

Dona E.O. Ulrich
Nb. 19.
Central Pennsylvania.
97c 1909, 1916.

nia

1916

U. S. GEOLOGICAL SURVEY

19

GEORGETOWN RANCH

LOOSE-LEAF FIELD NOTEBOOK

Allentown, Pa.:

- section 41
- north of Catasauqua, near - section 48

Axeman ls.:

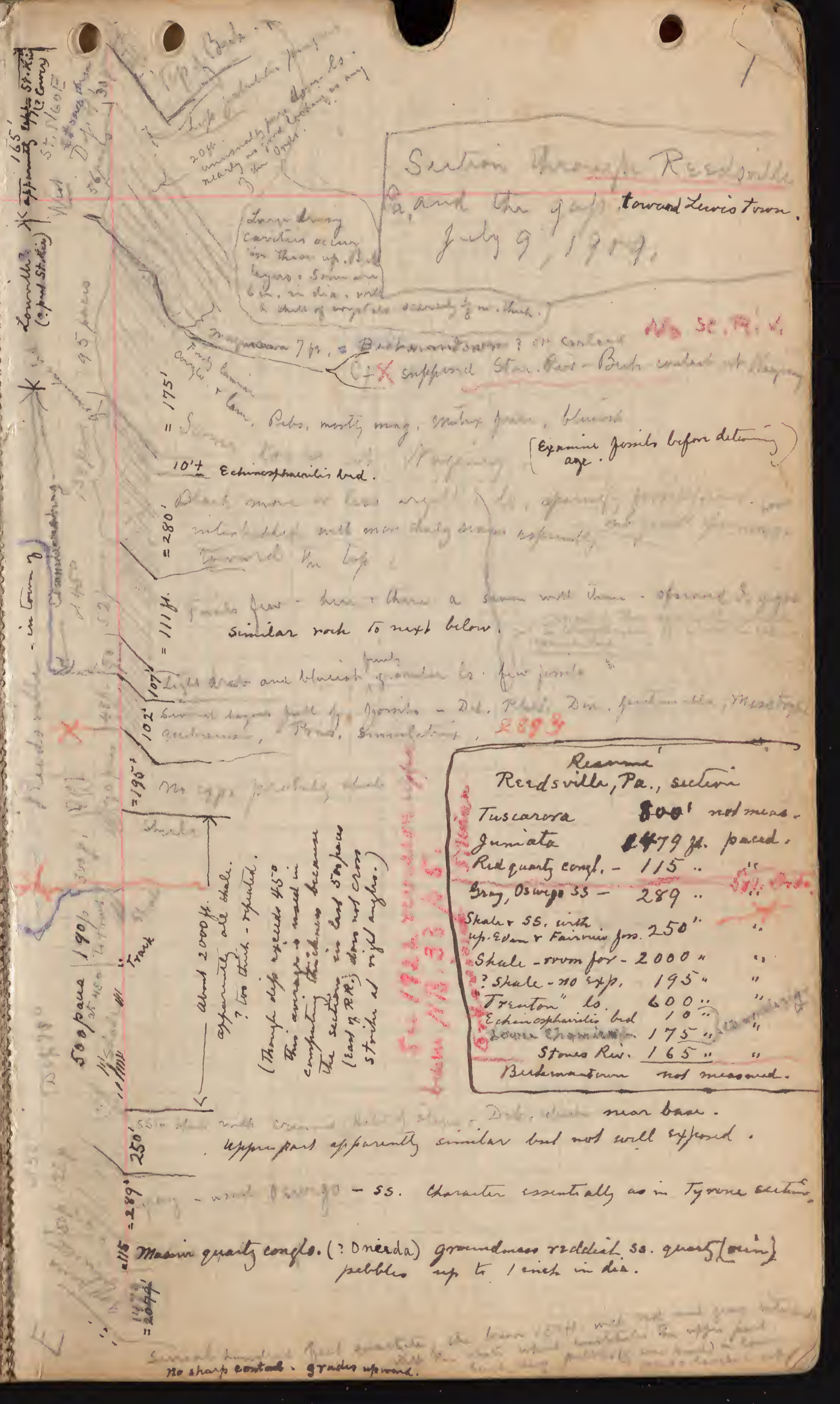
- in section, Roaring Spring to Martinsburg, Pa. 27
- in generalized section between Bellefonte and Pleasant Gap and Lemont . . . 19

Bald Eagle Mt. - in section at Bellefonte . . . 9

? Becraft - in section, east of Hollidaysburg, from reservoir to wagon road and railroad cuts in face of hill 33

Beekmantown ls.:

- in section, Reedsville and gap through Lewistown, Pa. 1
- in section, Naginey Station and up valley from Reedsville 5
- Beekmantown-Stones River contact (supposed) at Naginey - compare hed in section at Reedsville with 1
- Beekmantown or upper Stones River - in section at Cambria Iron Co. quarry at Naginey 3
- in section at Pleasant Gap - "White Rock" quarries 15
- upper - in section at Oakhall 17
- in generalized section between Bellefonte and Pleasant Gap and Lemont 19
- in section, Shoenberger to Birmingham . . . 23
- in section, Franklin Forge to View Point . . . 25
- in section, north and south from Roaring Spring and east to Martinsburg 27
- of Bellefonte region, - may be in section at Clover Creek, 2 1/2 miles east of Martinsburg 29
- in section, Loysburg, from gap westward . . . 31
- in section, Rutherford, 5 miles east of Harrisburg 35
- of Chambersburg area - beds of Kokendorfer quarries at Harrisburg suggest 37
- in section south from Dauberville through Leesport 39
- in section north of Catasauqua, near Allentown 48



Section through Reedsville and the gap toward Lewistown. July 9, 1909.

Reedsville, Pa., section

Tuscarora	800'	not measured.
Juniata	2479 ft.	paces.
Red quartz congl.	115'	"
Bryn, Oswego ss.	289'	"
Shale & ss. with up. Edon & Fairview fossils	250"	"
Shale - room for	2000"	"
? Shale - no exp.	195"	"
Trenton ls.	600"	"
Echinophthalmitis bed	10"	"
Lower Champlain	175"	"
Stones Riv.	165"	"
Beekmantown		not measured.

165' (approx. 110' core) 57, 1160 F

Large druse cavities occur in these up. beds layers. Some are 6 in. in dia. with a shell of crystals scarcely 1/2 in. thick.

Thin beds of blueish granular ls. few fossils

Some more or less argill. ls. especially toward the top

Similar rock to next below.

Light beds and bluish granular ls. few fossils

Several layers full of fossils - Del. P. ls. 2m. from top, Mesotrypa quadrans, P. D., Simulium, 2893

500 paces at 40' paces

190'

175'

280'

111 ft.

107'

102'

198'

250'

289'

115'

about 2000 ft. apparently all shale. ? too thick - reported. (Though dip exceeds 45° this average is used in computing thickness because the section is but 50 paces (east of P.R.) does not cross strike of right angle.)

500 paces at 40' paces

190'

175'

280'

111 ft.

107'

102'

198'

250'

289'

115'

Massive quartz congl. (? Oneida) groundmass reddish ss. quartz pebbles up to 1 inch in dia.

No sharp contact - grades upward.

- Bellefonte, Pleasant Gap, and Lemont - generalized section 19
- Bellefonte dol.:
 in generalized section - Bellefonte, Pleasant Gap, and Lemont 19
 in section, Roaring Spring to Martinsburg 27
- Bellefonte, Pa.:
 section at - Butts and Ulrich 9,13
 Ozarkian in section at Allentown about same as at 41
- Bellefonte region - middle Beekmantown of - may be in section at Clover Creek, 2 $\frac{1}{2}$ miles east of Martinsburg 29
- Birmingham, Tyrone to, along Pa.R.R. - section - Butts's section of gives measurements 21
 to Shoenberger - section 23
- Birmingham quarry - in section along Pa.R.R., Tyrone to Birmingham 21
- Black River - in section, Franklin Forge to View Point 25
- Black shale - in section NW corner of Chambersburg wagon road crossing railroad near tank 49
- Butts:
 estimates by:
 in succession at Hollidaysburg 1
 section at Bellefonte 13
 of Trenton - section at Oakhall 17
 Roaring Spring to Martinsburg 27
 see him for measurements along Pa.R.R., Tyrone to Birmingham - section 21
- with Ulrich:
 at Bellefonte section 9,13
 section, Roaring Spring to Martinsburg 27
 section east of Hollidaysburg, from reservoir to wagon road and railroad cuts in face of hill 33
 (has more detailed section of Helderbergian of this section)
 at section west slope of Tuscarora Mt. from McConnellsburg to summit, along Mercersburg pike 43
 Cumberland Valley section - railroad cut at Greencastle 45
 Cambria Iron Co. quarry, Naginey - section 3

Section through Reidsville Pa. and the gap toward Lewis town. July 9, 1909.

200' unconformity nearly as fine looking as any

Thin dry carter's oolite in thin up. bed layers. Some are 6 in. in dia. with a shell of oolite scarcely to be seen.

Beekmantown? or contact

supposed Stones Riv. - Both contact at Naginey

Peb. mostly mag. entire piece, bluish

Echenocphacalis bed.

Dark more or less argill. ls. sparsely fossiliferous, interbedded with more shaly sand especially toward the top.

Fossils few - here & there a same with them - observed 3, eggs similar rock to next below.

Light blue and bluish granular ls. few fossils

Several layers full of fossils - Dol. Phos. Dim. granular, Mesozoic, granular, Prod. granular, 2899

No exp. probably chert

about 2000 ft. apparently all shale. ? too thick - repeated.

(Though dip exceeds 45° the average is used in computing thickness because the section in last 500 paces (East of R.R.) does not cross strike at right angles.)

500 paces 190 p. to town

111 ft.

250' - with room for Beekmantown, Dol. chert near base. Upper part apparently similar but not well exposed.

Massive quartz congl. (? Oneida) groundmass reddish ss. quartz (crin.) pebbles up to 1 inch in dia.

No sharp contact - grades upward.

14' = 204 ft.

500 paces

190 p. to town

111 ft.

250' - with room for Beekmantown, Dol. chert near base. Upper part apparently similar but not well exposed.

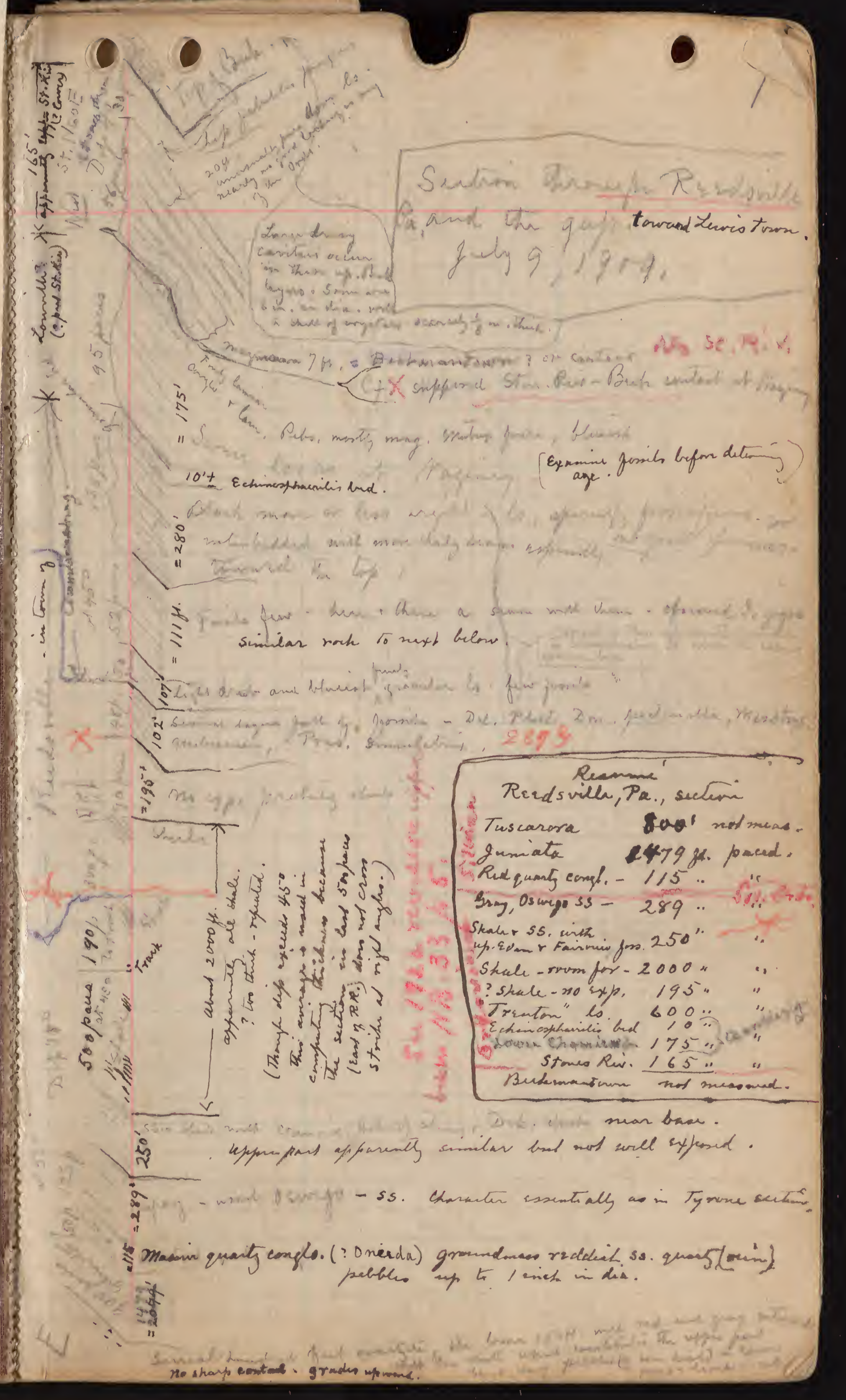
Massive quartz congl. (? Oneida) groundmass reddish ss. quartz (crin.) pebbles up to 1 inch in dia.

No sharp contact - grades upward.

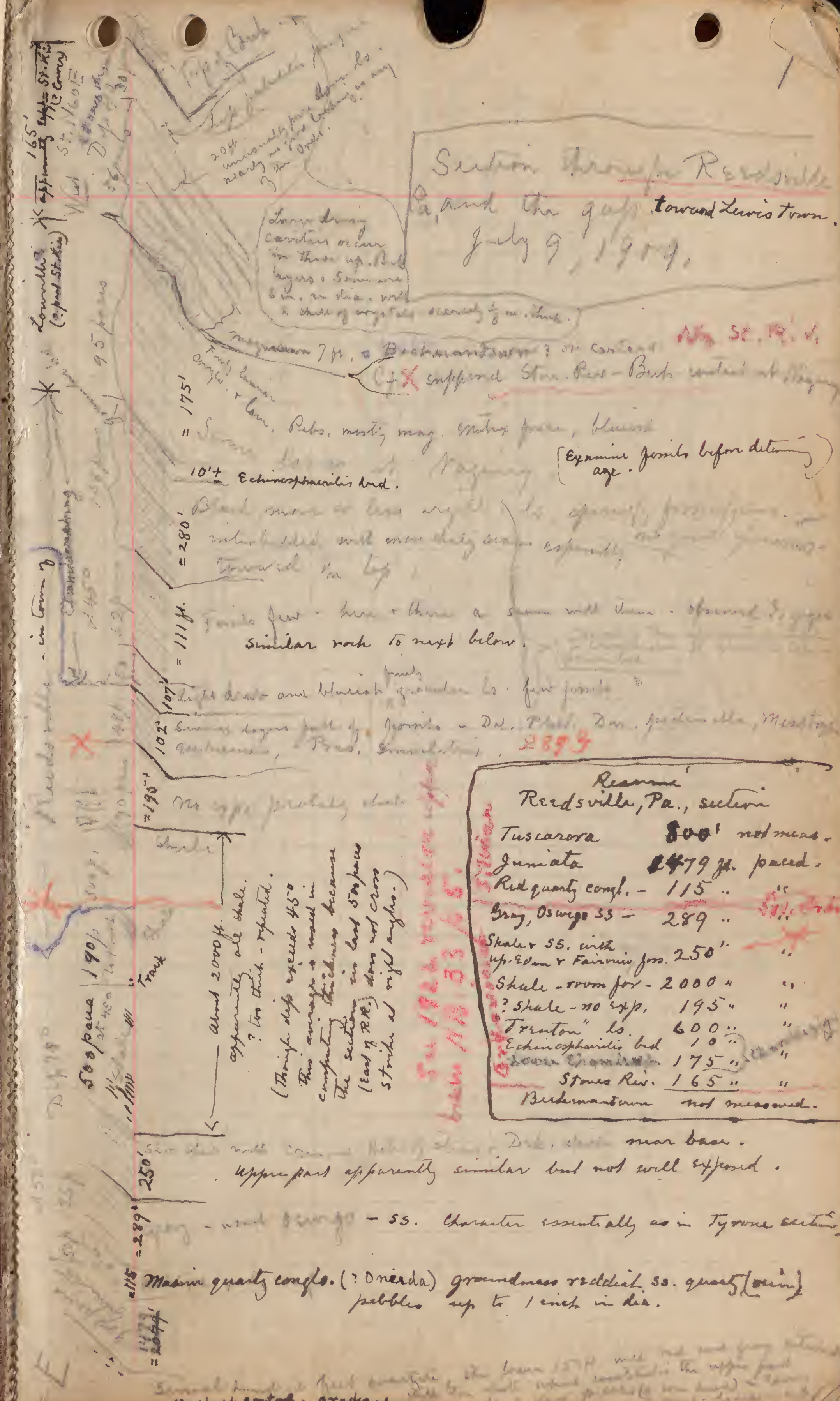
14' = 204 ft.

Revised Reidsville, Pa., section	
Tuscarora	800' not meas.
Juniata	2479 ft. paced.
Red quartz congl.	115 "
Gray, Oswego ss	289 "
Shale - room for	2000 "
? Shale - no exp.	195 "
Trenton ls	600 "
Echenocphacalis bed	10 "
Lower Chambersburg	175 "
Stones Riv.	165 "
Beekmantown	not measured.

