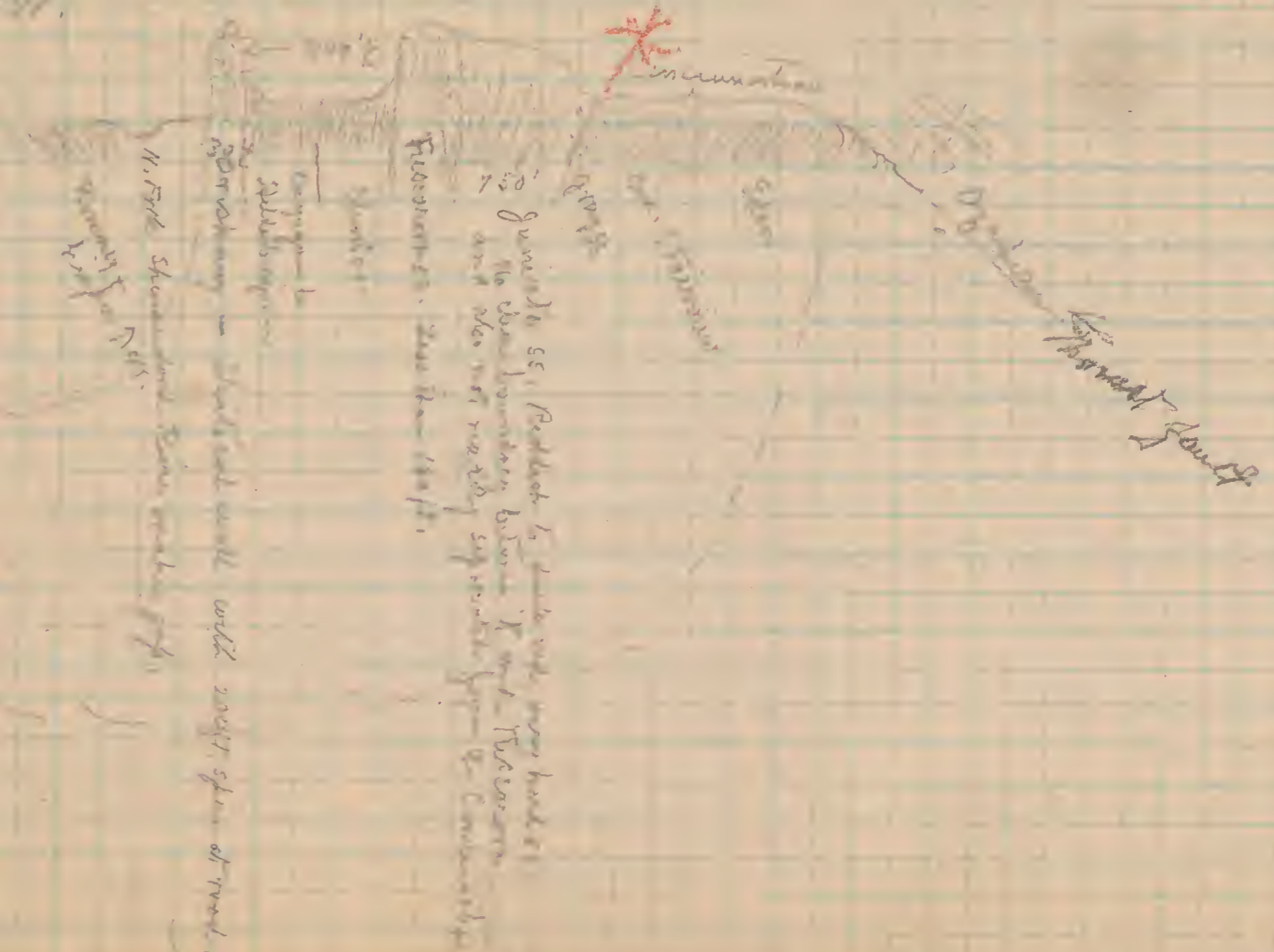
May 20th - Similar overturned section, with possibly Strasburg ~~Lenox~~ all displaced, seen this Sunday morning along Natural Bridge - Buchanan road, about 3-4 m. west of Nat. Park. One sample shows interior structure out of the Strasburg taken from here?



Sketchy section through Brooks Gap in Little North Mt., west
of Broadway, Va. May 17th 1923.

Starkly scenic.

1151.



1151. 1152. 1153. 1154. 1155. 1156. 1157. 1158. 1159. 1160. 1161. 1162. 1163. 1164. 1165. 1166. 1167. 1168. 1169. 1170. 1171. 1172. 1173. 1174. 1175. 1176. 1177. 1178. 1179. 1180. 1181. 1182. 1183. 1184. 1185. 1186. 1187. 1188. 1189. 1190. 1191. 1192. 1193. 1194. 1195. 1196. 1197. 1198. 1199. 1200.

1151. 1152. 1153. 1154. 1155. 1156. 1157. 1158. 1159. 1160. 1161. 1162. 1163. 1164. 1165. 1166. 1167. 1168. 1169. 1170. 1171. 1172. 1173. 1174. 1175. 1176. 1177. 1178. 1179. 1180. 1181. 1182. 1183. 1184. 1185. 1186. 1187. 1188. 1189. 1190. 1191. 1192. 1193. 1194. 1195. 1196. 1197. 1198. 1199. 1200.

East Tennessee - 1923.

Interesting
Synposes



Section, in North east corner, west end of Hubbard Park (old)

June 7th 1923

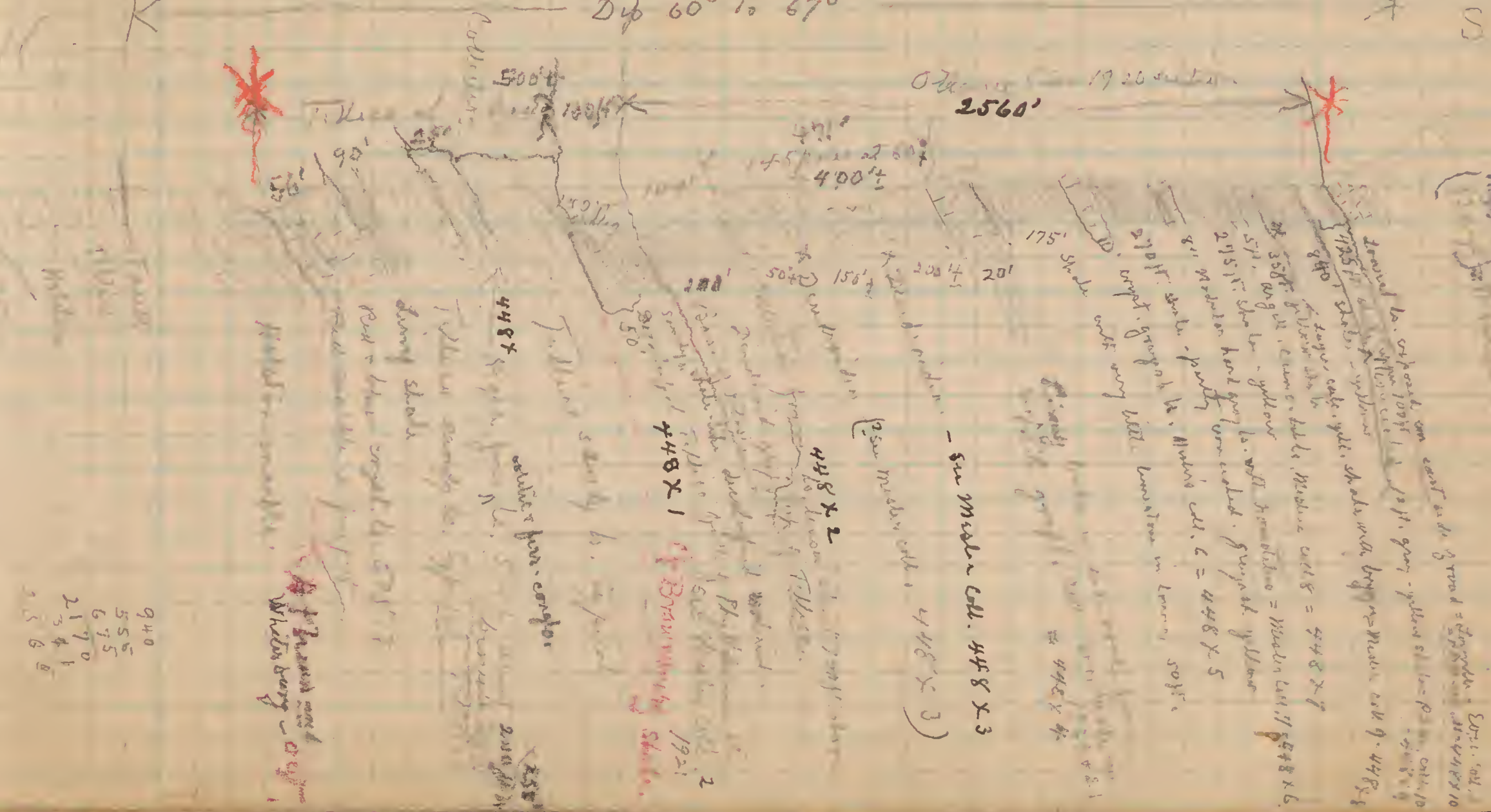
With Ray & ...

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

East Tennessee - 1923

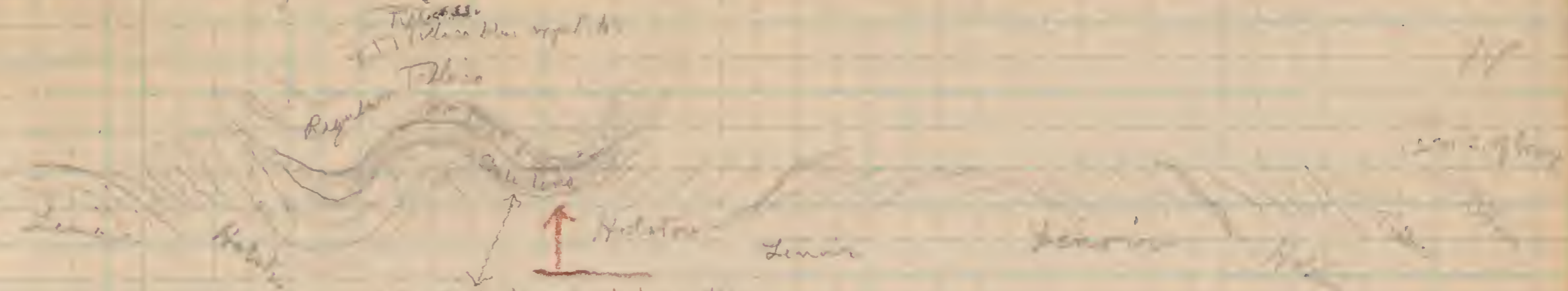
June 7, 1923. Lower part of section along creek 7-8 m SEE of bridge at
With Musler & Prof. Gordon
in 1921 - NS. 32, p. 41.

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



940
555
675
2170
341
938

June 7th 1923 - With C. H. Gordon & Meade.
5-6 m. due S. of Knoxville, Tenn.



25-30 ft. lens of shale + siltstone
 full of small bryozoa
 and over this a 20 ft. or so
 lens of shaly argill. ls. also
 full of cone bryozoa and
 bryozooids - Both lenses
 lying between Holston and
 Regular Tullahoma
 Found collections from both lenses.

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

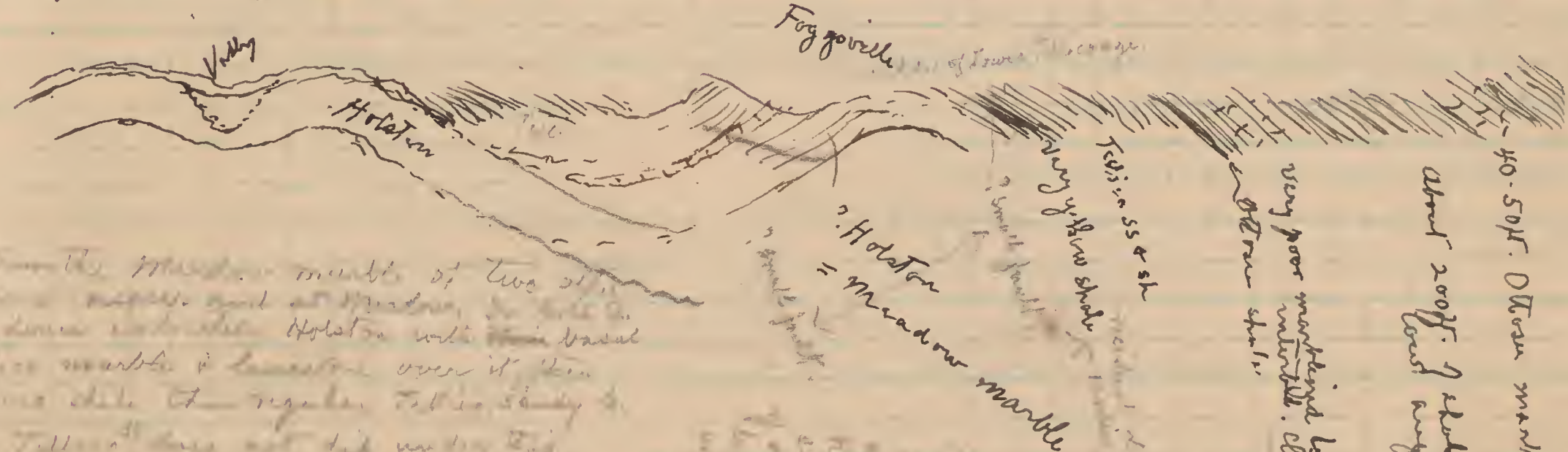
East Tennessee - 1923

East Trowers - 1923.

June 8th 1923.
Region of Meadow.

With Gordon + Moore

Keen to 3m. SE.

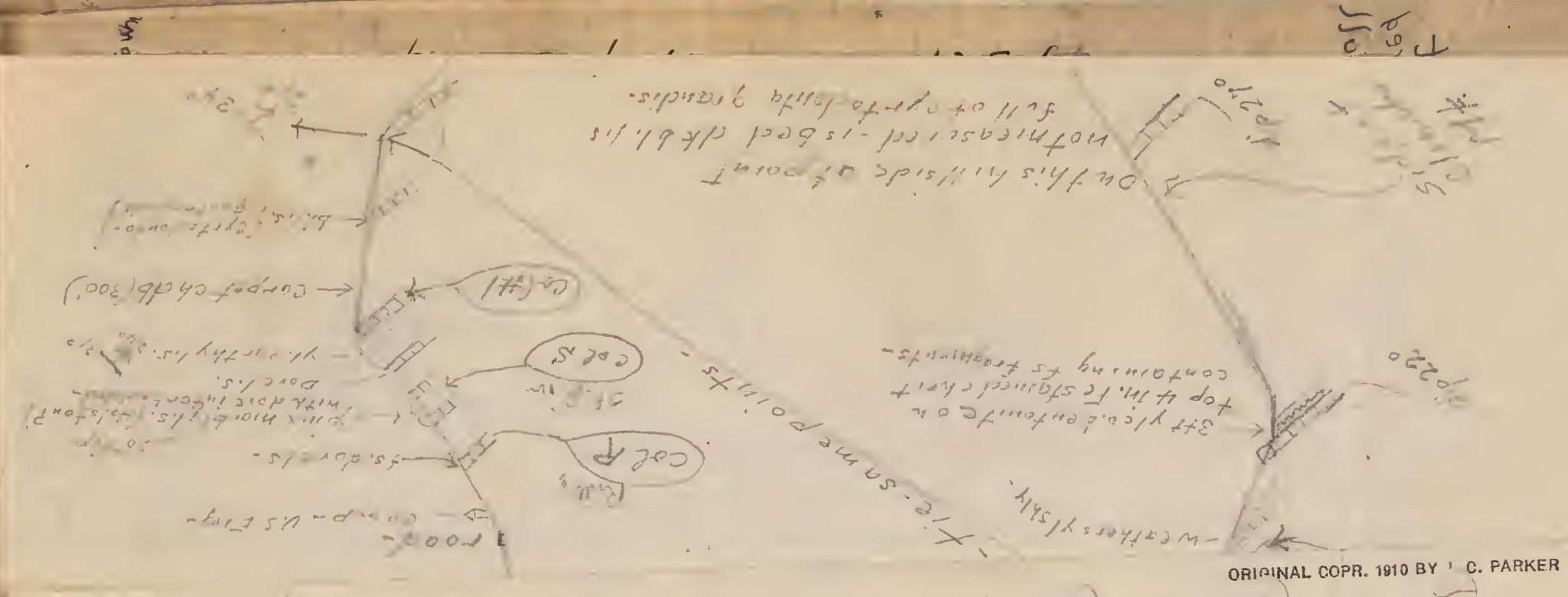


See the Meadow marble of two str.
 Holston with basal
 Tolson marble & limestone over it then
 Tolson shale. The regular Tolson shale is
 the Tolson shale not dip under this
 marble as thought by Reed + Bull

The Tolson shale being
 thin & 7' under the
 formation is suitable
 for Holston quarrying
 to the surface in marble
 areas.