Cambrian ss. - in section Shoenberger to Birmingham - so called by Pa. geologists - may be Juniata or Tuscarora 23
 Catsauqua, north of, near Allentown - section 48
 Cayuga of Stose - in succession at Hollidaysburg; 2
 Chambersburg, Pa.:
 Stonehenge-Conococheague section in railroad cut about 5 miles south of 47
 NW. corner of - wagon road crossing railroad at water tank - section 49
 Chambersburg ls.:
 in section, Tuscarora Mt., between McConnellsburg and summit, along Mercersburg pike 43
 bed in section at Reedsville apparently equivalent to 1
 Chazy:
 middle - in section at Pleasant Gap "White Rock" quarries 15
 middle, and Lenoir, at Plattsburg - middle Stones River in section, Franklin Forge to View Point, exceedingly like 25
 Franklin Forge - View Point section important in middle Chazy distribution 25
 Chepultepec zone with fossils - in section, Roaring Spring to Martinsburg 27
 Christiana ls. - in section, Cumberland Valley railroad cut at Greencastle, Pa. 45
 Clinton:
 in succession at Hollidaysburg 2
 Rochester part of - in section east of Hollidaysburg from reservoir to wagon road and railroad cuts in face of hill 33
 Clover Creek, $2\frac{1}{2}$ miles east of Martinsburg - section - with Butts 29
 Coeymans - in section, east of Hollidaysburg - from reservoir to wagon road and railroad cuts in face of hill 33
 Collie, G.L. - estimates by (Bull. G.S.A. vol. 14, 1903, pp. 410-11) - in section at Bellefonte 13
 Conococheague:
 dolomite in section, Shoenberger to Birmingham, suggests 23
 in section south from Dauberville through Leesport 39
 in section at Allentown 41
 upper = lower Little Falls dolomite - in section at Allentown 41



Fossil zones I-VI - in section at Bellefonte	13
Franklin Forge to View Point - section	25
Franklin Forge quarry - in section, Franklin Forge to View Point	25
Frankstown branch of Juniata - in section, Franklin Forge to View Point	25
Ferndale, Pa. - in section at Allentown	41
Greencastle, Pa. - Cumberland Valley railroad cut at - section - with Butts	45
Greencastle ls. - in section, Cumberland Valley railroad cut at Greencastle	45
Greencastle cut - limestone in section NW. corner of Chambersburg, wagon road crossing at water tank, evidently represents heavy-bedded ls. in	49
Greencastle member, base of - shaly limestone in section NW. corner of Chambersburg equals	49
Harrisburg, Pa., $\frac{1}{2}$ mile east of D.C. Koken-dorfer quarries - section	37
Helderberg:	
lower - in succession at Hollidaysburg	2
base of - in section, east of Hollidaysburg, from reservoir to wagon road and railroad cuts in face of hill	33
Butts has more detailed section	33
Hollidaysburg, Pa.:	
succession at	2
east of, from reservoir to wagon road and railroad cuts, in face of hill - section	33
Jordans Knob - in section, west slope of Tuscarora Mt. between McConnellsburg and summit, along Mercersburg pike	43
Juniata ss.:	
in section at Reedsville	1
in section, Tyrone to Birmingham, along Pa.R.R.	21
may be - in section, Shoenberger to Birmingham	23
in section, Franklin Forge to View Point,	25
in section, west slope Tuscarora Mt. between McConnellsburg and summit, along Mercersburg pike	43
in section at Bellefonte	9



? Jura-Trias - in section, Rutherford, 5 miles east of Harrisburg 35

Kimmswick horizon - in section, Franklin Forge to View Point 25

Kirk:

collected fossils - section at Bellefonte 9

section in quarry (Lowville) copied by 9

O. disjuncta found by may be Eocyliopterus - section, Bellefonte, Pleasant Gap, and Lemont 19

to make additional sections north of Roaring Spring 27

Knox, Copper Ridge - in section, Roaring Spring to Martinsburg 27

Kokendorfer quarries, 1/2 mile east of Harrisburg - section 37

Kloedenella fauna - in section, east of Holidaysburg from reservoir to wagon road and railroad cuts, in face of hill 33

Lebanon:

fossils in section at Cambria Iron Co. quarries at Naginey suggest 3

lower part of Cambria Iron Co. quarry probably included in 5

Leesport to Ontelaunee Station, south from Dauberville - north from Reading - section, 39

Lemont, Pleasant Gap, and Bellefonte - generalized section 19

Lenoir and middle Chazy at Plattsburg - middle Stones River in section, Franklin Forge to View Point, like 25

Lewistown, Pa.:

section at Naginey Station up valley from Reedsville, near 5

Lewistown, white, sheeted - in section along Pa.R.R., Tyrone to Birmingham 21

Little Falls dol.:

lower = upper Conococheague - section at Allentown 41

Lowville:

? - in section at Reedsville 1

in section at Pleastnt Gap, "White Rock" quarries 15

in generalized section, Bellefonte, Pleasant Gap, and Lemont 19

Section through Reedsville and the gap toward Lewis town. July 9, 1909.

Large drag cavities occur in these up. bed layers. Some are 6 in. in dia. with a shell of crystals scarcely 1/2 in. thick.

Echinostaurites bed.

Fossils few - here & there a specimen with thin - observed in grey similar rock to next below.

No fossils probably shale

apparently all shale. ? too thick - repeated. (Though dip exceeds 45° this average is made in computing thickness because the section is laid 5° above (East of RR.) does not cross strike at right angles.)

Upper part apparently similar but not well exposed.

Massive quartz congl. (? Ononda) groundmass reddish ss. quartz (main) pebbles up to 1 inch in dia.

No sharp contact. grades upward.

Reedsville, Pa., section		
Tuscarora	800'	not meas.
Juniata	2479'	paced.
Red quartz congl.	115'	"
Gray, Oswego ss	289'	"
Shale + ss. with sp. Eden + Fairview foss.	250"	"
Shale - room for	2000"	"
? Shale - no exp.	195"	"
Trenton ls.	600"	"
Echinostaurites bed	10"	"
Lower Cambrian	175"	"
Stones Riv.	165"	"
Berkmanstown	not measured.	

Lowville cont'd.:

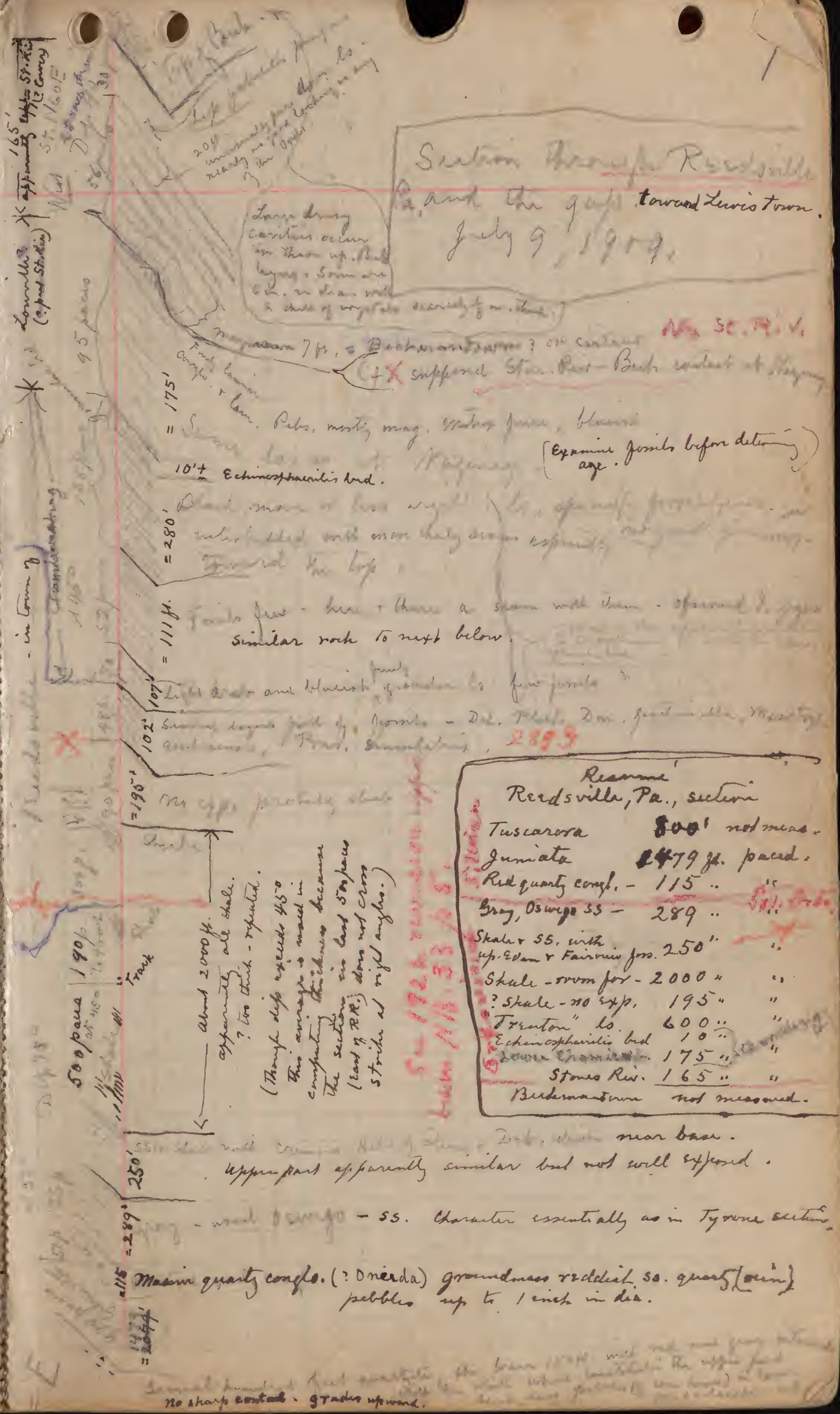
- as at Oakhall and Lemont sections - in section along Pa.R.R., Tyrone to Birmingham 21
- in section, Birmingham to Shoenerger 23
- in section, Roaring Spring to Martinsburg 27

Lorraine:

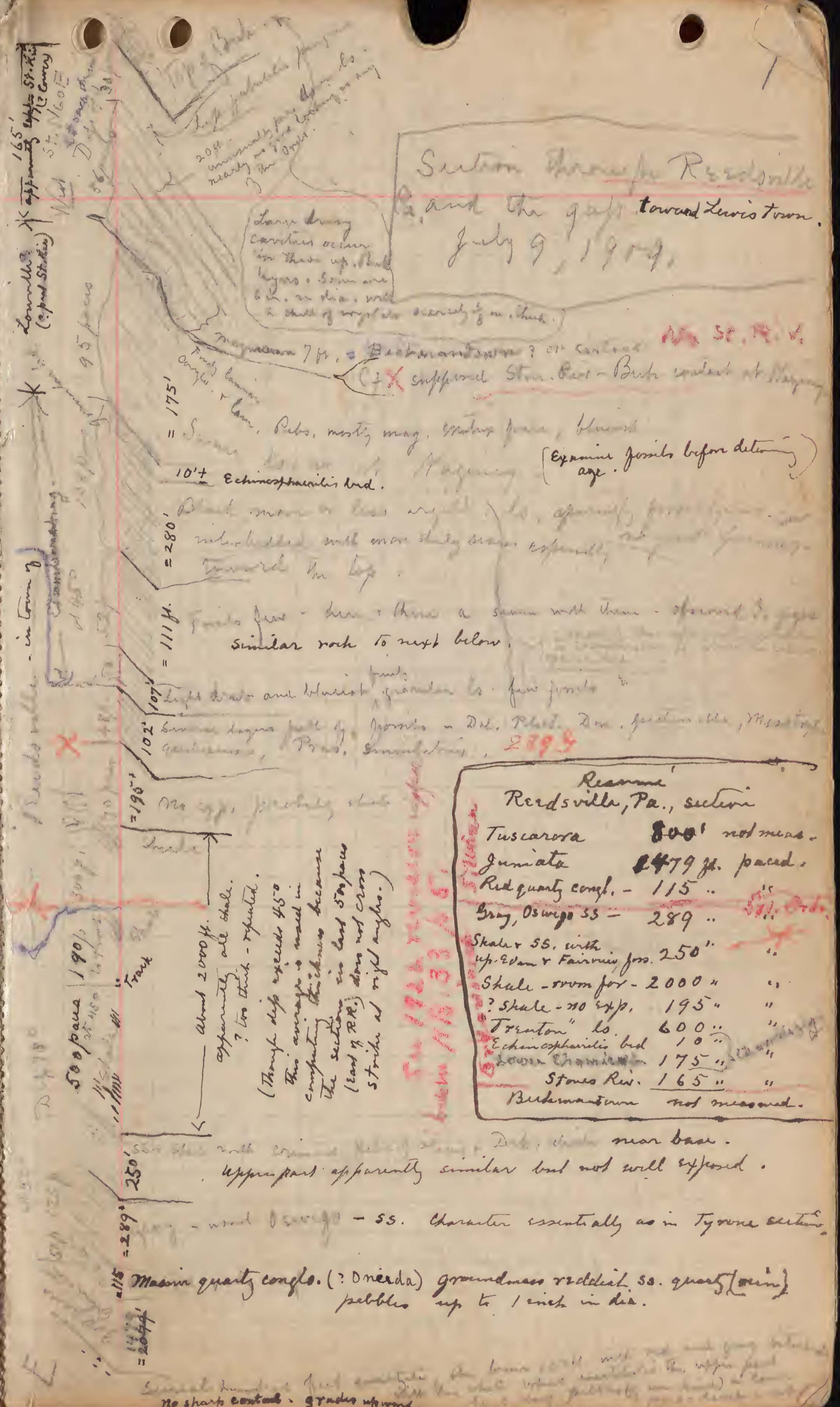
- in section, Franklin Forge to View Point 25
- Loysburg, Pa. - from gap westward - section 31
- McConnellsburg to summit of Tuscarora Mt., along Mercersburg pike - section 43

McMillan:

- base of, perhaps - in section along Pa.R.R. Tyrone to Birmingham 21
- lower - in section 3 miles south of Danville 52
- Martinsburg, Pa.:
2 1/2 miles east of - section across Clover Creek - with Butts 29
- Martinsburg sh.:
in section at Kokendorfer quarries, east of Harrisburg 37
- in section, Rutherford, 5 miles east of Harrisburg 35
- base of typical - in section, north of Catasaqua near Allentown 48
- Mercersburg pike - along, from McConnellsburg to summit of Tuscarora Mt. - section 43
- Naginey, Pa. - Stones River-Beekmantown contact (supposed) at - compare bed in section at Reedsville with 1
- Naginey Station, up valley from Reedsville, near Lewistown - section 5
- Naginey - Cambria Iron Co. quarry at - section 3
- National Lime Co quarries, Sheeder, Pa. - sequence at 51
- New Enterprise road, forks of, going south to Snake Spring Valley - in section, Loysburg from gap westward 31
- New Scotland - in section, east of Hollidaysburg, from reservoir to wagon road and railroad cuts in face of hill 53



- Nittany Furnace House, opposite - in section at Bellefonte 13
- Nittany dol.:
 - in generalized section between Bellefonte and Pleasant Gap and Lemont 19
 - in section, Roaring Spring to Martinsburg . 27
- Oakhall, Pa., 1 mile north of - section 17
- Ontelaunee Station, Leesport to, south from Dauberville - north from Reading - section . 39
- Ordovician ls. - in section, Rutherford, 5 miles east of Harrisburg 35
- Oriskany - in section, east of Hollidaysburg, from reservoir to wagon road and railroad cuts in face of hill 33
- Oswego ss.:
 - in section at Reedsville 1
 - in section at Bellefonte 9
 - in section, Tyrone to Birmingham, along Pa.R.R. 21
 - in section, Franklin Forge to View Point . 25
 - in section, Loysburg, from gap westward . 31
 - in section, south from Dauberville through Leesport 39
 - in section, west slope of Tuscarora Mt. between McConnellsburg and summit, along Mercersburg pike 43
- Ozarkian:
 - in section at Bellefonte 13
 - in section at Pleasant Gap - "White Rock" quarries 15
 - in section at Allentown - more like Shoenberger section than the true Conococheague - about as at Bellefonte 41
 - species - fossils in section, Roaring Spring to Martinsburg, similar to 27
- Paxtang Park - in section, D.C. Kokendorfer quarries, 1/2 mile east of Harrisburg 37
- Pennsylvania R.R. - Tyrone to Birmingham along - section - Butts's section of gives measurements 21
- Pennsylvania Reports, F3 of - compare section at Naginey Station, up valley from Reedsville with 5
- Pleasant Gap, Bellefonte, and Lemont - generalized section 19
- "White Rock" quarries at - section 15



Section through Reedsville
and the gap toward Lewis town.
July 9, 1909.

Reedsville
Reedsville, Pa., section

Tuscarora	800'	not meas.
Juniata	2479 ft.	paced.
Red quartz congl.	115 ..	"
Gray, Oswego ss	289 ..	"
Shale + ss. with up. Eden + Fairview foss.	250"	"
Shale - room for	2000"	"
? Shale - no exp.	195"	"
Toronton' ls.	600"	"
Echinophanid bed	10"	"
Lower Champlain	175"	"
Stones Riv.	165"	"
Berksmanstown		not measured.