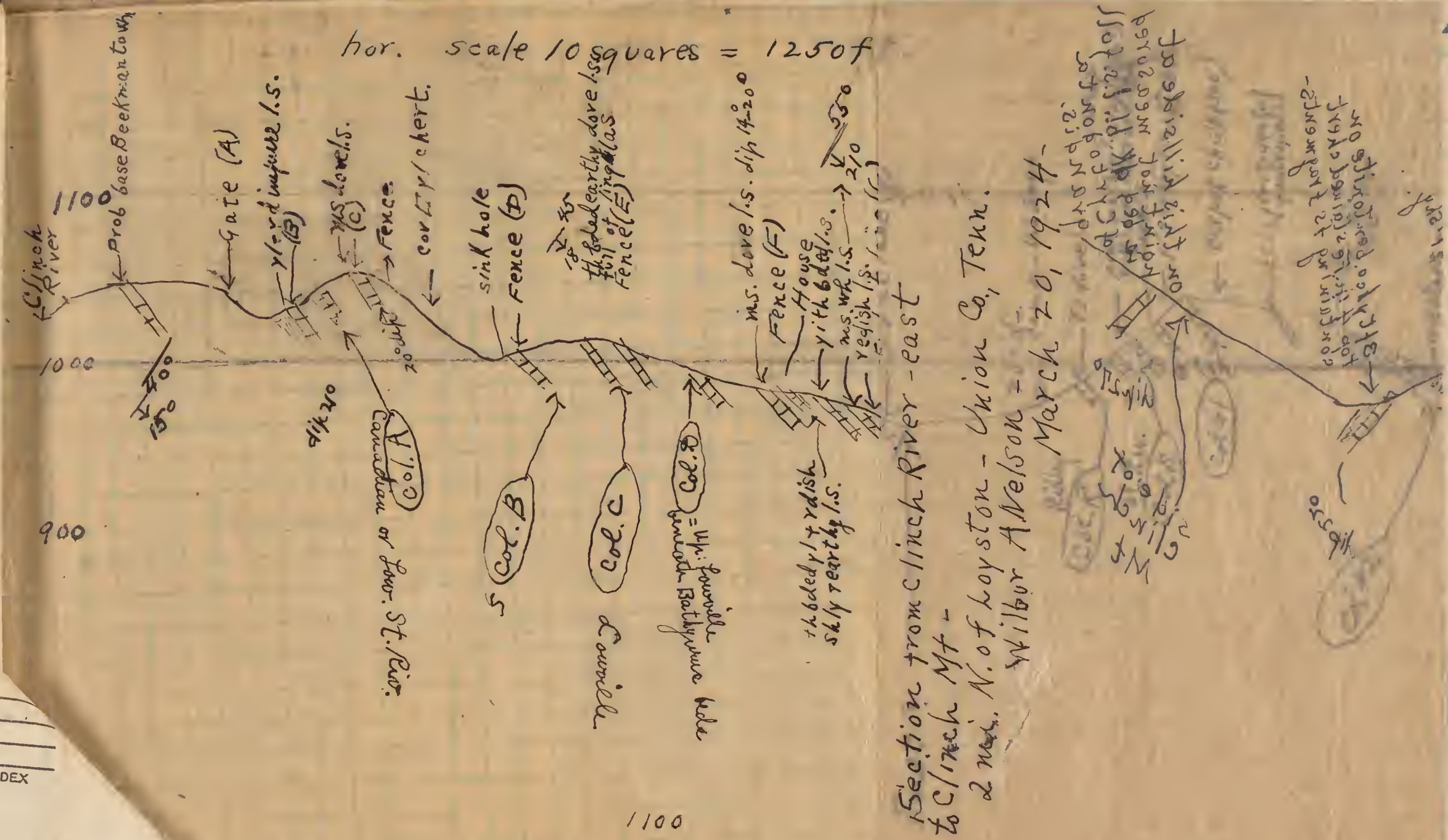
See long shale
 in valley of
 some fossils
 in the
 valley of
 some fossils

very poor marbled by a fine iron
 clay shale. Slaty blue & green
 fine grained
 100 ft. of
 100 ft. of
 100 ft. of

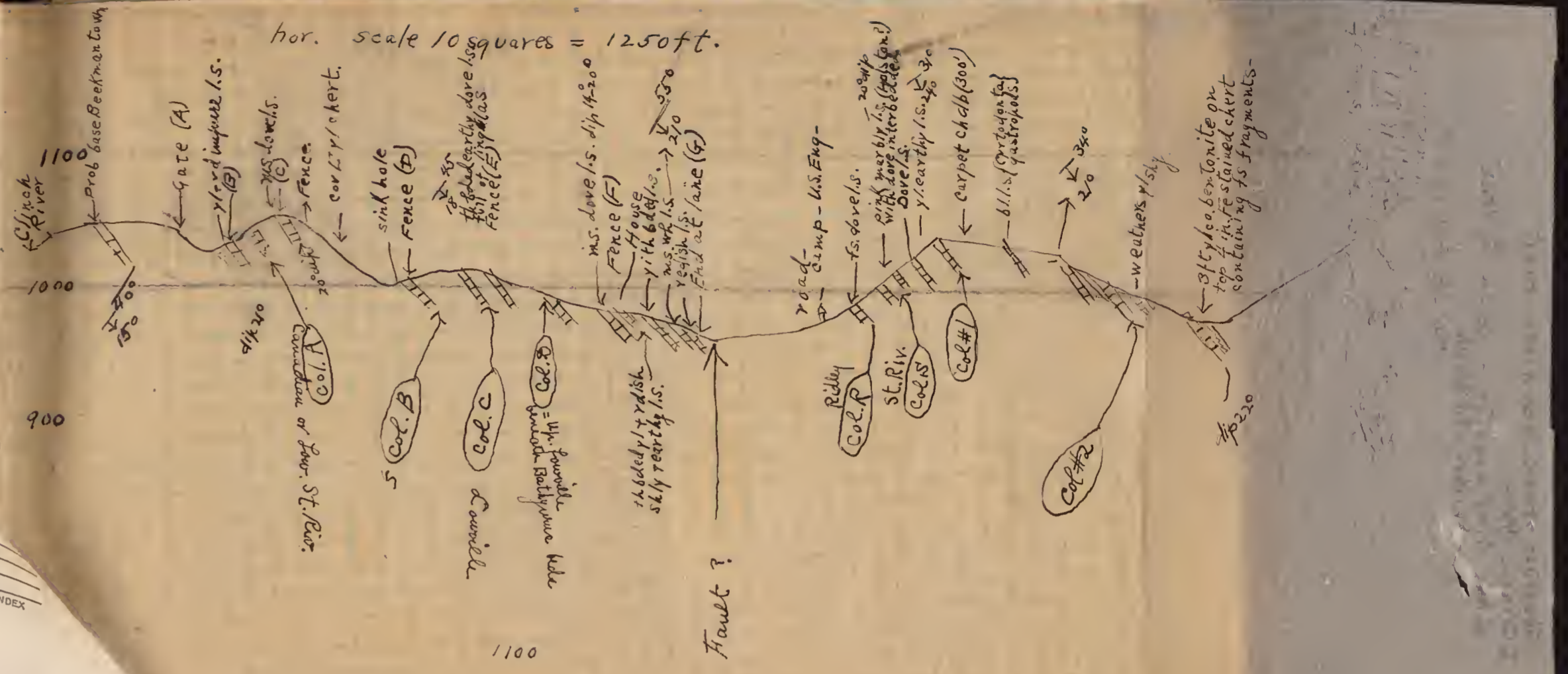


LEFAX, PHILADELPHIA, PA.

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



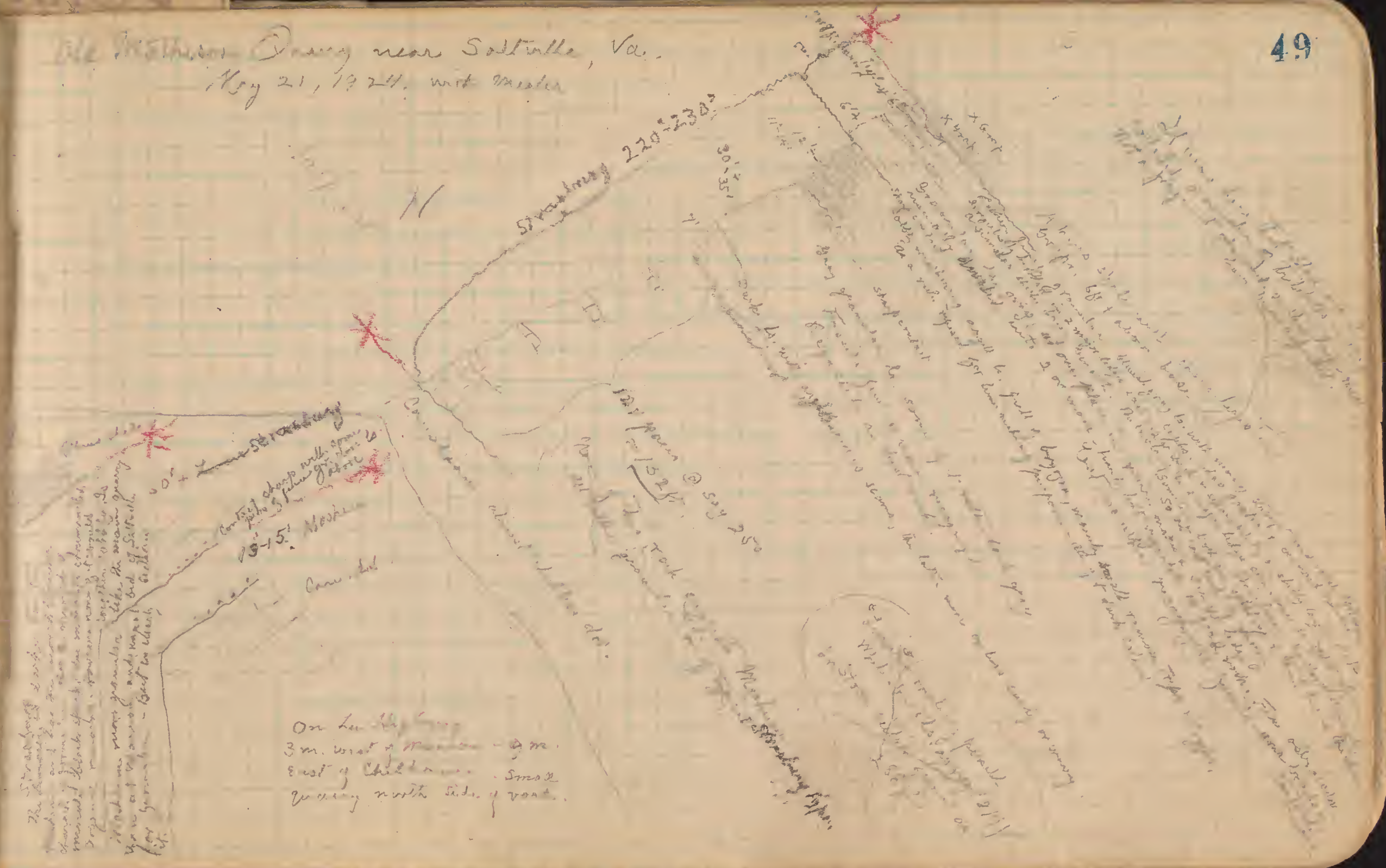
LEFAX FILING INDEX



- 5 Pure wavy grain limestone, rough bedding surface + rough beds
- 90+ magnesian limestone with much small chert
+ some large white chert.
- ? Folding
- 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 wavy grain dove limestone
- 50 magn. + impure ls. Thick white chert at base
- 70+ dolomite + magnesian limestone. massive white chert at base
- 280+ massive dolomite

all quarry

Old Matheson Quarry near Saltville, Va.
May 21, 1924. with Meeker





Clinton 921 ft.
 Up. Madison 300 ft. +
 Syracuse 160 ft. +

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. Stose

New quarry

- 28
}

 Dark gray shale, weathy light. Few graps.
 Irregular contact. Deep depressions.
- 28
}

 coarse granular gray massive limest. Few fossils 27B
 ← Impure black banding, weathy shaly.
- 13
}

 Less pure granular gray limestone with some black argil. bands
- 10
}

 Dark limestone banded with dark slickensided argillaceous layers, weathy 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. Eyphr. 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, weathy buff
- }

 Thick bed white chert
- 135±
}

 Similar Magnesian limestone
- }

 Thick white chert.
- 8
}

 Impure limestone & fine magnesian limest (700 - 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 solitee conglom in lower part

ed quarry

Orthoceras in top layer.

250 long



Stenopectonus
old & new specimens



[Faint, mostly illegible handwritten notes and sketches on the bottom page of the notebook.]

Loyston - Tenn. section.

6431

Lowerville

215 ft



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 150
 200
 250
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 350
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 700
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 800
 850
 900
 950
 1000

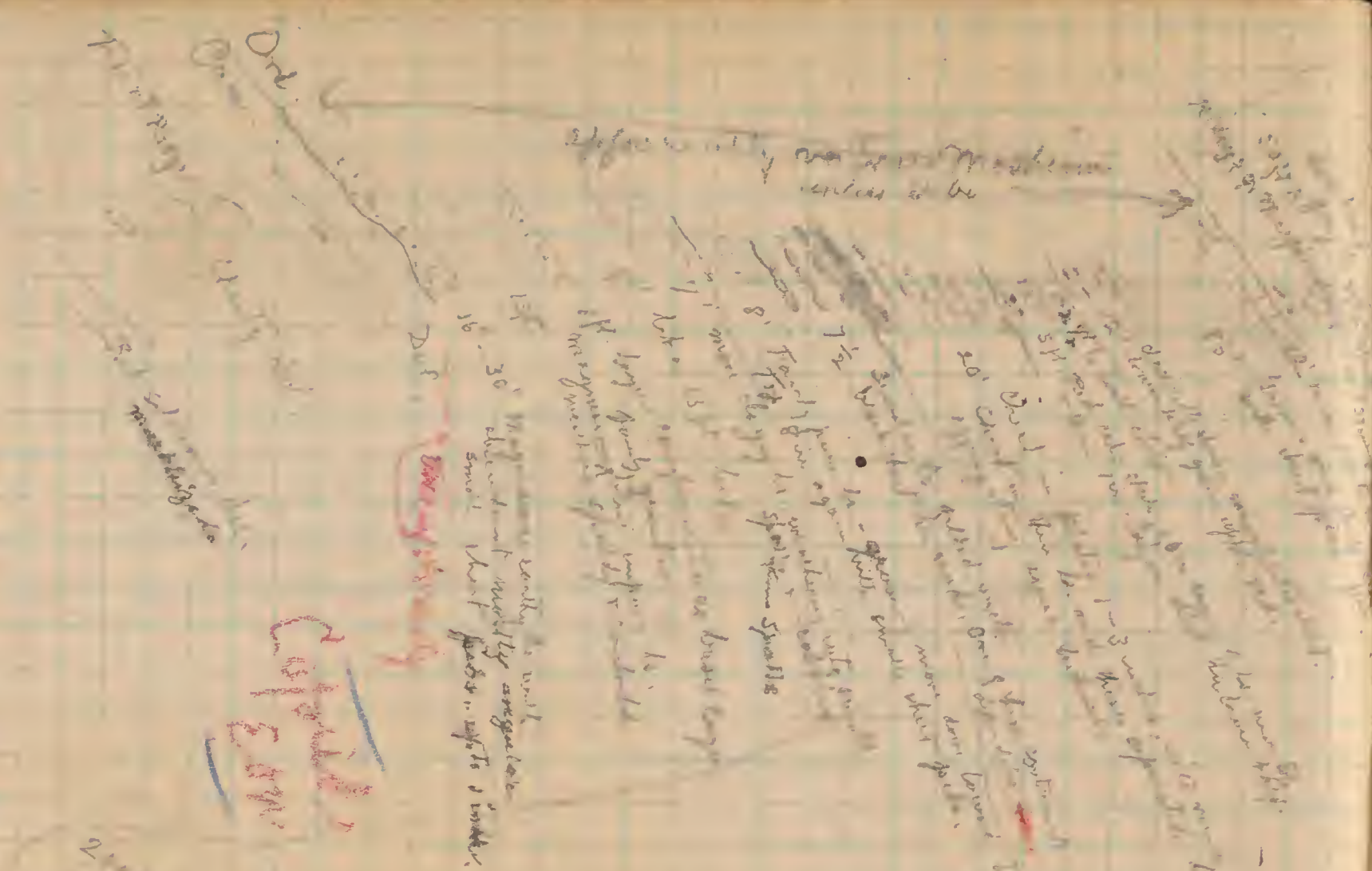
Section of Ordovician to the SE of NW of Loyston Tenn.
 at Crossroads. May 20th 1924. 200 ft. from stream
 See also page 1 of section p. 23 & down and section p. 23
 Dec 12 p. 52

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

Colville
 EM



Section of part of Upper Louisville about 1 mi
 road 1 mi. west of Little Barrow, nearly striking
 N. 02 E
 May 20, 1924

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 200

N

At Richards bridge over
Blacks River - N. Bank
(Crossing Ferry) Tenn.

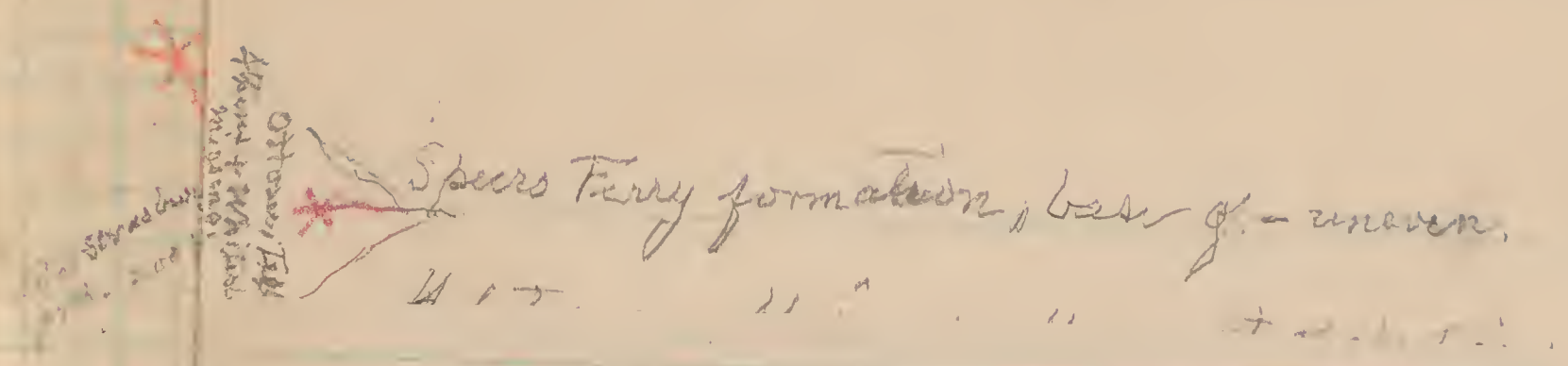


part of road

showing

thickness under

Lower part of Speers Ferry



Speers Ferry
1855

Lower part Evans Ferry

Opposite of Millstone
Ottawa Valley

* Spears Ferry formation, base of - uneven.

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

Leason *

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

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

Primeval
of Buffalo River, 5000 ft.