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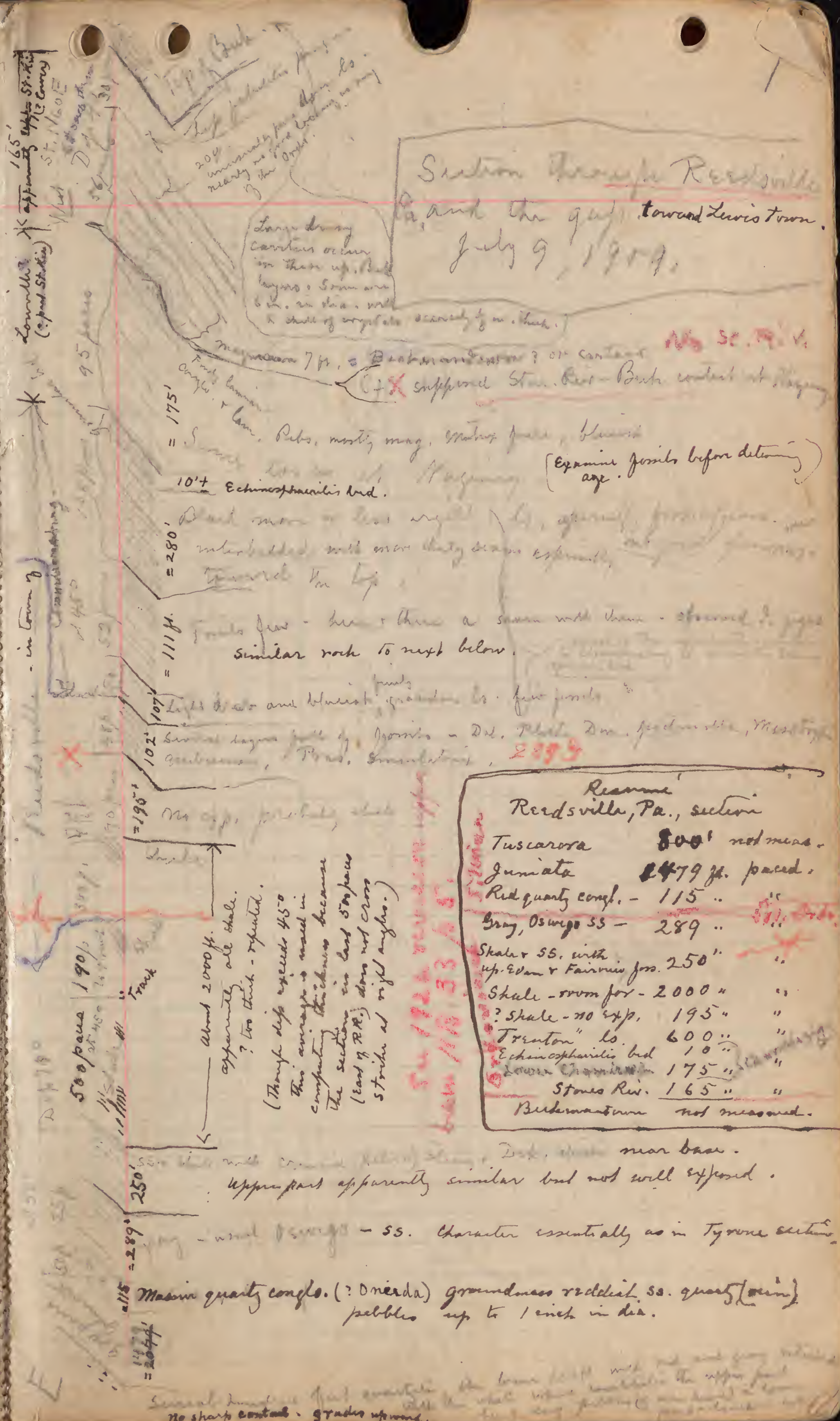
Mariopteris
 Neuropteris biformis Lesquereux (Tennessee formation)

- Nittany Furnace House, opposite - in section
 at Bellefonte 13
- Nittany dol.:
 in generalized section between Bellefonte
 and Pleasant Gap and Lemont 19
- in section, Roaring Spring to Martinsburg . 27

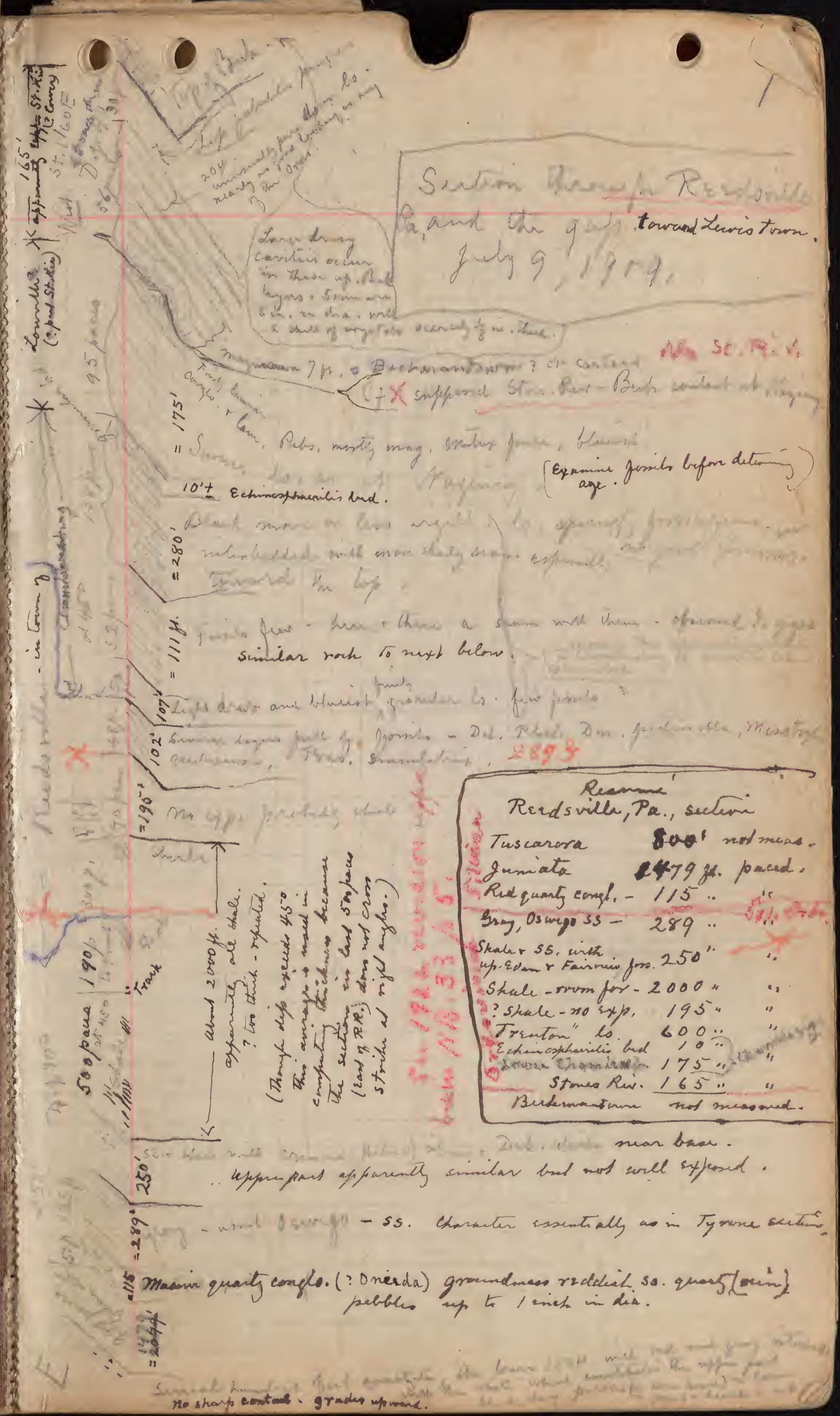
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 * Oppenheimer
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Quarries:

- Cambria Iron Co., at Naginey - section . . . 3
- (Lowville) section in - copied by Kirk . . . 11
- "White Rock" - in Pleasant Gap - section . . . 15
- in section along Pa.R.R., Tyrone to Bir-
mingham 21
- in section, Franklin Forge to View Point . . . 25
- Kokendorfer's, 1/2 mile east of Harrisburg -
section 37
- in section south from Dauberville 39
- Reading, Pa. - north from - south from Dauber-
ville through Leesport to Ontelaunee
Station - section 39
- Reading R.R. - in section Kokendorfer quar-
ries, east of Harrisburg 37
- in section south from Dauberville 39
- Reedsville, Pa.:
section at Naginey Station up valley from -
near Lewistown 5
- Reedsville and gap through Lewistown -
section 1
- Reedsville sh. - in section, Franklin Forge to
View Point 25
- Reedsville Stones River zone 1 - Bryozoa in se-
quence at National Lime Co. quarry possibly
same as 41
- Roaring Spring, Pa., north and south from, and
east to Martinsburg - section 27
- Rochester Ostracoda - in succession at Holli-
daysburg 2
- Rochester part of Clinton - in section, east of
Hollidaysburg, from reservoir to wagon
road and railroad cuts in face of hill . . . 33
- Rutherford, 5 miles east of Harrisburg - section, 35
- Schuylkill River - in section south from Dauber-
ville through Leesport 39
- Sheeder, Pa. - National Lime Co. quarries at -
sequence 51

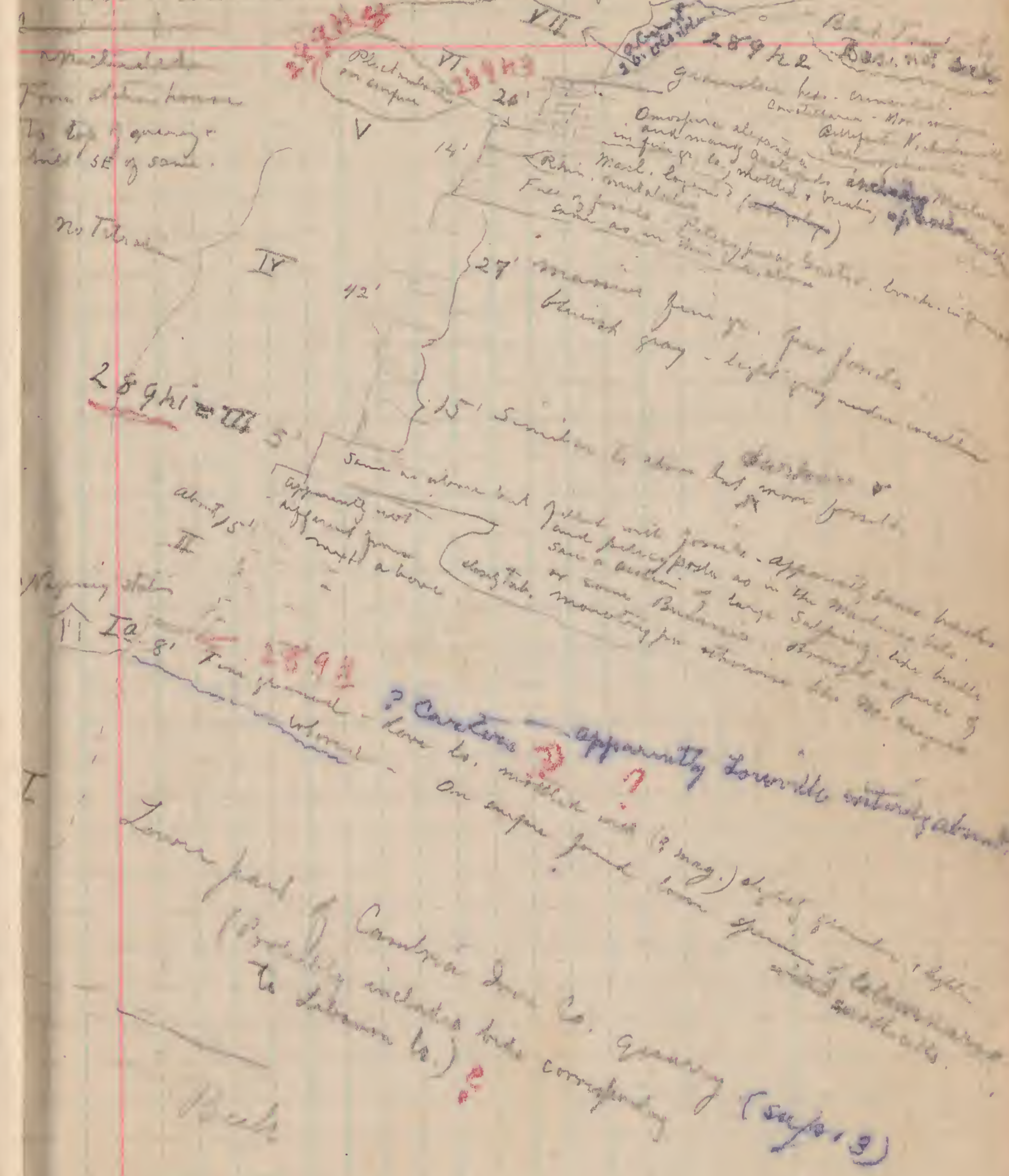


- Stones River cont'd.:
- middle third of quarry south from Dauberville through Leesport reminds of39
 - "upper Middle" - in sequence at National Lime Co. quarry, Sheeder, Pa. 51
 - zone 1 of Reedsville - Bryozoa of possibly same as in sequence at National Lime Co. quarry at Sheeder 51
 - Stose - Cayuga of - in succession at Hollidaysburg 2
 - Trenton ls.:
 - in section at Reedsville 1
 - black - in section at Haginey Station, up valley from Reedsville 5
 - in section at Pleasant Gap "White Rock" quarries 15
 - in generalized section - Bellefonte, Pleasant Gap, and Lemont 19
 - in section, Tyrone to Birmingham, along Pa.R.R. 21
 - in section, Loysburg, from gap westward . . .31
 - ? - in section, across Clover Creek, 2 1/2 miles east of Martinsburg 29
 - in section, north and south from Roaring Spring and east to Martinsburg 27 - Tuscarora:
 - in section at Reedsville 1
 - in succession at Hollidaysburg 2
 - in section, Tyrone to Birmingham, along Pa.R.R. 21
 - may be - in section, Shoenberger to Birmingham 23
 - in section, Franklin Forge to View Point . . . 25
 - in section at Bellefonte 9 - Tuscarora Mt. - between McConnellsburg and surmit, along Mercersburg pike - section 43
 - Tyrone to Birmingham, along Pa.R.R. - section - Butts's section of gives measurements . . . 21
 - Tyrone Forge - in section along Pa.R.R., Tyrone to Birmingham 21
 - ? Utica grading into Trenton - in section, Roaring Spring to Martinsburg 27
 - View Point, Franklin Forge to - section 25
 - "White Rock" quarries - Pleasant Gap - section . 15
 - Wherry's loc. 4524 - in section, Allentown 41



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Section at Nazarey Station 2 or 4 m. up valley
near Davidson. Partly 35#



Viewed as a mappable quantity beds I-VIII (incl.) should constitute a single unit which might be named the Nazarey limestone

(Compare with F3 of Pa. reports)

6

7

Allen

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[Faint blue handwritten scribbles]

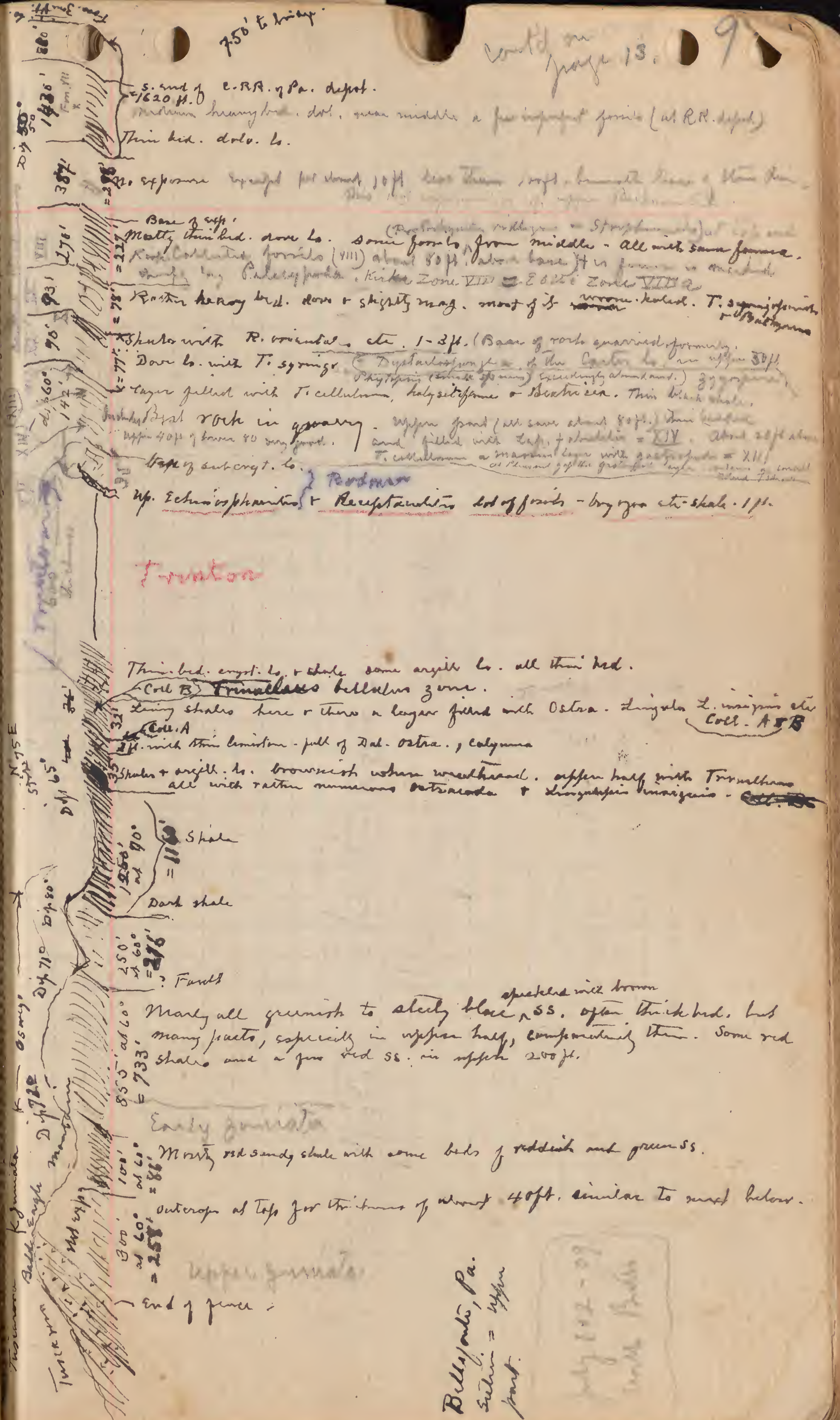
[Faint blue handwritten scribbles]

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Faint handwritten notes and labels, possibly describing geological features or locations. Some words are difficult to decipher but seem to include 'Bellefonte' and 'Pottsville'.

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S. end of e. RR. of Pa. depot.
1620 ft. medium heavy bed. dol. near middle a few important fossils (at RR. depot)
Thin bed. dol. ls.

387' exposure exposed for about 100 ft less than 100 ft. beneath base of thin bed.
This is the same as the Trenton.