* Canadian

N

At Richards bridge over
Olmsted River - N. Bank
(E. side of) Train.



gull
5 ft
1 m. above

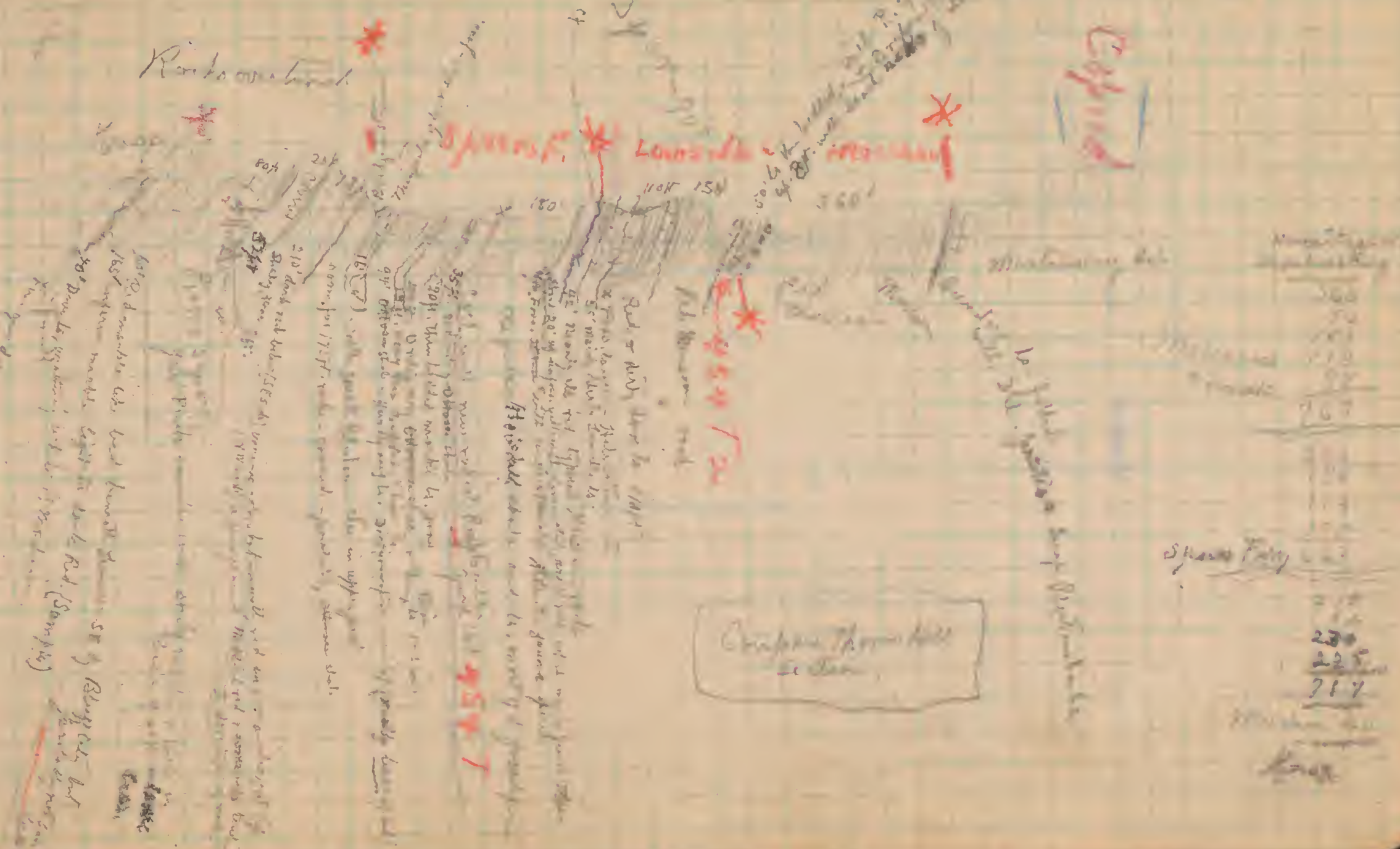
E. side of Train, section - 1888 - 1890 - 1891 - 1892 - 1893 - 1894 - 1895 - 1896 - 1897 - 1898 - 1899 - 1900 - 1901 - 1902 - 1903 - 1904 - 1905 - 1906 - 1907 - 1908 - 1909 - 1910 - 1911 - 1912 - 1913 - 1914 - 1915 - 1916 - 1917 - 1918 - 1919 - 1920 - 1921 - 1922 - 1923 - 1924 - 1925 - 1926 - 1927 - 1928 - 1929 - 1930 - 1931 - 1932 - 1933 - 1934 - 1935 - 1936 - 1937 - 1938 - 1939 - 1940 - 1941 - 1942 - 1943 - 1944 - 1945 - 1946 - 1947 - 1948 - 1949 - 1950 - 1951 - 1952 - 1953 - 1954 - 1955 - 1956 - 1957 - 1958 - 1959 - 1960 - 1961 - 1962 - 1963 - 1964 - 1965 - 1966 - 1967 - 1968 - 1969 - 1970 - 1971 - 1972 - 1973 - 1974 - 1975 - 1976 - 1977 - 1978 - 1979 - 1980 - 1981 - 1982 - 1983 - 1984 - 1985 - 1986 - 1987 - 1988 - 1989 - 1990 - 1991 - 1992 - 1993 - 1994 - 1995 - 1996 - 1997 - 1998 - 1999 - 2000

Cooker vol. 4, copied from Maslin's notes



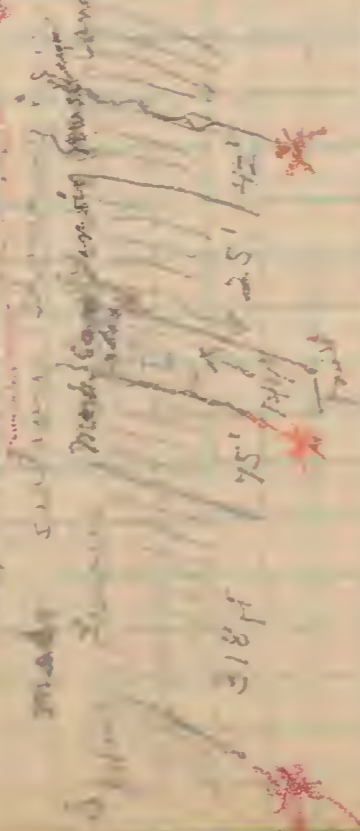
of the ...
SR W
... and ...

✓ 4th day (May 22) west of Reynolds ...
May 23 to 24 ...



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| ... | 1001 |

At Acadia school observed typical druse
 Powell but with *Trochammina*, *Bygonia* 2 sp.,
 Powell form of *Neomontana ortensia* and *Uvulites*
 A typical type. The chert bed was at least 6 ft
 thick and near the top of *Carrollia*, *Uvulites*
 section are *Uvulites*. Apparently the *Trochammina* in
 does not have fossils in a thin bed.



Bluff in
 1/2 mi S of Piney Flats made section of
 top of *Carrollia* and *Trochammina* 7 made small section.
 dip to base of *Trochammina* and less than
 10 ft above *Carrollia*. *Uvulites* about 10 ft
 about 3 ft thick. *Trochammina* by *Uvulites* and
 with light beds to. *Uvulites* *gastropoda* (with
Trochammina) in lower 10 ft. *Uvulites* *gastropoda*
 of *Uvulites* in *Uvulites*. *Uvulites* *gastropoda* *Uvulites*
 as described. *Uvulites* *gastropoda* *Uvulites*
 ranges S of Piney Flats and *Uvulites*.
 Standard *Uvulites* at 70 ft.

For section details accompanying
 section put in earlier
 section by Urbach N.A. 15p. 524
 p. 69.



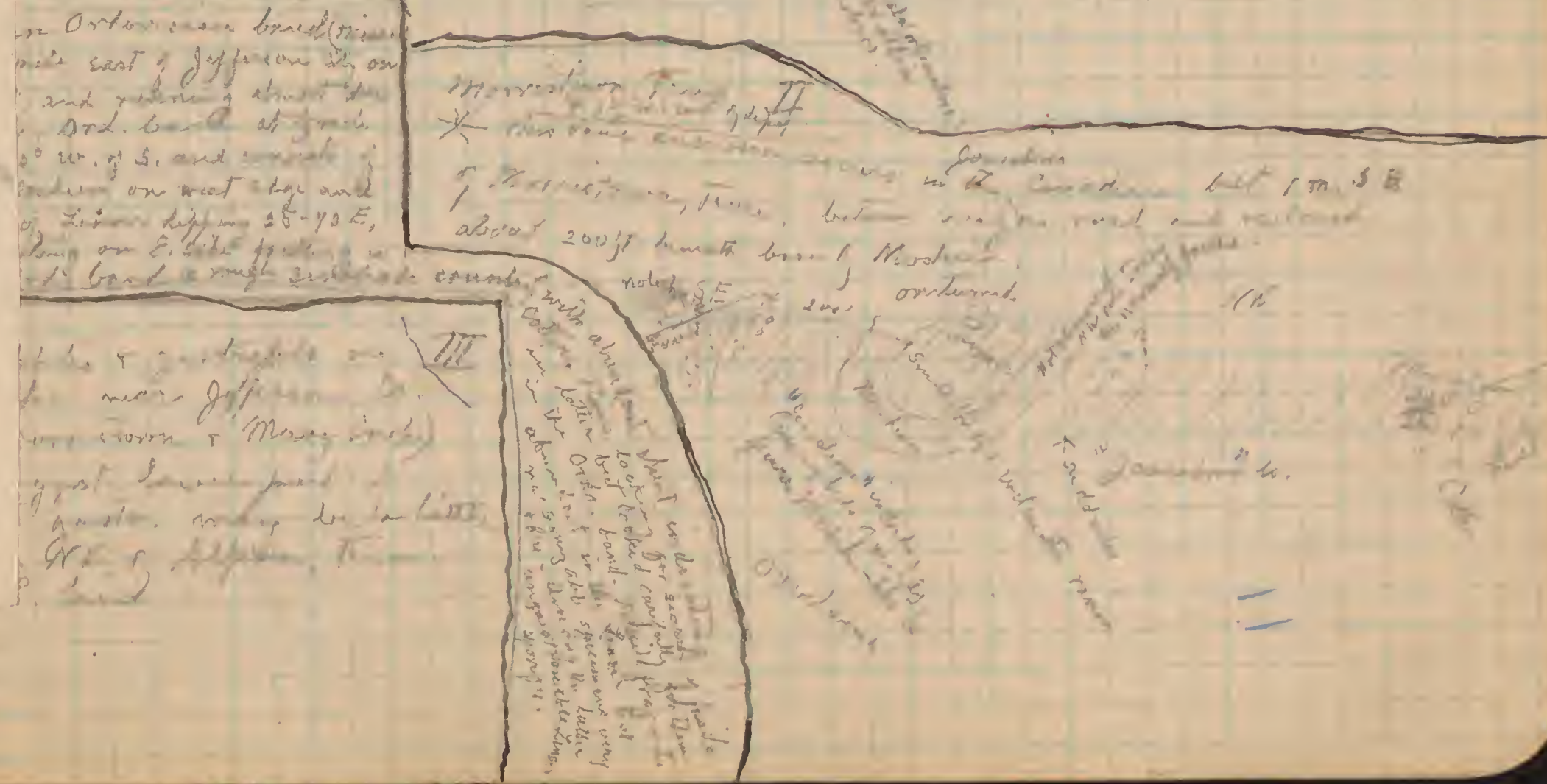
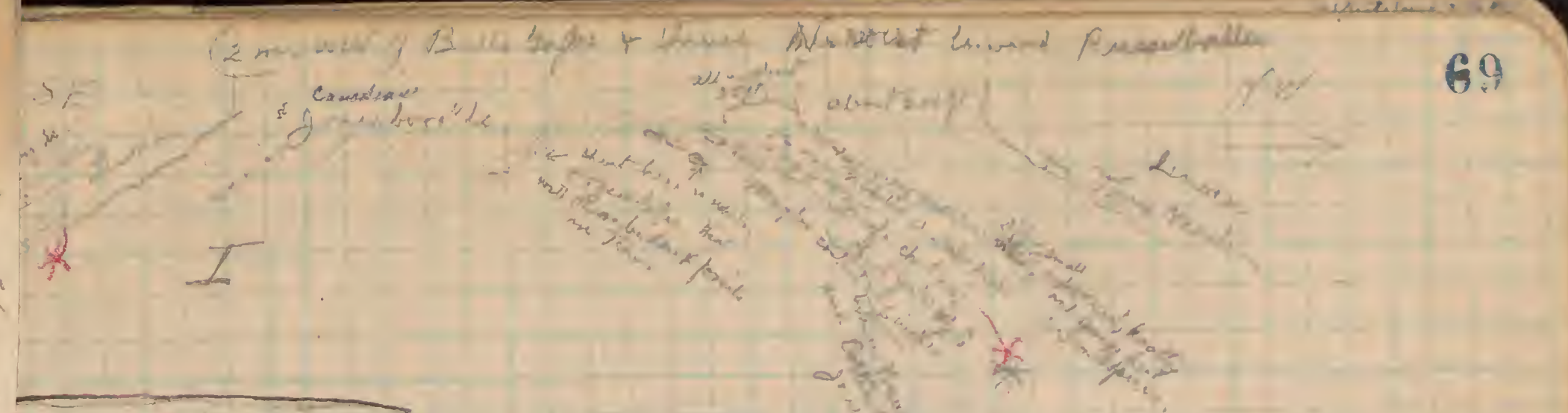
Lithologic break
 sharp - mostly down
 above, magnesian beneath
 line, photos by Nelson

19 ft Dove - mostly ... 254 T

Albion shale
 with ...
 132 ft

W. A. C.

Canadian - Ordovician contact
 1 1/2 mi S E of Portstown, Jefferson
 West side of overturned strata
 N.B. 33, p. 69



Ordovician broad (thin)
 mile east of Jefferson, on
 and yellow, about 200
 feet. base at grade
 50° W. of S. and consists of
 sandstone on west side and
 of finer dipping 25-40° E.
 on E. side.

The contact is
 near Jefferson
 west side of
 overturned strata
 west side of overturned strata

about 200 ft
 overturned
 Jefferson

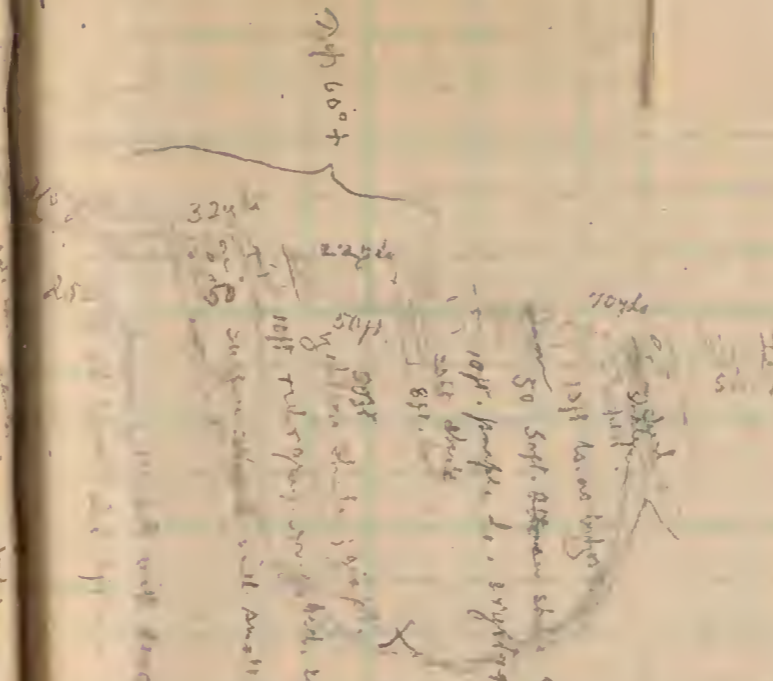
Canadian - Ordovician contact of
1 1/2 mi S E of Morristown, Tenn. ^{R.R. depot}
N.W. side of overturned andesites

NB. 33, p. 69

Depth of water of contact
alternates sh. to
evidently, or fossils by following.

Among notable points in this section is the dark bed and
succeeded them crystalline ls. which may represent the Madison which
that lies some 700ft above the typical Holston.
Note also the presence of one 200ft of mainly dark red massive
(presumably referred to basal Tellico) that are not recognized in the
Powder Spring section. Here the bed separates the top of Holston
from the Stylaria zone which in this 700ft is entirely unrecognizable
success to Holston. Here too is seen three representations of both
the Madison and the Leipers which are entirely wanting in
The P. sp. section.

Small coll. by Maden



NNW

8 mi. S.E. of Knoxville
Section at and near
Neutral Springs
Tennessee
June 5th 1924

Filled at top of exposure

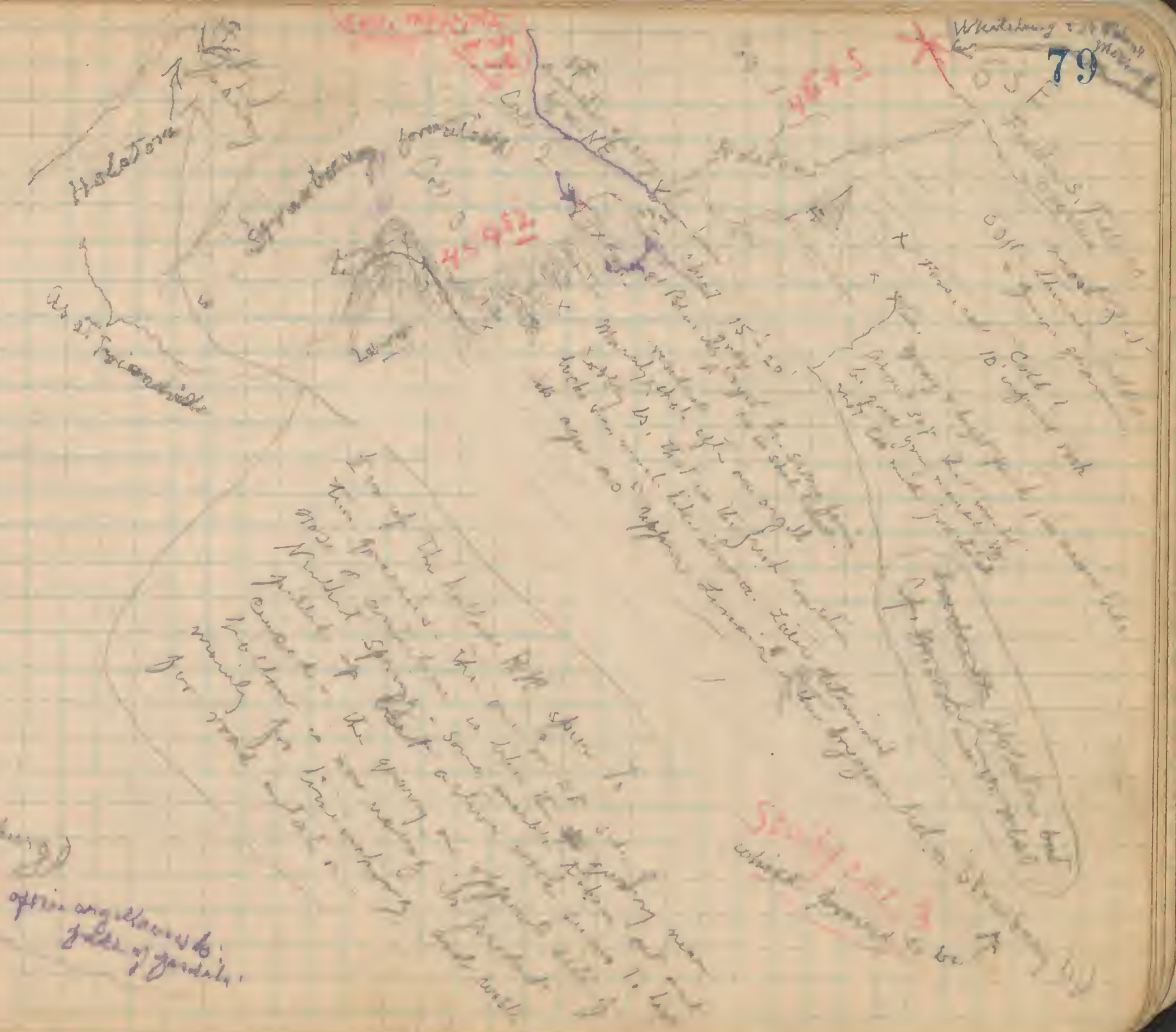
Height 90'

St. Charles

18 ft. cherty (St. Charles)

8 ft. ls. 20' or more

about 50" shal. like middle of other argillaceous ls.
Lenses in
tops of fold.