Base of exp.
Mottly thin bed. dol. ls. Some fossils from middle - all with same fauna.
Reticularia fossils (VIII) about 80 ft below base of Trenton ls. in fauna is included
along by Calymene. Kirk's Zone VII = 2000' Zone VIII = 2000'

371' Rather heavy bed. dol. & slightly mag. most of it brown. colored. T. spongiiformis
Reticularia

364' Shales with R. ovalis etc. 1-2 ft. (Base of rock quarried formerly.)
Dol. ls. with T. spongi. (Dystaraspis etc. to the Trenton ls. are upper 30 ft)
Phytoph. (small sp. many) exceedingly abundant. gygones

357' Layer filled with T. cellulosa, Calymene & Bactaria etc. Thin black shale.
Inclined to rock in quarry. Upper part (all same about 80 ft) thin bedded
upper 40 ft of lower 80 very good. and filled with T. cellulosa = XII. About 20 ft above
T. cellulosa a massive layer with gastropods = XIII.
at base of Trenton of the Trenton ls. contains small
fossils.

350' Base of Trenton ls.
Up. Echinisphaerites & Reticularia lot of fossils - Bryozoa etc. shale. 1 ft.

Trenton

Thin bed. argill. ls. & shale some argill. ls. all thin bed.
Coll. B. Trematites bellulus zone.

343' Long shales here or there a layer filled with Ostra. Lingula L. insignis etc.
Coll. A & B

336' Thin bed. ls. full of Dal. Ostra., Calymene
Shales + argill. ls. brownish when weathered. upper half with Trematites
all with rather numerous Ostracoda & Lingulopsis insignis - Coll. C

329' Shale
= 113'

320' Dark shale
at 90'

313' Fault
at 250'

306' Mostly all greenish to steel blue ss. upper thin bed. but
speckled with brown
many pebbles, especially in upper half, conglomeratic thin. Some red
shales and a few red ss. in upper 200 ft.

299' Early Juniata
at 160'

292' Mostly red sandy shale with some beds of reddish and green ss.
at 100'

285' outcrop at top for thickness of about 40 ft. similar to next below.
at 60'

278' Upper Juniata
at 300'

271' end of piece
at 160'

Bellefonte, Pa.
section = upper part.

July 1882 - 09
C. D. Smith

Alle

Axema

Bald

? Bec

Beek

Section in Quarry (Luvilla-)

1909.

- 8" S. wall of quarry, dark colored fine grained ls. w. Phytop. surface. Surface is irregular + w. mud-cracks 8"-20" in length. Immediately upon this surface is a thin hard layer filled with cubes of FeS. A few weathered cephalopods in layers (coll.)
- 3"-4" Upon this surface is a band of carbonaceous shale containing *Beudanticia*, *gast.*, *Ceph.*, etc., above which is a hard ls. layer covered with *Tetradium* c. 2" in diameter.
- 1 1/2' Fine sh.
- 4 1/2' Dark colored fine grained ls. similar to beds first described.
- 1' Carbonaceous shale.
- 2' Dark colored with practically no fossils in center.
- 2 1/2" Capped by shaly fossiliferous band.
- 11" Medium bluish ls. w. irregular fracture.
- 6' Dark bluish dark ls.
- 6'-8' Buff colored, thinly bedded at top and bottom medium (3') in center. The lower portion has trilobites.

Above this comes the massive blue quarry beds.

(Copied from 1909 notebook)

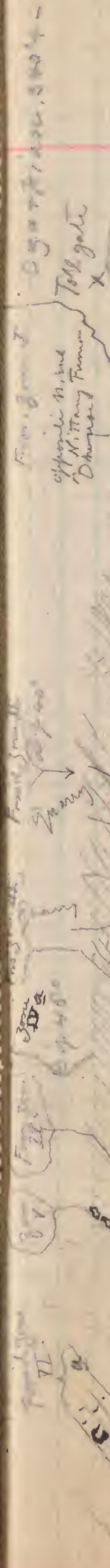
Continued down road from p. 9.

Section at Bellfonte, Pa. which and Butts, 1909.

At average dip of 45° Butts compute the thickness from base of Ford zone to top of exposure of Buckman town shale.

Buckman town:

up. dol. member	2145'
Middle lo. "	150'
Low. dol. "	1250'
u lo. "	660'
<hr/>	
4215 ft.	4245'
Collin. G. L. given same at	
Bull. G. S. A.	2335'
vol. 14, 1913	157'
p. 410-11.	647'
<hr/>	
	4406'



Similar to mylar but on whole much finer grained and with little chert and no ss. What chert there is is white.

probable hiatus * Pecten masses, mostly pure and low mag. ls. many of the layers with edgewise congl. 12 ft. beneath top ledge with small gastropods.

Thin bed. argill. sh. + thin 1 in. + lo. layers. interbed. with lenses ls.

no exp.

Lo. rather thick - nearly pure.

Nearly all rather heavy bed. ls.

Occasional beds to top with the small gastropod as at furnace entrance.

42' with large fossils 15-30% mag.

70' mag. pure ls. - some edge-wise congl.

29' Dark gray, subolite ls. fossils here and there with *Strophomena* and *Eryon* also *Dalmanella* cf. *virgata*. Top of Stoneking.

Mainly highly magnesian ls. and dol. *Aphelto "complanata" = Roubidoux* *Leconospira*

Eryon bed (about here the east limb of the anticline shows, especially south from Spring creek, where it gives rise to a broad elevation) some shaly sh. congl. on both sides. Dolomite to a layer with a small amount of pure sh. that contains *Horn*, *artemisia* etc. **Carter**

* Carter fauna in sh. Nittyng dol.

(Taken from Collins)

Plot measured about 800 ft = 568 ft. +

ls. many layers less. *Leconospira*, *Tribolite* and *Plectambonites* bed. This ls. persists to southward of Tyrone.

no exposure to north side of bridge (counted with overlying magnesian member)

9-161.

UNITED STATES GEOLOGICAL SURVEY. 425 P.

Copy of this label put with Coll.

In charge.

No. Name: { Field: *Melrose bed of the*
Determined: *Stones River group (Leslie)*

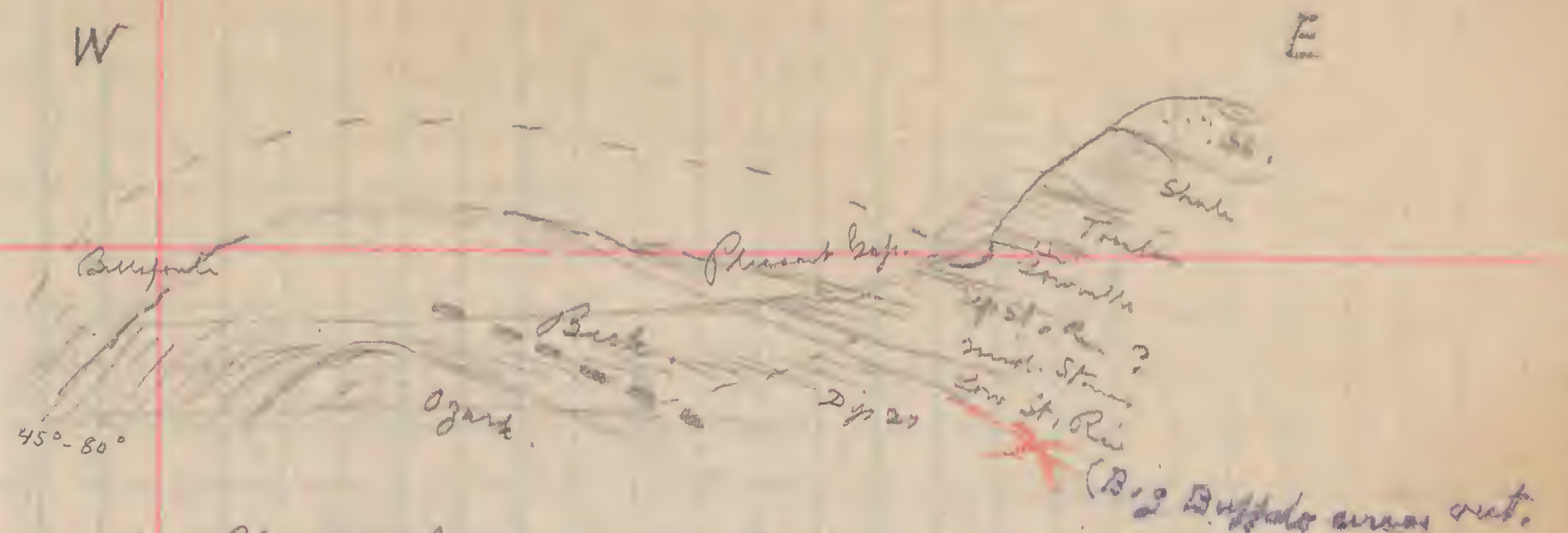
LOCALITY: *Travis or formation*
in R.R. cut at southern edge of
Dumont, Pa.

Collector: *W. H. & Bullis*

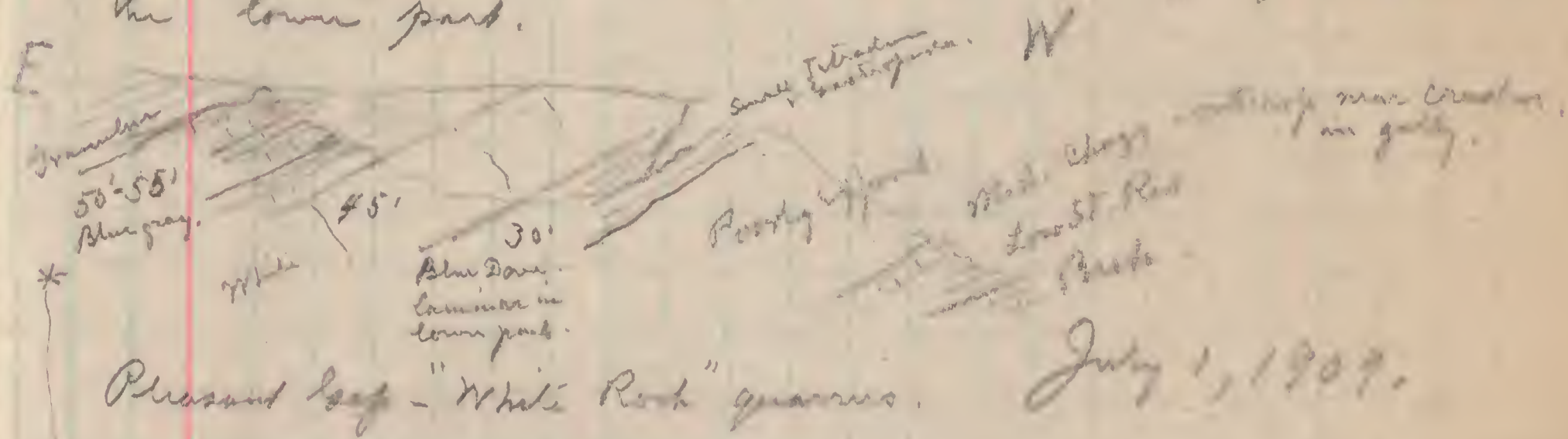
Date: *June 27,*
Note Book: *1916*
Page:

Memoranda:

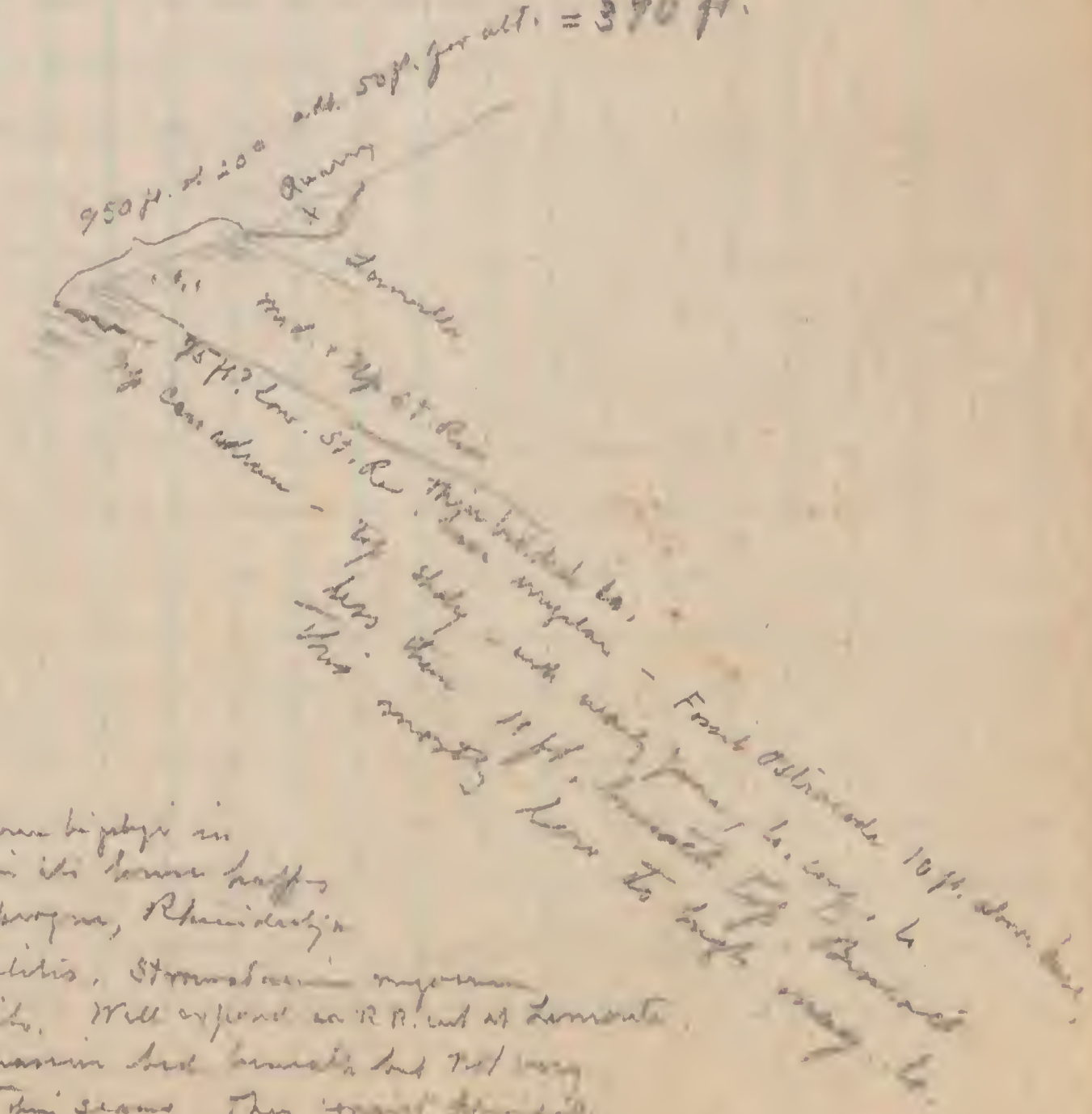
16' Tronolite
10-11-1907



At Pleasant Gap the Tronolite and Louville is essentially as at Bellefontaine, appearing in both character & thickness rather closely. - The Tronolite is about 600 ft. The middle Louville (45 ft +) is a heavy bed, in part finely speckled with calcite in a "dove" matrix. Tetradium is rare in this and the overlying thinner bedded upper Louville but it is very abundant in the lower part.



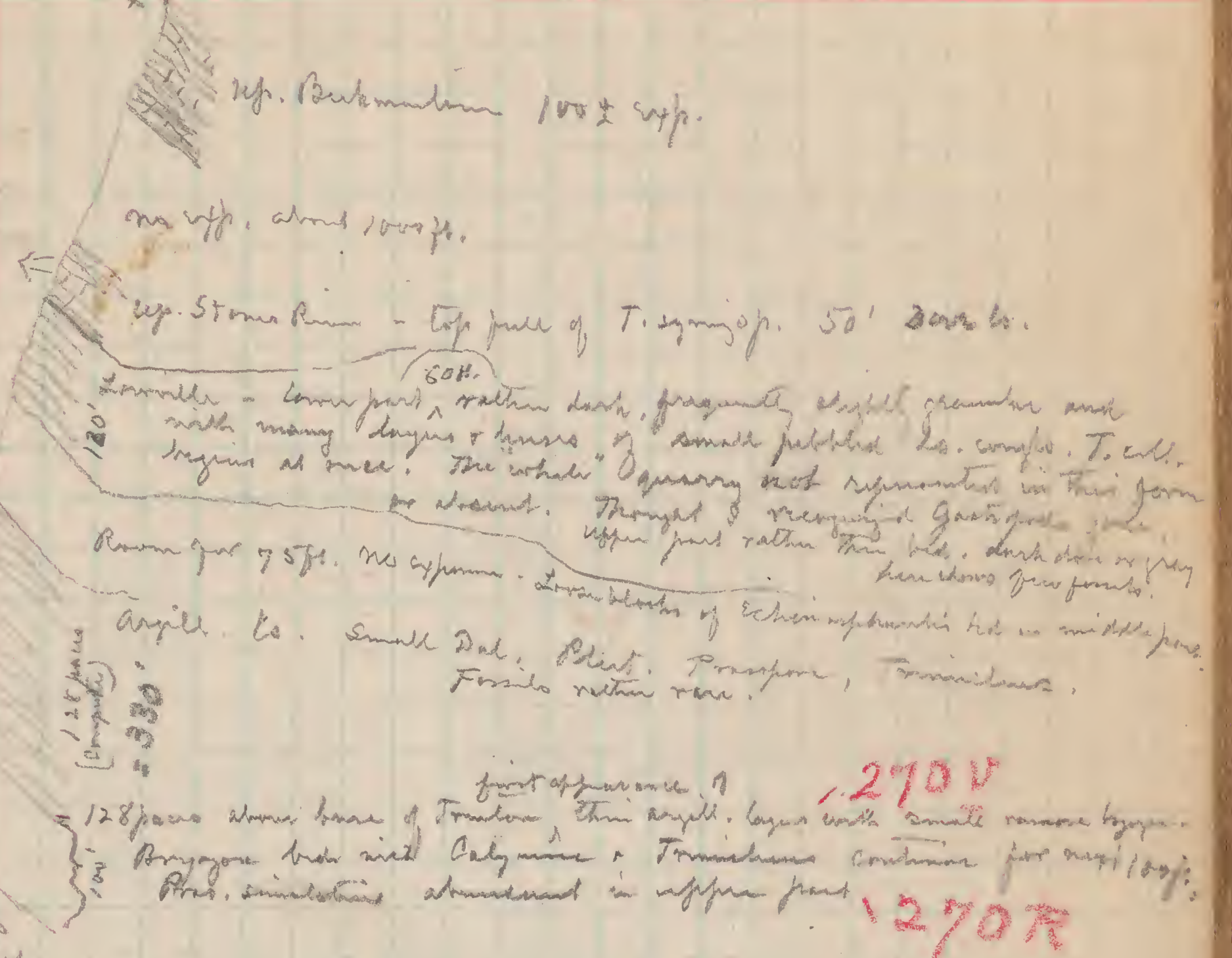
900 ft. at 20% = Stones River = 323 ft. E
950 ft. at 20% = 370 ft. W.