St. Charles
collected from the top

Friendsville Tenn.
June 6th 1924
with Maslov

SE



Spats by each
Road. M... ..

Outcrops on whole very poor



June 4th 1924
 with Mack -
 Trip hardly successful -
 made mistakes in strike, true
 no mistakes & had to walk the
 best miles.

950' Study loc. in heavy shale. variable all over
 Blue big Tullahoma
 Some big Tullahoma
 Some like like
 Some massive
 850' Tullahoma
 Some fine with heavy shaly
 500' Tullahoma
 Some shaly shale - some like
 some massive
 at least 1000'
 Cannelton
 Ord. & Devonian

360
13

Charleston, Tenn.

East of ...
with ...

Sunday ...

Section ...
3 m. NE of ...
400 ft. ...
A.C. 20, p. 10.

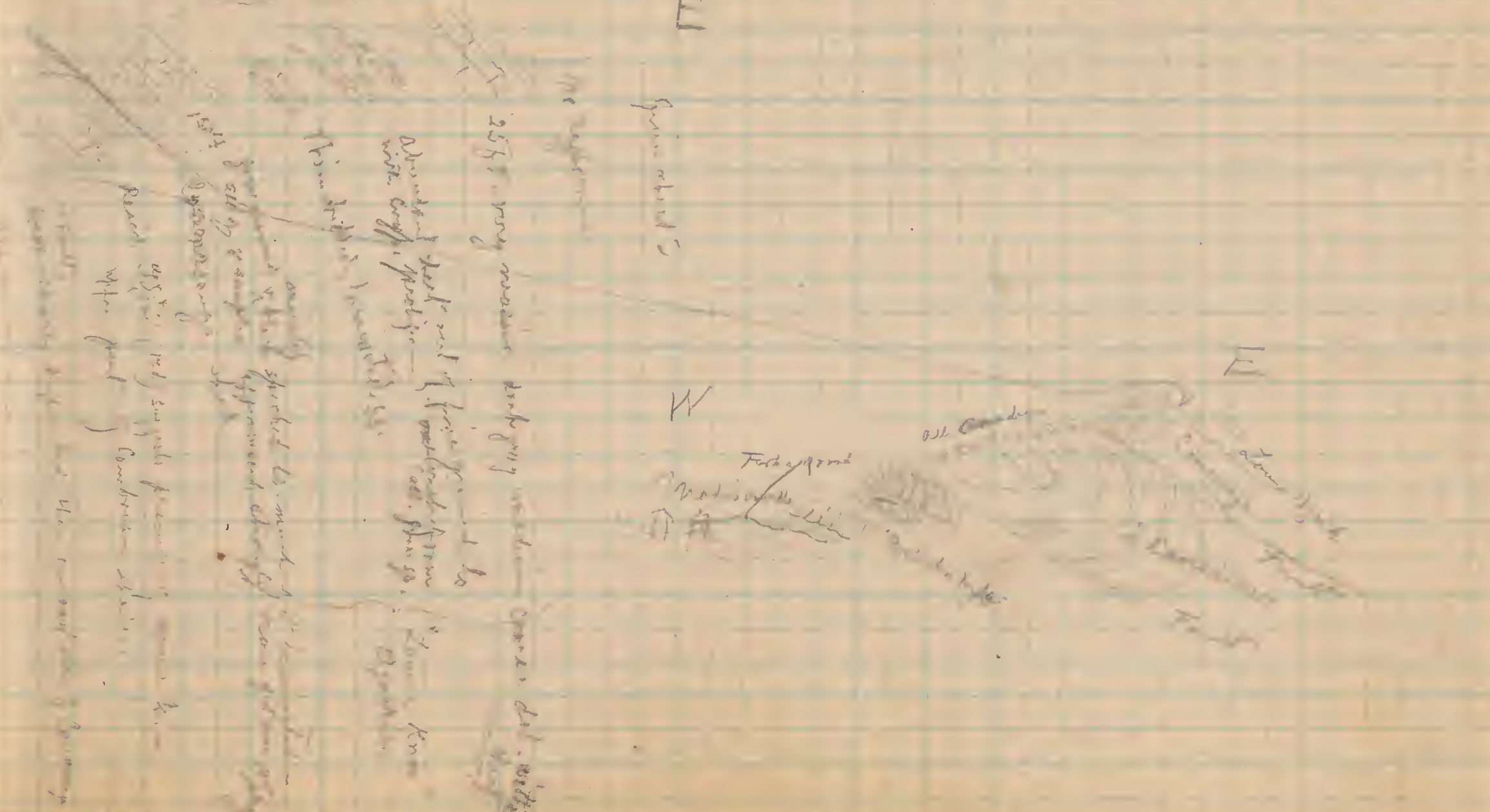
More detailed section ...
Calkoun ...
1918 ...
A.C. 20, p. 32.



Section ...
at ...
was east of ...

Basal part of ...
2 1/2 m. East of ...
with ...

Room for about 100 ft.



From 11 A.M. To evening of 9 June 1934 - started
 an excursion NW from Madisonville to Sweetwater and
 then to Minnie's farm NE of Sweetwater.

Started just Athens 3 mi. NW of Madisonville in NW edge
 of valley before reaching Tellus range of hills.

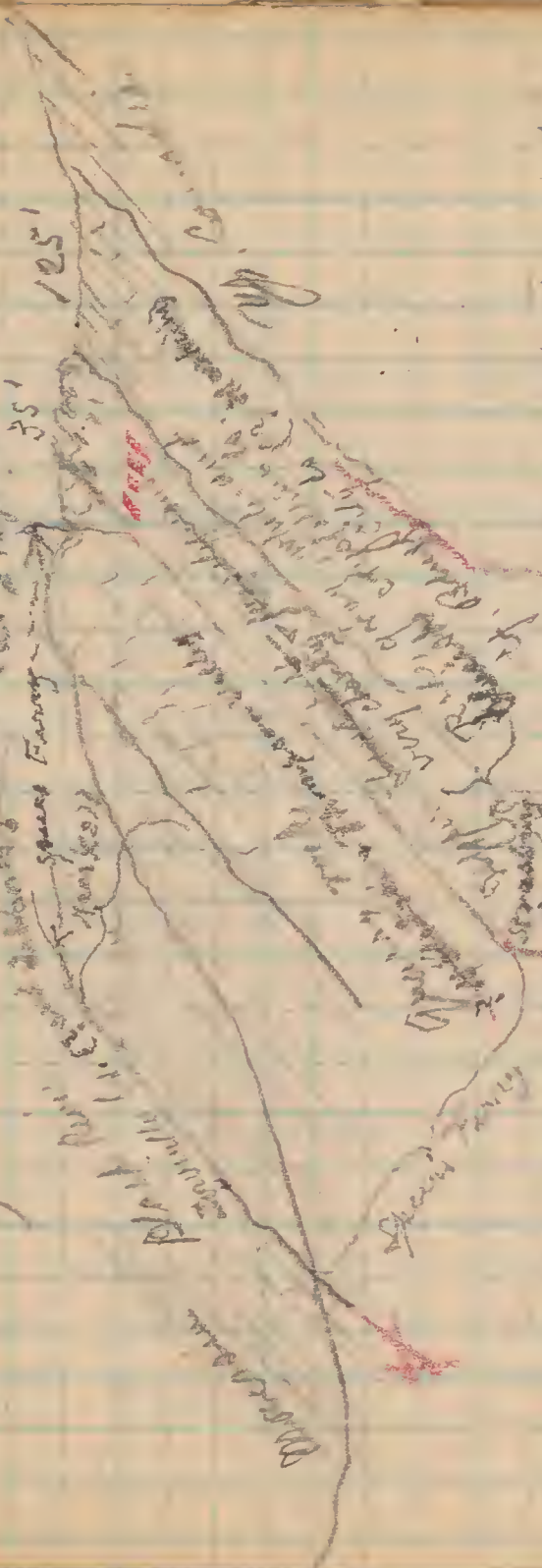
Next again identified mine collected from the Lower
 ? Otter in the syphonium between the two ranges of Tellus
 hills. This mine extension of Moon Bend SW across lower
 road toward Dancing Creek from the point 3 miles NE
 at which Keith's map (London sheet) terminates the Otter.
 In general the results of previous years work with Butts in
 this faulted area were sustained.

After lunch in Sweetwater and delay by bad rain
 proceeded to the Bill Mining farm (now owned by other parties)
 Here looked particularly into the lower shales of the Otter
 and their relations to the underlying marble that supports
 the manganese ^{formation} ^{of the Sweetwater region}
 and which ^{is} ^{superior} to the Tellus. The Otter cleat
 was laid on the eroded main surface though
 it also appears clear that a large part of the massive
 of the underlying surface has subsided through
 more recent underground solution of the limestone and
 sinking of the shale into the solution channels &
 depressions.

Interesting fossil collections were made from 2 or 3
 zones of yellow layers of the soft yellow shale which
 makes up the lower ^{50 ft.} of the Otter; above it
 conglomeratic basal limestone from which also some
 fossils were again obtained. The most interesting
 fossils in the shale (25-50 ft above base of Otter)
 is a Blasium truncatum brugii resembling in its general
 character exceedingly of Siphonophora.

After supper took Memphis steamer on way to
 Blount Rock, Ark, arriving there next day 2 P.M.

April 24 1927
Sagittaria beds in Mancos Formation
west of Gate City, W. Va. 7 mi. S.E. of Ripon
Square Ferry 35'



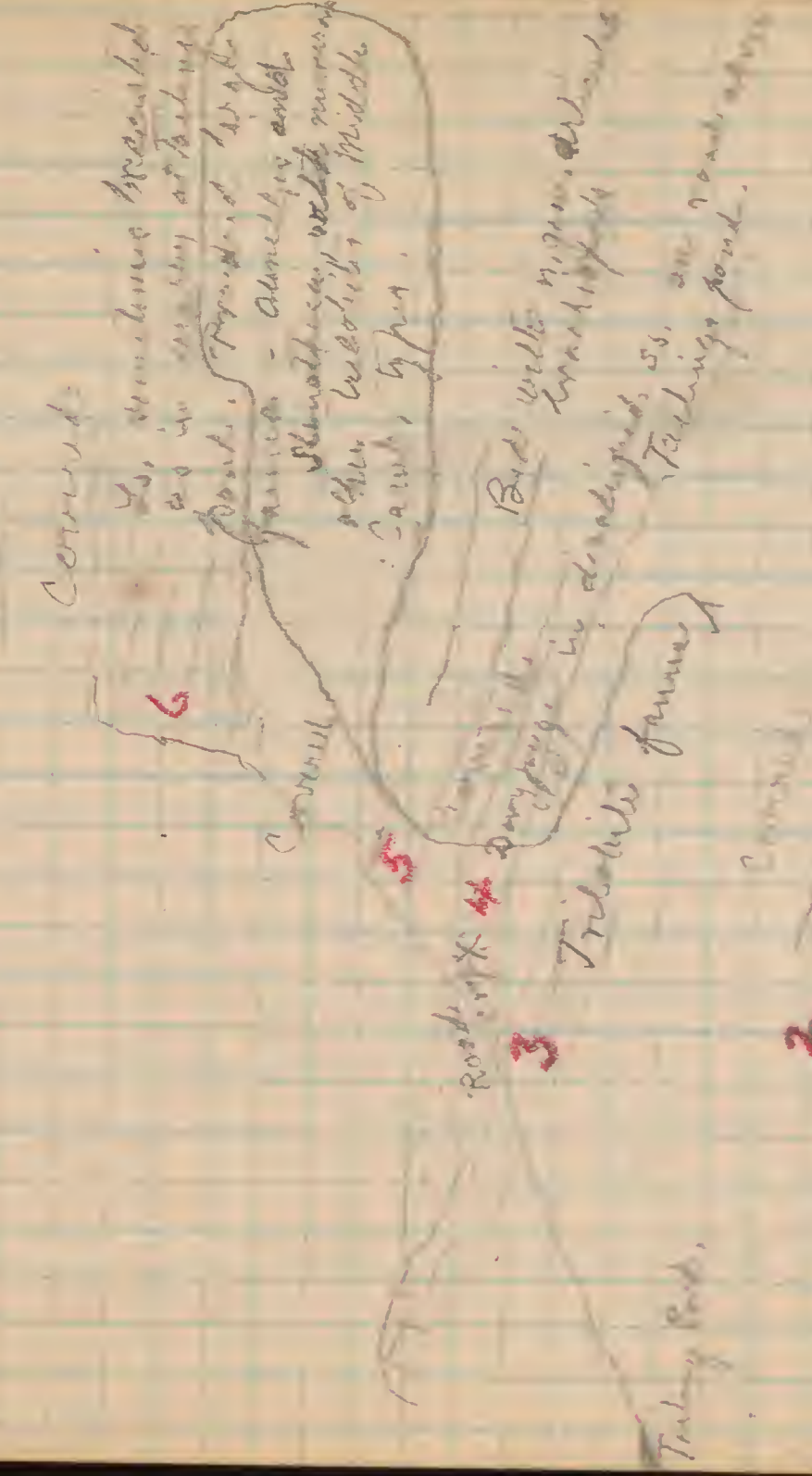
Collected out of the shaly part but did not search the underlying
limestones.

Includes shaly very fossiliferous layers

Austinsville, Va. appears 4/19/50
 with Balls, Tuckert, Brown, Brown, etc.
 Sections of Cambrian beds

Photo. Up. Cambrian base of 8
 with Edgewood single. Shale, A, with Edgewood

7 300' ±, Bull Run Rd.

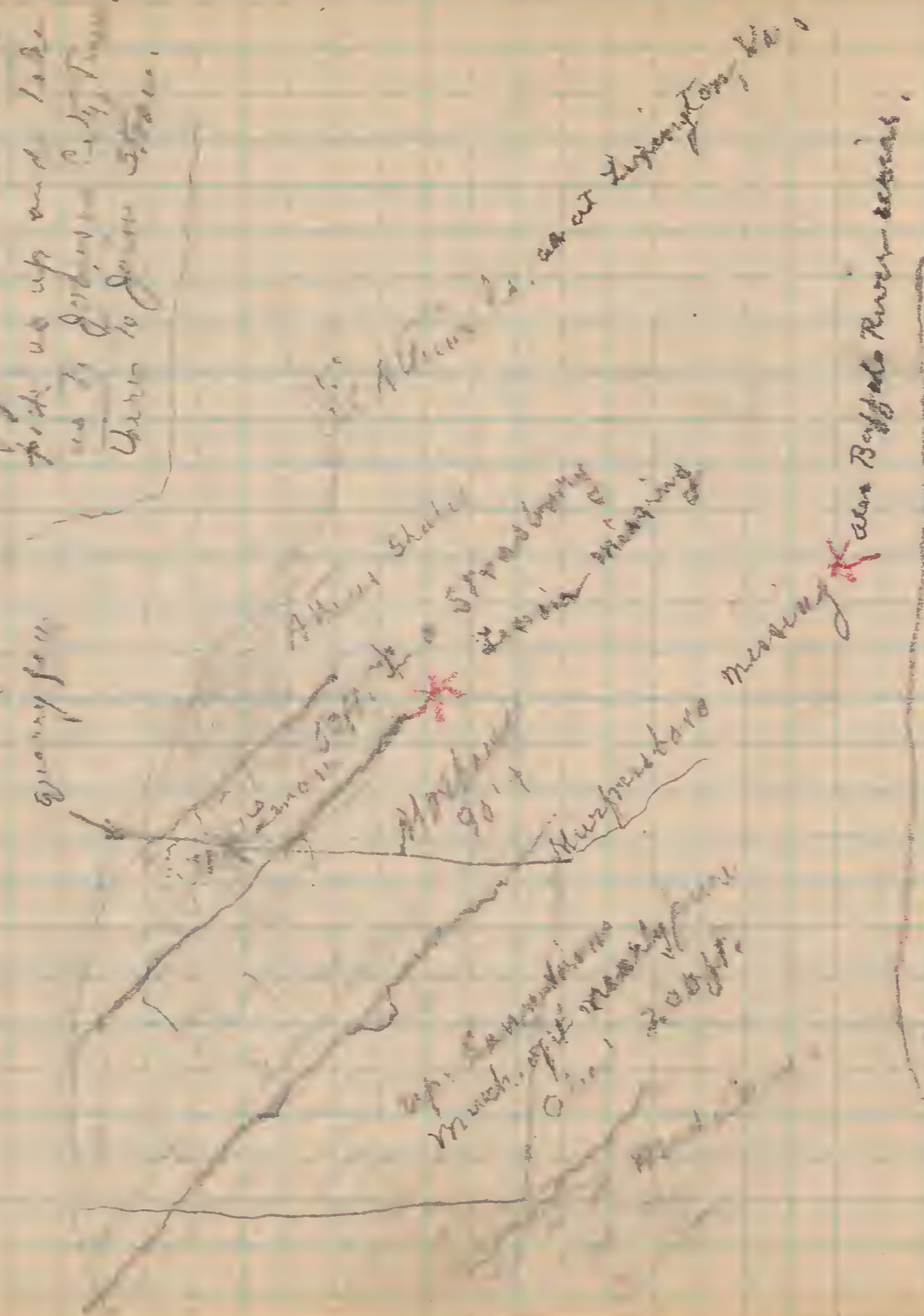


Study 4, on railroad west of Balls

The numbers in red indicate
 supposed sequence of beds
 and Jarman 3 also in vicinity.
 i.e. local and 8 highest of
 Cambrian zone.



In the quarry at Marlinton, Va., Sand, April 12th/31
 with fossils. Working for Balls & Bird to
 pick us up and take
 us to Berkeley Co. by train.
 Then to Jones Station.



See other sections at Marlinton Va.
 in V.B. 24, p. 57 & V.B. 26, p. 13.

92

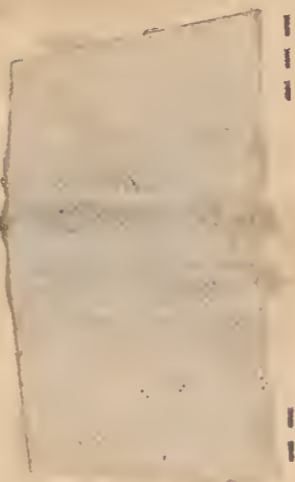
98

99

Marble specimens that may be wanted in 1928

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

| dips | 0° - 70° | At 70° dips 500 ft. = 470 ft. 100 ft. = 94 ft. |
|----------|----------|--|
| " 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 |



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