* This bed contains *Melanobolus* in abundance - especially in its lower half also *L. vitreus*, *L. purpureus*, *Rhynchonella*, *pedunculata*, *Lep. pectinatus*, *Stromatolites* and many other fossils. Well exposed in R.R. cut at Dumont. Fossils occur in the massive bed beneath but not very abundantly except in thin seams. They consist principally of *Raf. muricata*.

Oak Hill Mill

RR cut



1 mi. N. of Oak Hill, Pa.

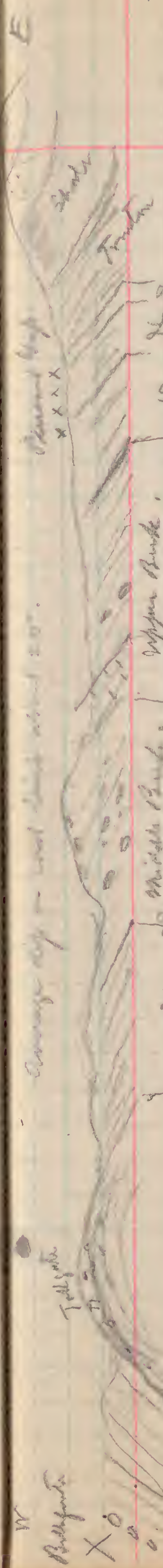
Dip 60°

first appearance of **270V**
 128 paces down base of Trilobite thin argill. layer with small coarse bryozoan
 Bryozoa bed with Calymene & Trilobites continue for next 100 ft.
 Prod. similobius abundant in upper part **270R**

* This fault is well shown at R.R. cut at Limestone. The Echinophantia bed is recognized by its granular character, fossils being seen in this bed at this point. However, as it is less than 10 ft. perhaps the more fossiliferous upper layers are absent. The contacts above & below are clean in fact & present no convincing evidence of fracturing. Bed referred to is probably one of the subgranular ls. zones 21 to 23 in Buckman section. A fault is suggested at Limestone.

Generalized section between Bellefonte and Pleasant Gap and Lemonts,

July 1, 1909.



granular ls. = Rodman - coll. 425; *Schizophoria* beds

Dol. Bellefonte dolomite

Lo. *fruticosa* - *Axmannia*

Mittrany dol.
 Several hundred feet of this part of the formation contains beds of congl. fine gr. sandstone. The pebbles seem to have been of ls. + granular very small, leaving conspicuous holes in places. Associated are silicified balls 6-18" of *Cryptozoa* which have been gathered into piles from the fields by the farmers. *Dolomite* found with them contained an *Scylopterus* the inner whorls of which are in contact. This part is correlated with the *Meredith* area. The *Cryptozoa* should be compared with *C. studei*.

Lower Bed ls.
Stanchenge ls.

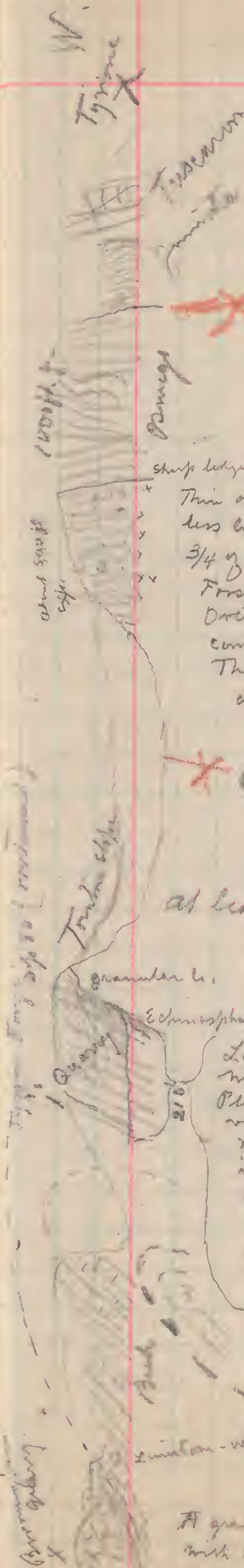
Can this be the *Sphaerostoma* that *Kear* thinks he has found in this horizon at Bellefonte? May be confusion here.

Lower Bed ls. (Stanchenge member)

Section along Pa. R.R. Tyrone to
Birmingham, Pa.

July 2, 1909.

(Continued next page Birmingham to
Shenandoah)
(Pulle's section gives measurements)



sharp ledge of greenish gray ss. ~~XXXX~~

Thin originally limy ss. generally fossiliferous and a few heavier (up to 15") less limy ss. ledge in greenish drab shales, the latter making up 3/4 of the mass and generally slightly sandy. No soft shale.

Fossils at intervals throughout. At top pterygoda and Oretrochymada - Pterygoda continue down some 200 ft. Then come in *Platystrophia*, *Dal. multicauda*, *D. striata* & other bryozoa. The first (upper) *Plat.* in rather large bed in lower 100 ft. a small form (same as *Chambardley* etc) with small *Plat.*

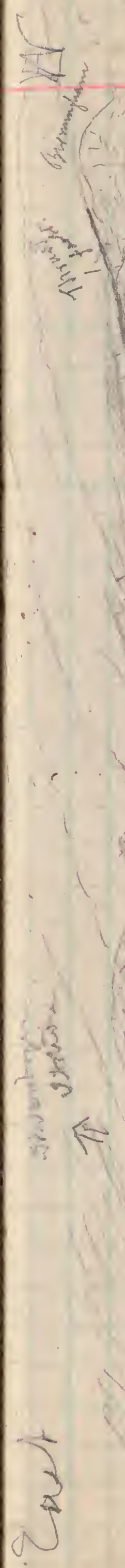
all below and higher - perhaps to base of Mr. Middleman. ~~XXXX~~ *Plat.*, a layer with *Ceratopora*? etc.

at least 250-300 ft. Trossenon - No crops seen.

granular ls. *Echinospira* bed - somewhat stony

Lovell's grading upward into granular bed - the full contains great numbers of the bryozoa and an occasional *Echinospira*. With them *Platystrophia*, *Asper*, *P. jessum*, *Dal. pectinella*, *Rhynch.* sp. *Camarella* *volcanica*. A few of these bryozoa occur in preceding 4-6' of rock quarried. Best rock in middle part of quarry but all is somewhat banded with granular streaks and the whole is darker in color than at *Paleopora* & Pleasant gaps. Reminds much more of the *Lovell* and *Oakhall* Lovell fossils. Basal layers seem to correspond to the *Gastropod* bed in the *Paleopora* section. About 20 ft from top abundant *Madama* *highi*, *Loph.* *brunnea*, *Trach.*

A greatly eroded and fractured and metamorphosed ls. formerly quarried with a stony ls. and shale beneath it. Contact between two more irregular. The ls. is unquestionably *Stans* *Paris* after much search found *Tetr. spina*, *Dal. subalata*, *Indolites* and *Neobornia* bryozoa, *Actinouras*? *Loxopora* of *retrovia* *Loph.* of *brunnea* and the *Gastropoda* - also *Lepidote* cf. *gabekli*. *Trach.* is fossils.



across the creek (= 1/2 mile) red shaly ss and white quartzite shown
 in cut of major road. Pa. geologists called these Cambrian but they
 may be Juniata + Tuscarora. Depends on which side of fault
 they belong.

Shower River

(Would like a picture of this fault plane. - It is clearly shown
 in cut.)

massive ls. - possibly lower but ^{ward of} basal ^{of which} ^{with} ^{cryst.} ^{massive} ^{fractured} ^{conglomerate}

Thin bed. dol. some of it suggesting
 or rock here.

some sandstone

quartzite heavy and medium bedded gray, fine medium coarse
 dol., with occasional beds of 2-8 ft. (or more) that are
 thinly laminated. On whole this part of formation
 is no wise suggests Conococheague lithologically.
 About 1000 ft.

East

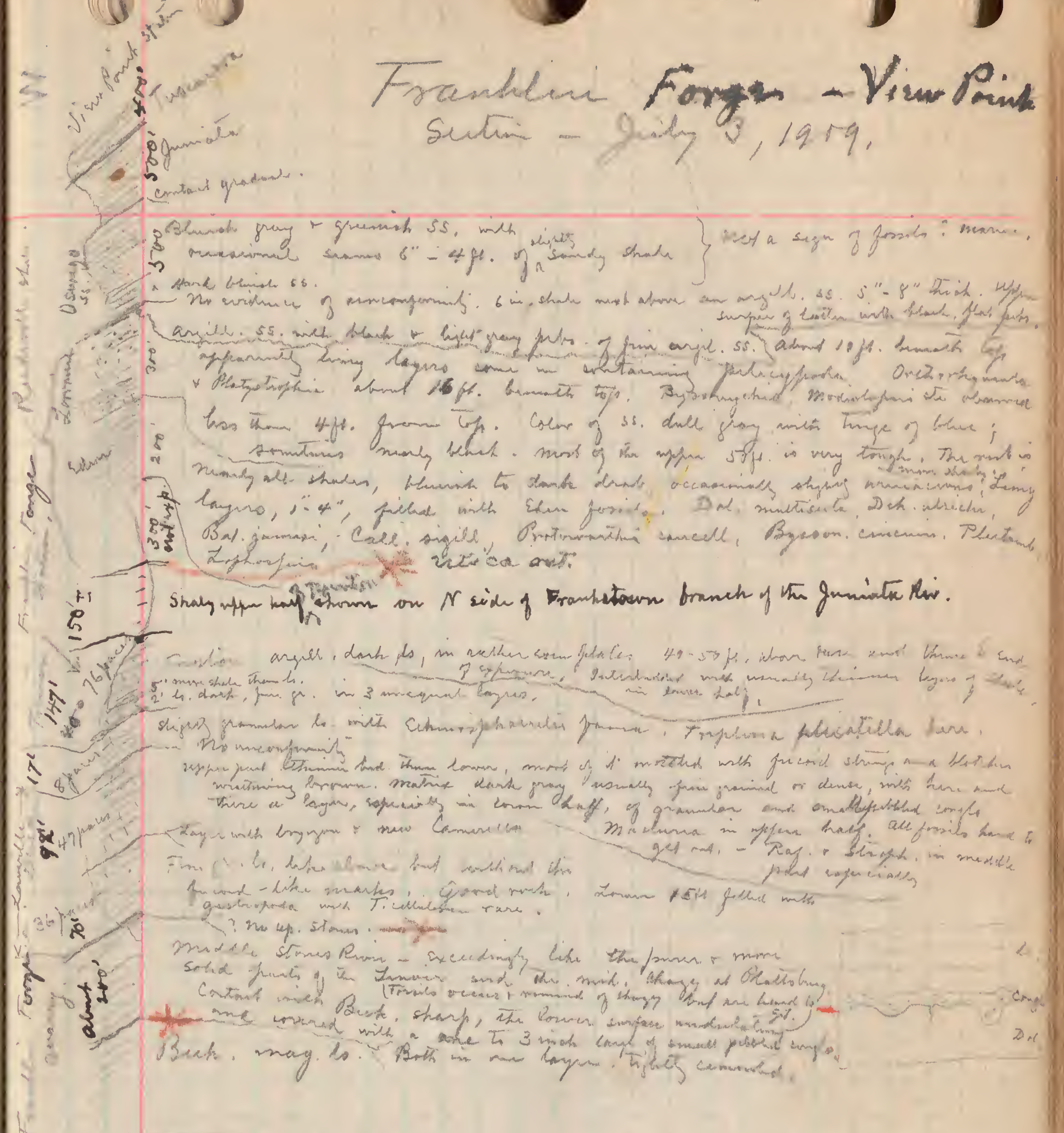
St. Louis Butte

Birmingham to Shouberger
 (Birmingham to Tyrone on preceding page)

July 2nd 1909.



Franklin Forge - View Point
Section - July 3, 1919.



Bluish gray & greenish ss, with occasional seams 6" - 4 ft. of sandy shale. No evidence of unconformity. 6 in. shale next above an argill. ss. 5" - 8" thick. Upper surface of latter with black, flat pebbles. Argill. ss. with black & light gray beds of fine argill. ss. about 10 ft. beneath top apparently limy layers some containing Platystrophia about 15 ft. beneath top. Color of ss. dull gray with tinge of blue; sometimes nearly black. Most of the upper 5 ft. is very tough. The rest is mainly all shales, bluish to dark drab, occasionally shaly layers, 1-4", filled with Eden fossils. Bal. junonia, Call. sigill., Protomoneta cancell., Bygonia, etc. etc. etc.

Shaly upper half shown on N side of Frankforton branch of the Juniata Riv. argill. dark ps, in rather congl. beds. 40-50 ft. above base and three 6 in. of exposure. Disturbed with usually thinner layers of dark ss. in 3 unequal layers.

slight prominence to with Schizophoria junonia, Trochilella here. No unconformity upper part bluish but then lower, most of it mottled with fine red string and blotches containing brown. Matrix dark gray usually fine grained or dense, with here and there a layer, especially in lower half, of granular and small pebbled congl. layers with bryozoa & new Camerella. Murchisonia in upper half, all fossils hard to get out. - Raf. & Strept. in middle part especially. Fine ls. like above but without the fossil-like marks. Good rock. Lower 15 ft. filled with gastropods with T. elliptica rare. No up. staves.

Middle Stones River - exceedingly like the lower & more solid part of the lower and the mid. Chazy at Kettleburg. Contact with Beck, sharp, the lower surface undulating and covered with a zone to 3 inch layer of small pebbled congl. Beck, mag. ls. Both in one layer, tightly congl.

This section is peculiar:

- 1) The Stones River seems to consist of middle division (mid. Chazy) only. It is of the eastern type remaining greatly of lower and Chazy type representations in lithology & fossils, & same in general Chazy way. Same at Pleasant Gap.
- 2) The Lowville - Black River - Kames with heavy and found little or no evidence of fracturing - may be continuous sedimentation.
- 3) Tetra, which is rare in this section. This is probably due to the fact that the basal part of the Lowville, in which this fossil is chiefly prominent, is here absent. An hiatus occurs between mid. St. Riv. & the Chazy but the Lowville. (See Bellefonte section)

My total for Stones River Lowville
Black River or Frankforton = 680'
Becks estimates and measures it
at 740 ft.

Important in middle Chazy distribution

III

Shale

~~Trenton~~

~~Louville~~

Tetro. columnaria + palaeopyge - see Butts former collection plus my
Steno Rens apparently very thin - only upper.

top of Rock

Lo. Annon

Whitney dol. 500-1000 ft.

~~Lower~~

Chapultepec zone with fossils.

Copper Ridge chert may be in lower part of series.

Sandstone

x Lo. Fossiliferous

Dolomite - gray stony dol.

Limestone with "Dikulosphalus" + compound Cryptozoa profuse

Quartz sand in dol. and thin quartzite bands. On weathering the former makes a loose sand or sandy loam in which are blocks + layers of quartzite. No good natural outcrop seen.

Very cherty surface - chert in blocks up to 4 or 5 ft. through. Nearly a third of the chert is porous, the balance is as typical Copper Ridge Knop as any I've seen in Tenn. or Ark. Fossils very rare except the Knop Cryptozoa. Found a Helicotoma? a couple of small gastropods and a Cyrtoceras all within same limestone member. ~~Arg. ...~~

Beck. Bellerophon not.

apparently not over 125 ft. to Buchanan. The section can be seen but had it thin to do so.

gastropod bed - full of fossils.

Thin bed of bryozoa. Remind of Stictygonia bed. granular ls. in part also congl. at least 2 ft. of beds - contains many bryozoa, Stict. angulata

ground on bed
Base of Trenton
down Trenton - black argill. ls.

? Ulica grading downward into Trenton ls.

Rearing Spring, Pa.
beginning 1 m. N. from
South 5 miles, then road
to Martinsburg, Pa.
July 6th 1909.
with Butts

Seen south of Rearing Spring
1-5 miles and thence
east on road to Martinsburg

Seen N. of
Rearing Spring

Added to list
to be made in
the field

1000

1000

1000

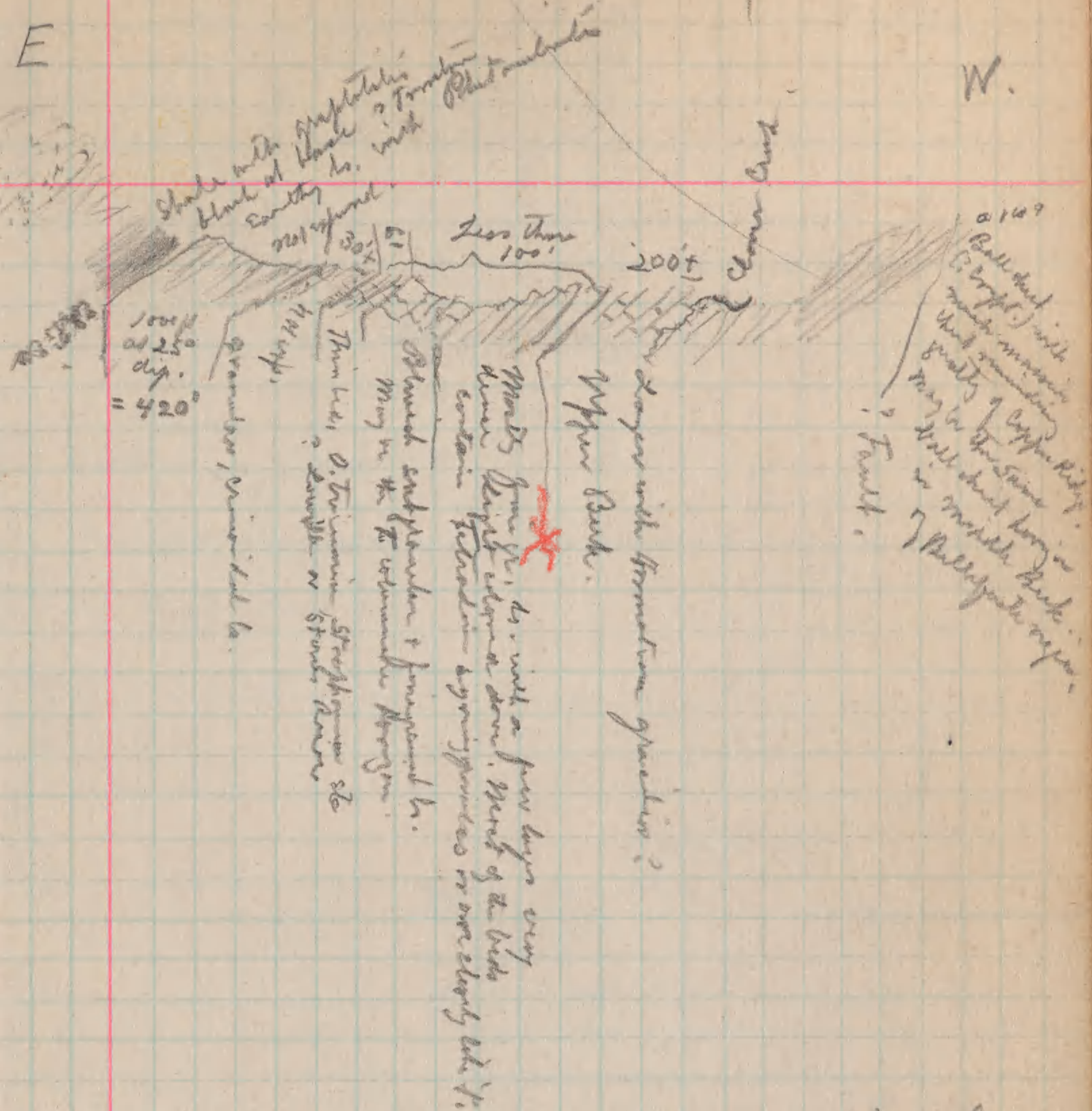
140'

140'

W

E

W.



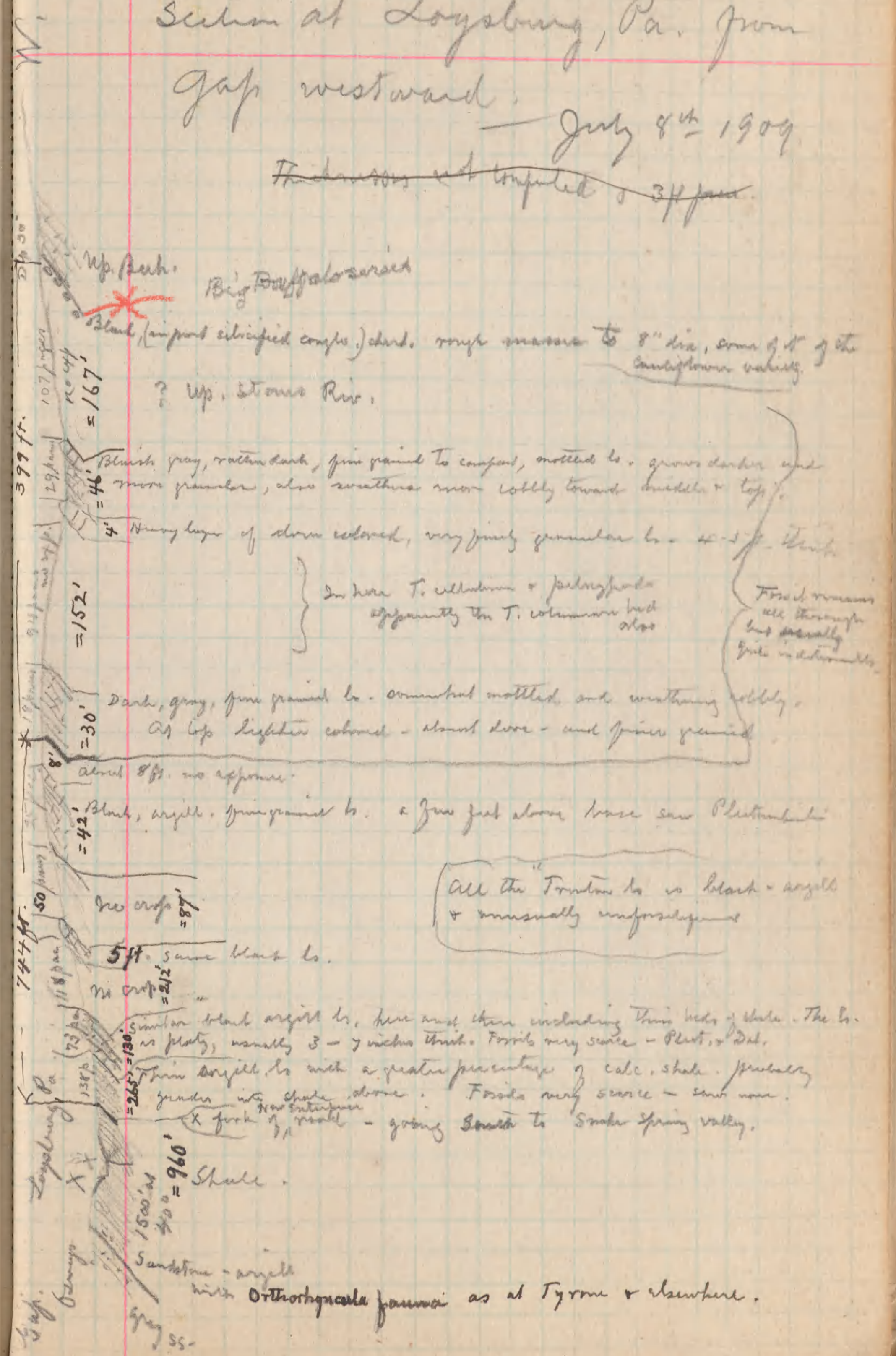
Ball's Creek
 Ball's Creek with
 (C. Trimmer) with
 mudstone, sandstone
 ls. with some fossiliferous
 ls. may be the same
 as Ball's Creek
 in the middle of the
 hill
 Ball's Creek
 Ball's Creek

Provisional & sketchy section across Clover Creek
 about 2 1/2 m. E of Martinsburg, W. Va.
 July 7, 1909
 with Butler.

Section at Loysburg, Pa. from gap westward.

July 8th 1909

~~Handwritten notes~~ 34 feet



550 -
2
750

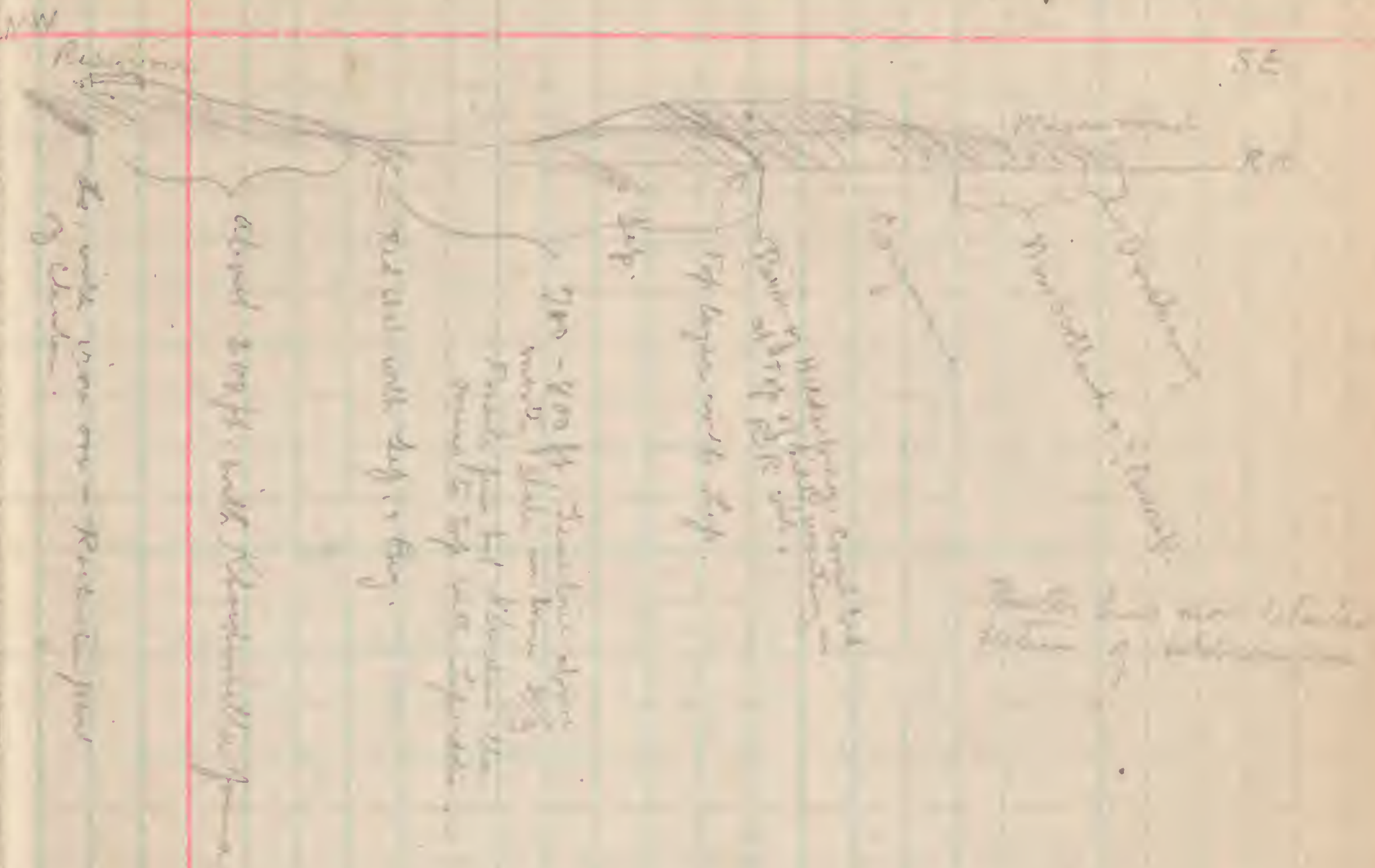
All the Trenton ls is black - argill & unusually unfossiliferous

Fossil remains all through but usually quite indistinct

Sandstone - argill. with Orthothyracella fauna as at Tyrone & elsewhere.

N 10 W
- dip about 40° E

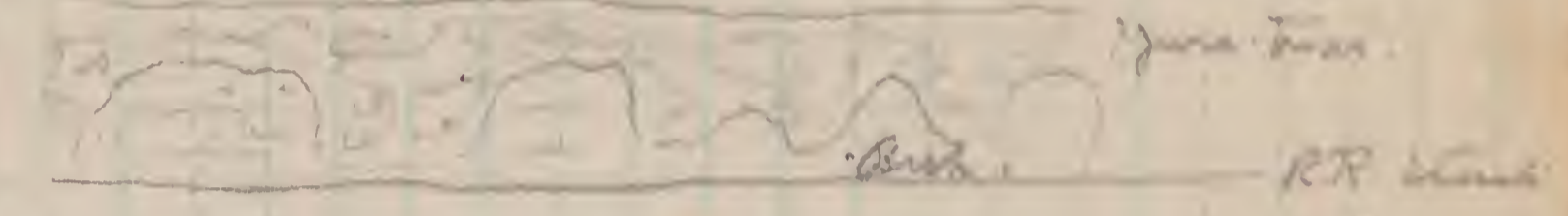
Section east of Hollidayburg from Reservoir to Wagon road
and RR cuts in face of hill 1 m. S.E. of town.
W.H. Butts - July 5, 1909.



July 11, 1919

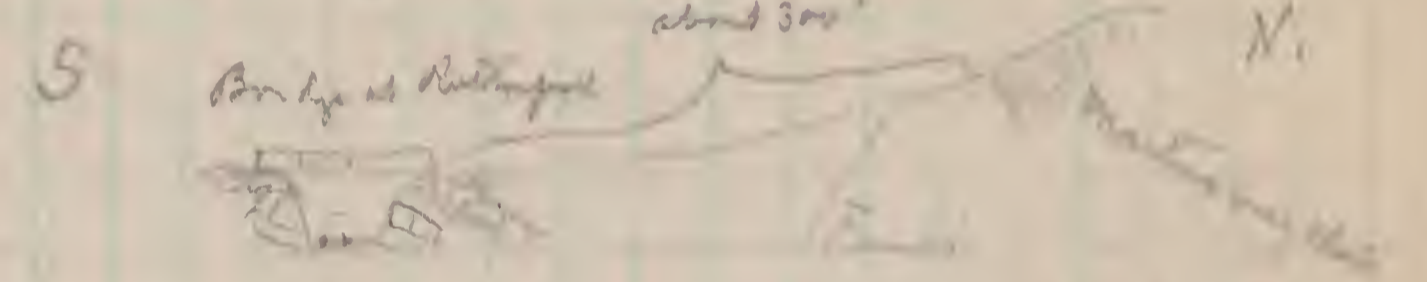
Rutherford, Pa. - 5 m. E. of Harrisburg.

In R.R. cut at Rutherford Berks limestone dol. ls. shows in great detached masses, over and between them being a shale ^{the material} that probably represents the residual material after decomposition of the ls. The latter contains ^{some} ^{small} ^{fragments} ^{of} ^{quartz}.



The dol. evidently dips north something like 40° but it is so much crushed that dip & strike are not readily determined.

Approximately 300 ft. to the north Harrisburg shale outcrops in slopes of low ridge or range of hills.



No evidence of ls. was observed in intervening distance from which it seems probable that the Berks ls. are absent here. This is further indicated by several small outcrops of ^{Berks ls.} ^{east of these} ^{1/4 to 1/2 m. west,} the ^{outcrops} being within 100 ft. of the shale hills.



*
? By which Conductor

Wackerderfer
City limits. N.B.

July 10, 1909

Quarry $\frac{1}{2}$ mi. east of
Hannover City limits



... the structure is nothing and
doubtless complicated in details

In the western part of quarry the boulder bed expands
from less than 2 ft. to
about 8 ft. where it
fills an old river
channel.



These quarry beds are mostly low in magnesia. The
frequent suggestion of a pink tint, as also their nearly
pure character and fine texture, is strongly suggestive
of the similar beds in the lower part of the
Schramberg area. Fossils are very rare. Saw only
two - both badly preserved gastropods, scarcely an
inch in diameter that might belong to a slender
Machurea. They were not Opheodonta. These were seen at
the entrance of Payson Park.

In coming north from the large quarry at edge
of city the Road. R.R. is crossed - a bridge spanning
a deep cut. Above the dip in the quarry is merely rolling
(though turned $\frac{1}{2}$ up at the north edge) in the cut
they dip at 50 degrees south - and this within 350 ft. of the
large shale. Either the bed
bends down very sharply or there is
a fault. In view to take
view.

July 10, 1959

D.C. Hooker's quarry $\frac{1}{2}$ mi East of East edge of Postburg Park. Harvesting city limits.



? By which Cambrian

The quarry seems to be about in axis of anticline - but the structure is nothing and doubtless complicated in details.

In the western part of quarry the boulder bed expands from less than 2 ft. to about 8 ft. when it fills an old erosion channel.

These quarry beds are mostly low in magnesia. The frequent suggestion of a pink tint, as also their nearly pure character and fine texture, is strongly suggestive of the similar beds in the lower Cambrian of the Chambersburg area. Fossils are very rare, few only two - both badly preserved gastropods, scarcely 1/2 inch in diameter, that might belong to a slender *Murchisonia*. They were not *Ophileta*. There were seen at the entrance of Postburg Park.

In coming north from the large quarry at edge of city the Road. RR is crossed on a bridge spanning a deep cut. Although the dip in the quarry is nearly nothing (though toward $\frac{1}{2}$ mi up at the north edge) in the cut they dip at 50 degrees south - and then within 350 ft. of Northburg shale. Either the Rock...
beneath down as a very sharply or due to a fault - In close to latter view:

Suburban quarry near (just N. of)
Dawsonville Sta., Reading Rd.
N 80 W

Dawsonville

77 45 E

Lumpkin - west side of Schuchert Hill
N 80 W

Section S. from Dawsonville
through Lumpkin to
Oatkaunee Station. 3
band next N. from Re
Sunday, July 11, 1914

Oatkaunee Sta.
Wagon road (reverse)



(S. Elm George)

to be on thin plates alternating with thin
grains not uncommon while in the upper
conglomerate with flattened pits of
observed. The occurrence of such pits
is. Fossils must be very rare - some

exposed about 100 ft. of both
middle third is increasingly fine and
speckled with tabular remainder of it. This
is possibly some
The lower 1/2 mile continuation of same in part is
probably the closely to completely laminated
with micaceous vein like sand which
remain in description of it in the 2nd
months. The latter sandstone shale
is probably lower than, but possibly
next to N. 50m another like cover fit with road.

apparently some rock as in preceding quarry
at distance between
about 200 ft. up road

about 300 ft. more nearly any quarry bed

change of strike

probably, same quarry bed

Kokenderfer
City limits. N.B.

nearby $\frac{1}{2}$ mi E. Harrisburg Pa
Page 37. 1909.

July 13th 1909.

Allentown, Pa.

Lingulella in situ. Stonehenge or in upper Conococheague opposite Frontdale Wherry's loc. 4524. Considered later that it is of. Conococheague = lower Little Falls loc.

(of Allentown group)

Lower Conococheague with frequent Cryptozoa? bands. They make certain layers 2 to 10 inches thick. Some interesting features in the middle of maximum

of these bands. The top layers are nearly always (certainly in the thicker bands) perfectly even or but faintly undulating.

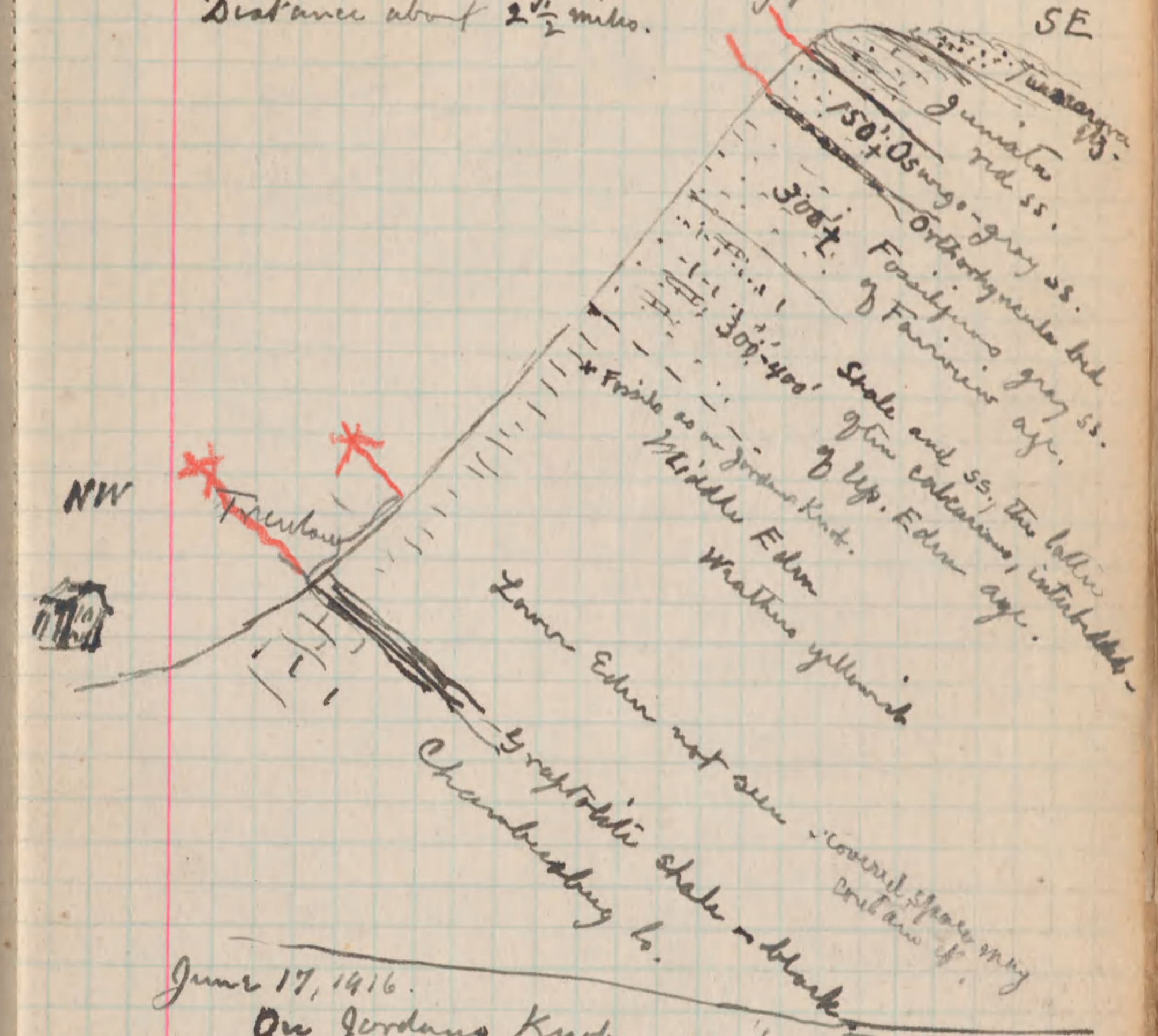
The lowest laminae however are sharply undulating, each wave about 1 inch across - or more properly diameter. This part looks like what I know as the *C. perforatum*. Between the lowest and top laminae the undulations grow gradually less.

As a rule the Crypt. is undulating by 1-8 in. small (1/16 - 1/4) parallel to surface, and this by 1 to 6 in. of oolitic ls.

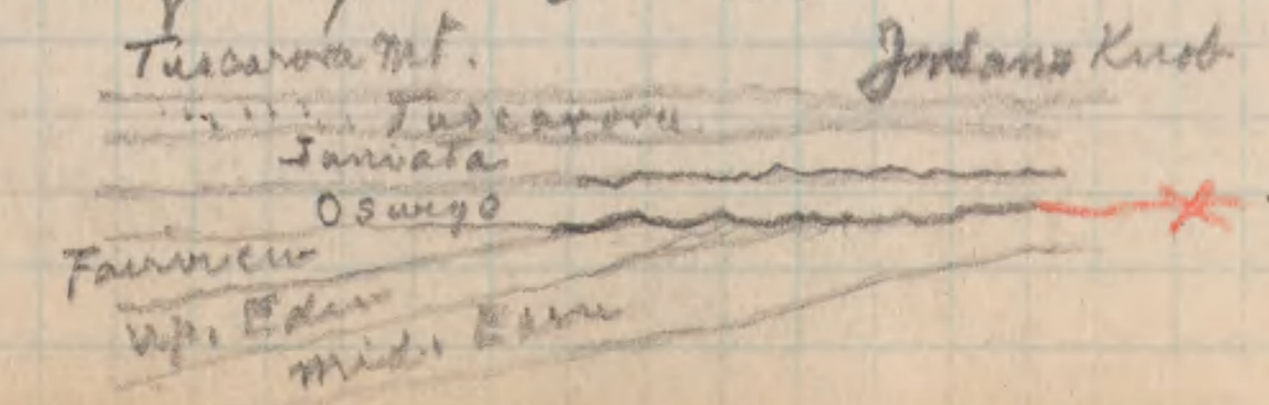


The Ozarkian here is more like the Stonehenge section than the true Conococheague. There is an upper delta, but not much SS with it. about as at Pottsville.

June 18, 1916, With Charles Butts.
 Generalized section of west slope of Tuscarora Mt. between McConvilleburg, Pa. + summit of mountain along Mercersburg pike.
 Distance about 2 1/2 miles.



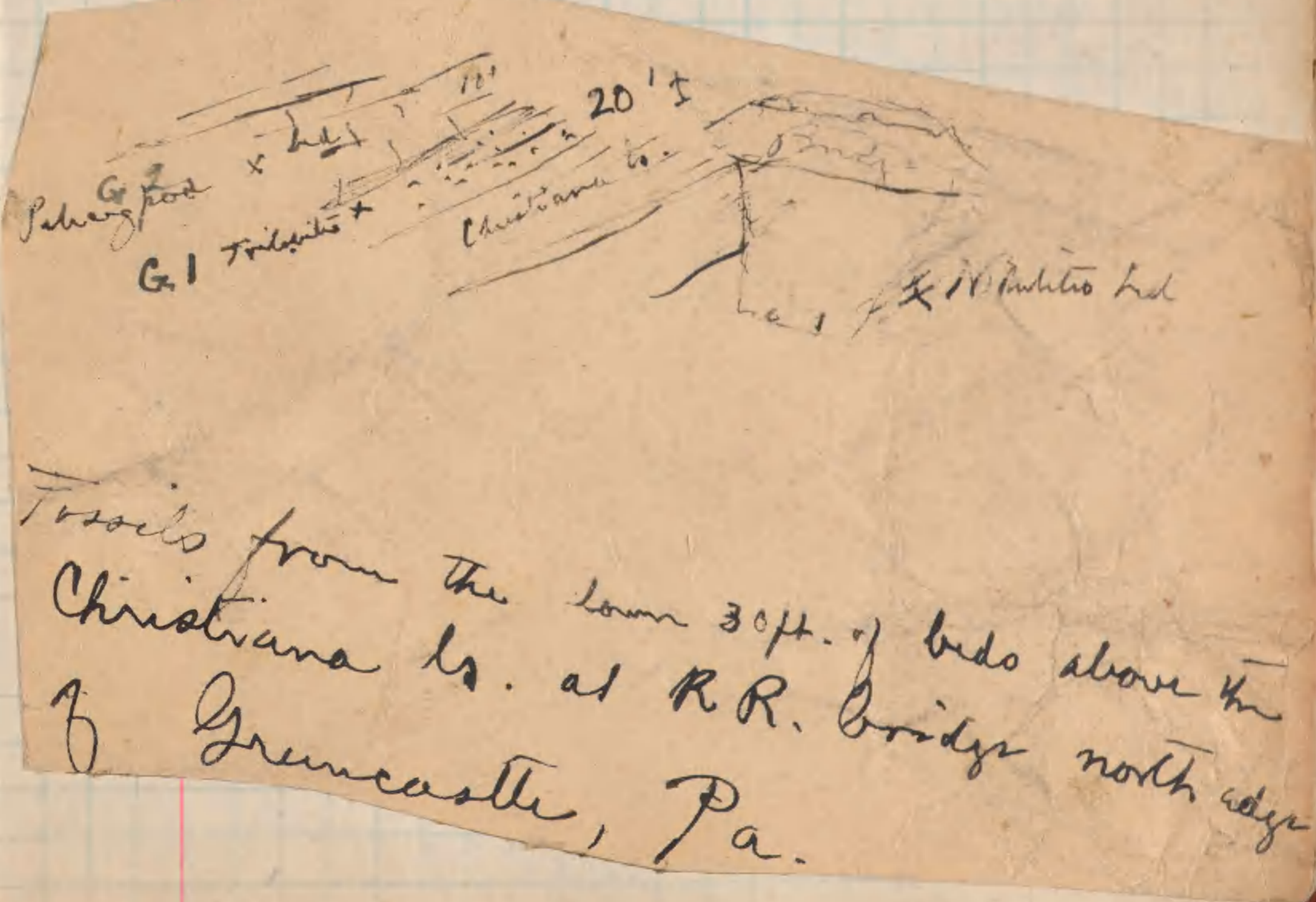
June 17, 1916.
 On Jordan's Knob, a mile or two N. or NE of Ft. Loudon, Pa., the sequence differs very much in that the Oswego ss. rests on the mid. Eden. Collected a good fauna close to the top of the latter. The basal part of the Oswego contains layers that are distinctly conglomeratic, with mostly fine quartz pebbles - some of the pebbles range up to 1/2 inch.



R.R. section at Lehigh Water Gap, Pa.
 Oct. 15th - 1925
 With State Geologist
 Associates

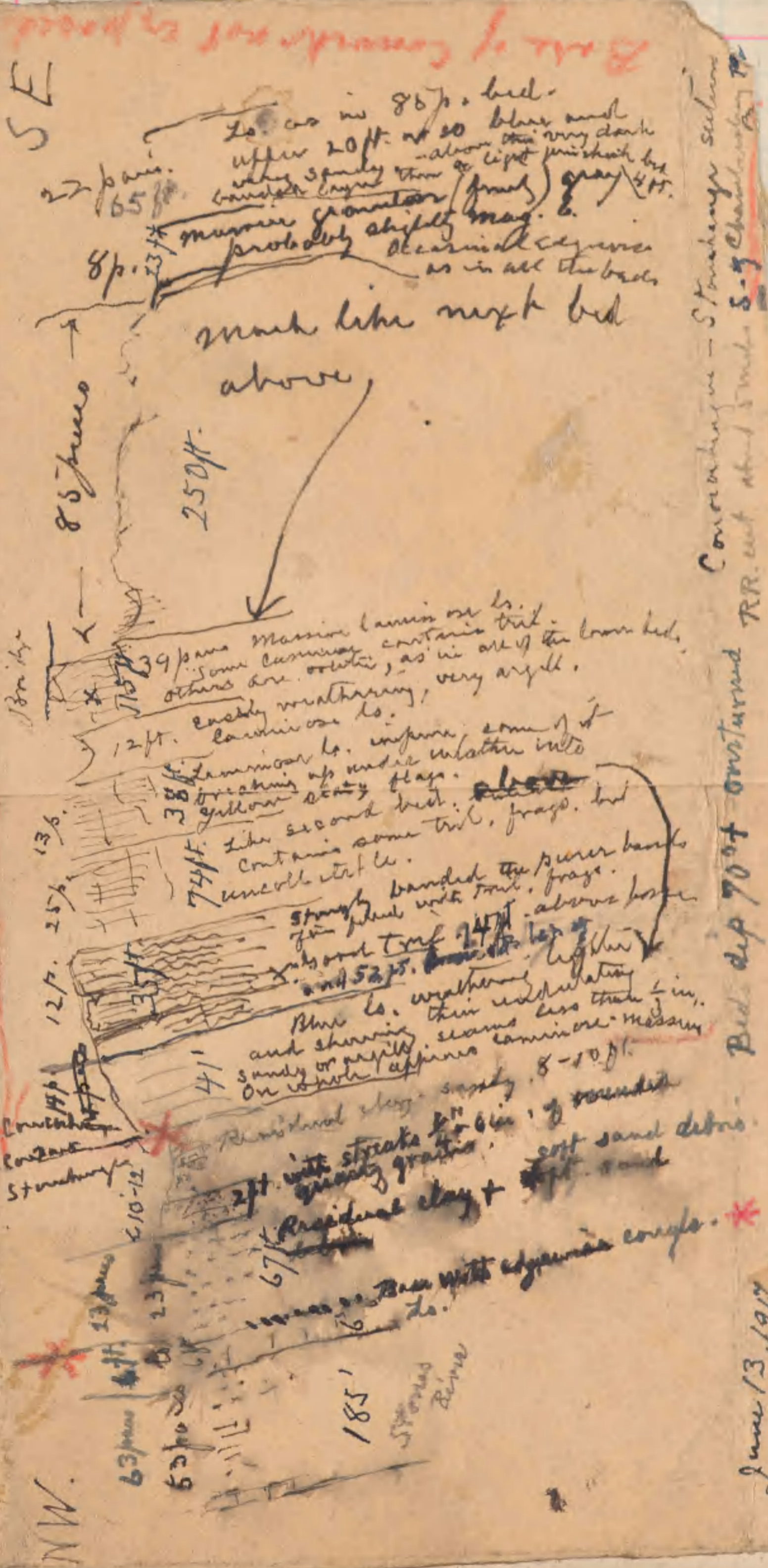


Blossomsburg shale (red)
 55'
 ordinary Clinton



Concordville ls.

SE



Overturned Section

Upper 75 ft. of Concordville not exposed

Bar. 270 ft. of Stonewall

June 13, 1911

N. of Catawissa near Allentown, Pa.

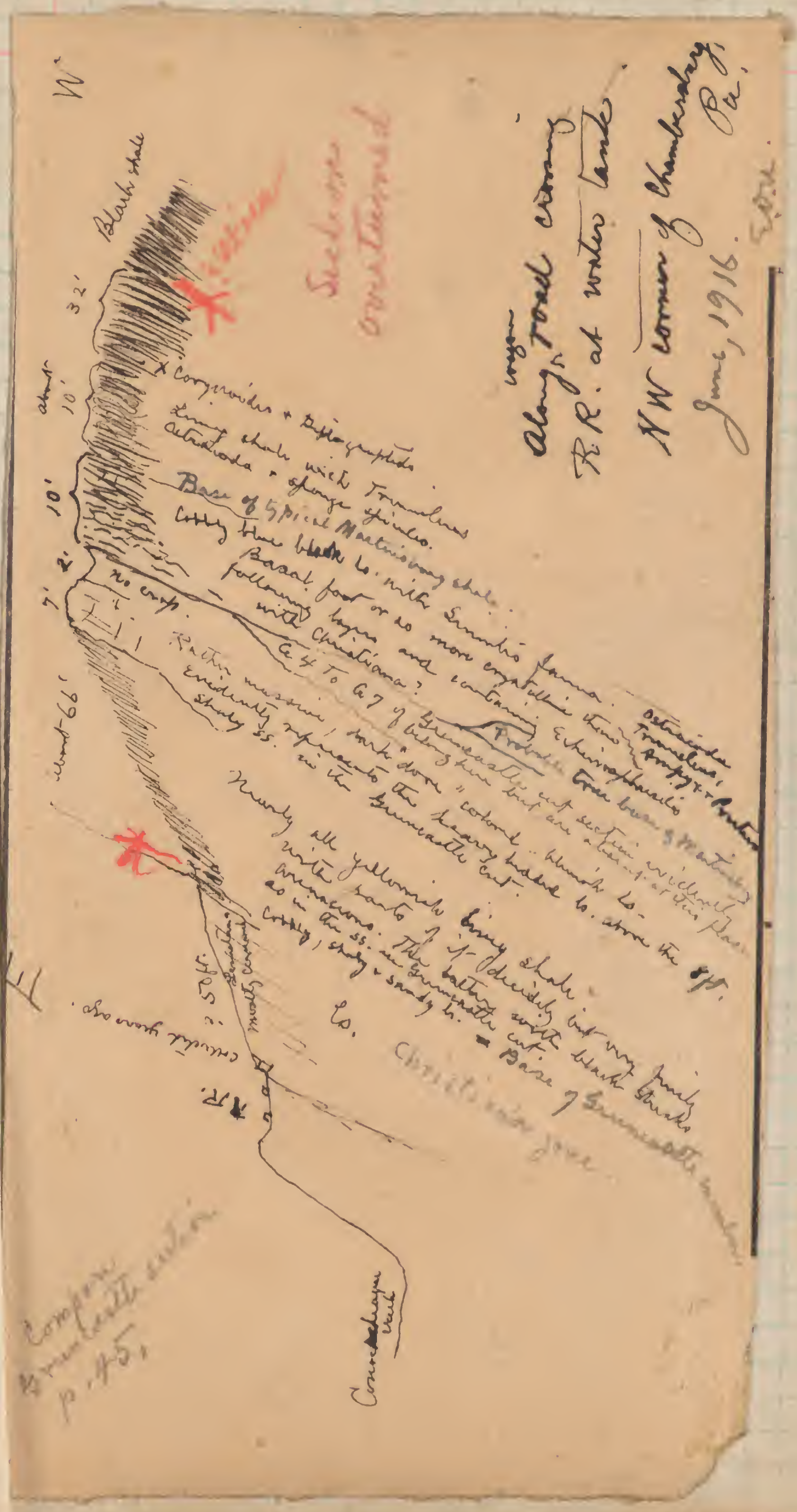
46 48

Allentown fauna
Faunt. 48



Richman's fault

49



Sections overturned

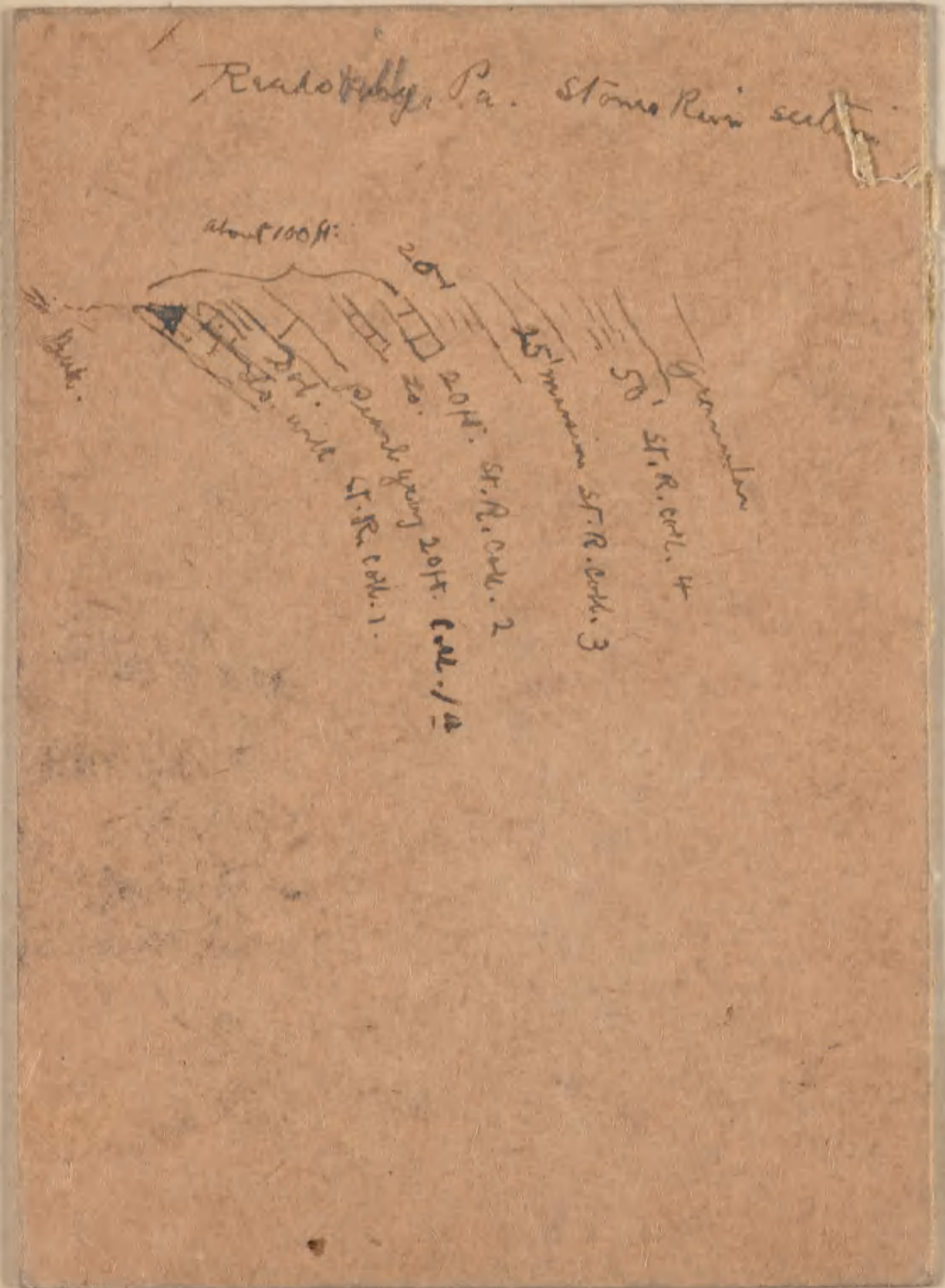
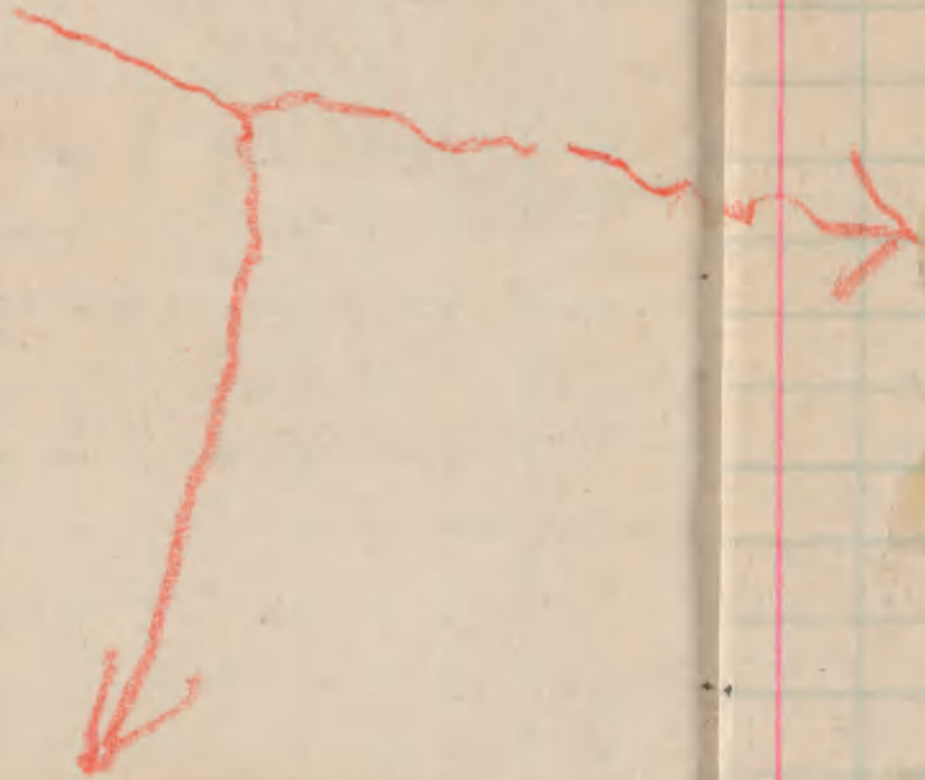
along road crossing
R.R. at water tank
NW corner of Chambersburg
Pa.
June, 1916.

Compare
p. 45

Chambersburg

50

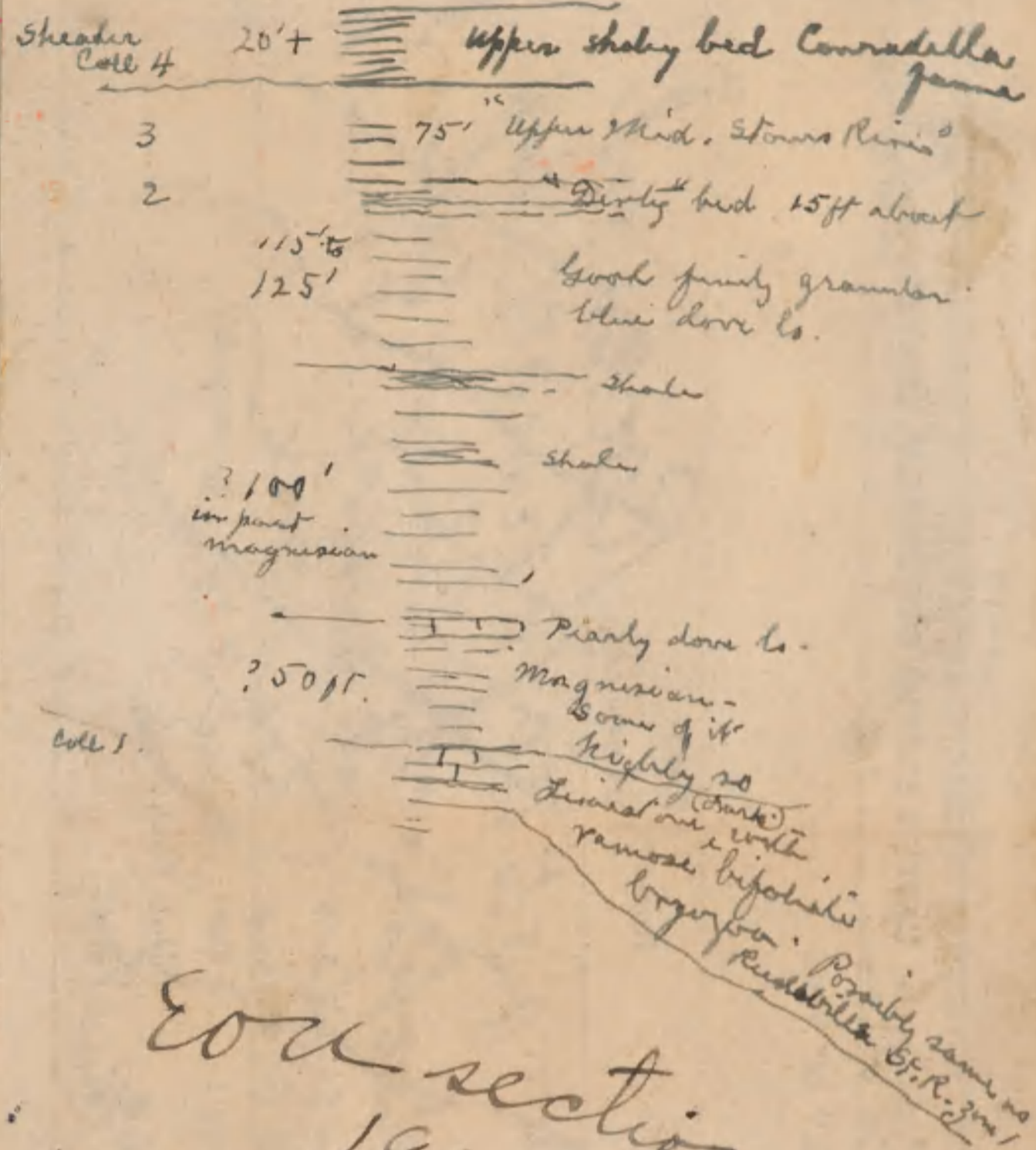
may be worth while



48

51

Sequences at Shreders (Pa.)
National Lime Co. quarries near Midway, Pa.



Even section
1916.

See also section at Midway
on p. 5

near Midway, Pa.
On Ry 126
Mifflin Co. Pa.
8 or 10 miles n. of
Lewisburg,

P 21

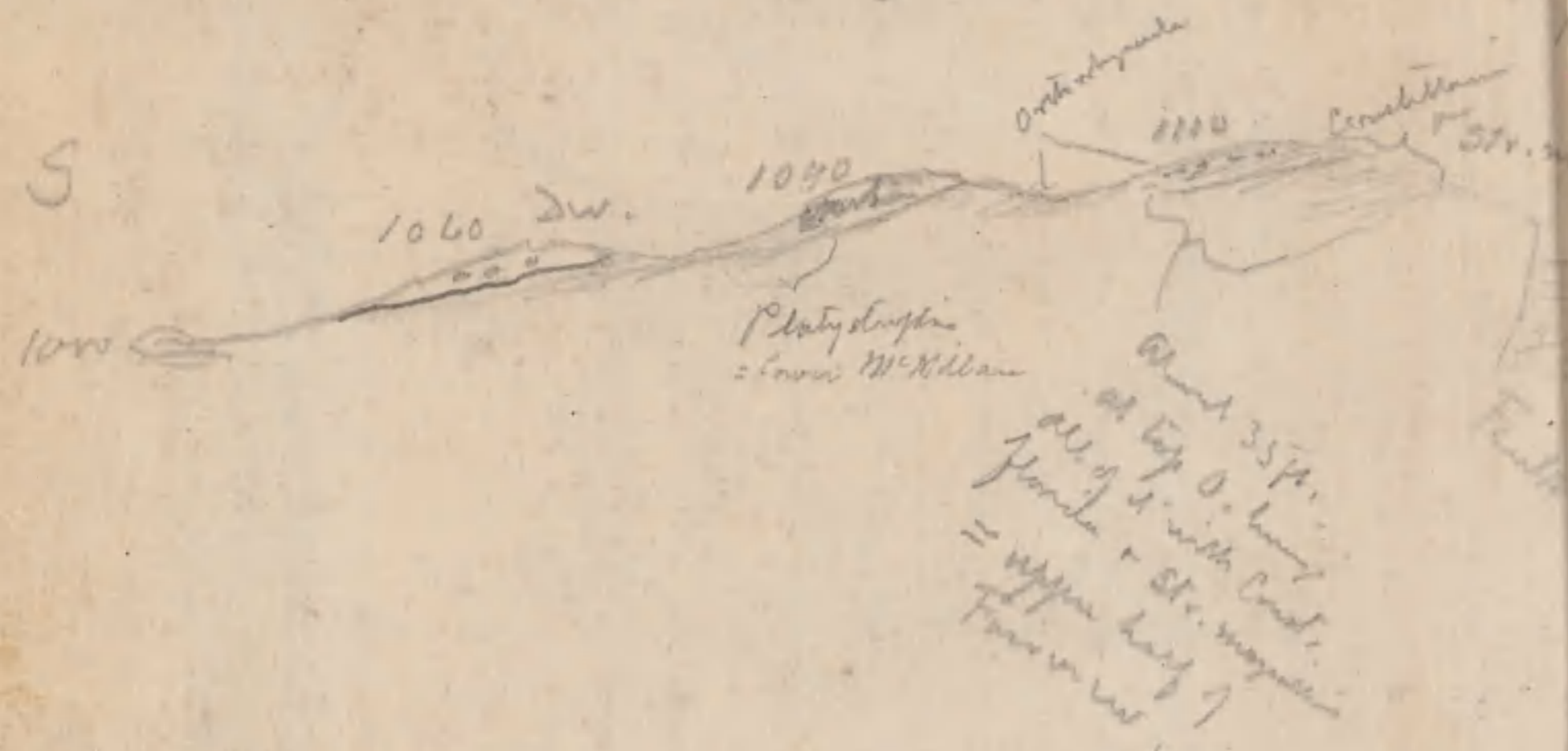
Ed. L.
200
to center 200

RR, 86

5 or 2.00
to end

0
0
5
5
28
30
23
36
38
47
25 - 169
25
53
65
70
31
90

3 to 2 1/2 mi S of Danville
1010 - 1070, Top of Gadsden



Dinner dinner - sleep.

- 12th R.R. Cin. to Dover + return ^{12th Pullman Ltd. L. 200}
- June 19 R.R. Cin. to Sanders 1.40 ^{13th " to Cin. 200}
- " " " " Blumers, Ky to Cin. 1.15
- " 17 " " Cin. to New Rich + return .70
- " 20 R.R. Cin. to Danville Ky 3.50
- 21st McKinnys to Lexington, Ky 1.75
- " Lexington to Frankfort ^{truly, 65 - RR, 86}
- Frankfort to Eminence .76
- 24th Eminence Ky to Cin 2.80
- 25 Pullman - extra fare ^{Altoona to Wash. 2.55 or 2.00}
(make it both rates)
- 26 - 27 - off for dinner (in Wash)
- 27 Pullman Wash. to Altoona 2.00
- 28 R.R. Altoona to Bellefonte Pa. 1.20
- July 2 " " Bellefonte to Tyrone .85
- " 2 " " Shrewsbury to Harrisburg .65
- " 3 " " Hollidaysburg to Paint Mills .28
- " " " " Franklin Forge to Hollidaysburg .30
- " 6 " " Hollidaysburg to Rockman .23
- " 7 " " ^{Washington to Hollidaysburg} .38 ^{Miles}
- " 8 " " ^{Bellport to Washington} .47
- " " ^{Huntingdon to Lewisburg} .25 - 169
- " 9 ^{Lewisburg to Waginny} .25
- " " ^{Waginny to Lewisburg} .25
- " " ^{Lewisburg to Harrisburg} 1.53
- " 10 ^{Lewisburg to Harrisburg (1 m.)} .65
- " 10 ^{Harrisburg to Lebanon} .70
- " 11 ^{Lebanon Pa. to Reading} .31
- " 11 ^{Reading to Susport + return} .90
- " 12 " " ^{Altoona}
- " 14 ^{Altoona to Washington}

C. & O.

To Winchester going west

8.03 A.M.	8.40	Ar. Frankfort
4.38 P.M.	5.10	6.15
2.50 " "	3.30	
6.22 A.M.	7.00	

going east

Leave Frankfort	Lex.	Winchester
10.15 A.M.	11.10	11.57
7.45 P.M.	8.45	9.25
	7.50 A.M.	8.42
	5.50 P.M.	6.30

Queen & Crescent

Leaving North		South	
Ar. Danville	Ar. Lex.	Le. Lex.	Ar. Danville
4.52 A.M.	5.30	9.50 A.M.	11.07
6.52 A.M.	7.55	10.30 A.M.	11.27
6.05 P.M.	7.22	6.50 P.M.	8.10
7.45 P.M.	3.03	10.30 P.M.	11.33
5.02 P.M.	6.05	10.40 P.M.	11.43

L. & N.

South

Le. Cin.	Ar. Padm.	Ar. Winch.	Ar. Richmond
6.30 A.M.	9.26	9.57	10.43
8.15 A.M.	10.30	10.54	11.35
2.55 P.M.	5.48	6.35	7.21
8.25 P.M.	10.55	11.20	12.02

going North

Le. Rich.	Ar. Winch.	Ar. Paris
4.21 A.M.	5.04	5.36
6.27 A.M.	7.19	7.57
7.57 P.M.	2.53	3.25
4.57 P.M.	5.42	6.15

Leave Frankfort 4.16 P.M. for Lex. 8.35

going west

Le. Paris	Ar. Lex.	Ar. Frankfort
7.28	8.15	8.20 - 9.12
9.24	10.08	
10.33	11.05	
2.10 P.M.	2.55	3.00 - 4.03
3.30	4.10	
5.50	6.33	Ar. 7.00 - 7.55
6.25	7.00	
10.53	11.25	

going east

Le. Frankfort	Ar. Paris
9.50	10.50 - 11.40
4.16 P.M.	5.25 - 6.07
8.33	9.35 - 10.32
2.50	3.22 P.M.
5.35	6.07 " "
7.20	8.02 A.M.
9.45	10.20 " "
11.00	11.40 " "

