

H.O. Ulrich  
No. 10.  
Central Pennsylvania.  
1909, 1916.

*Ulrich*

*1916*

U. S. GEOLOGICAL SURVEY

GENERAL BRANCH

**19**

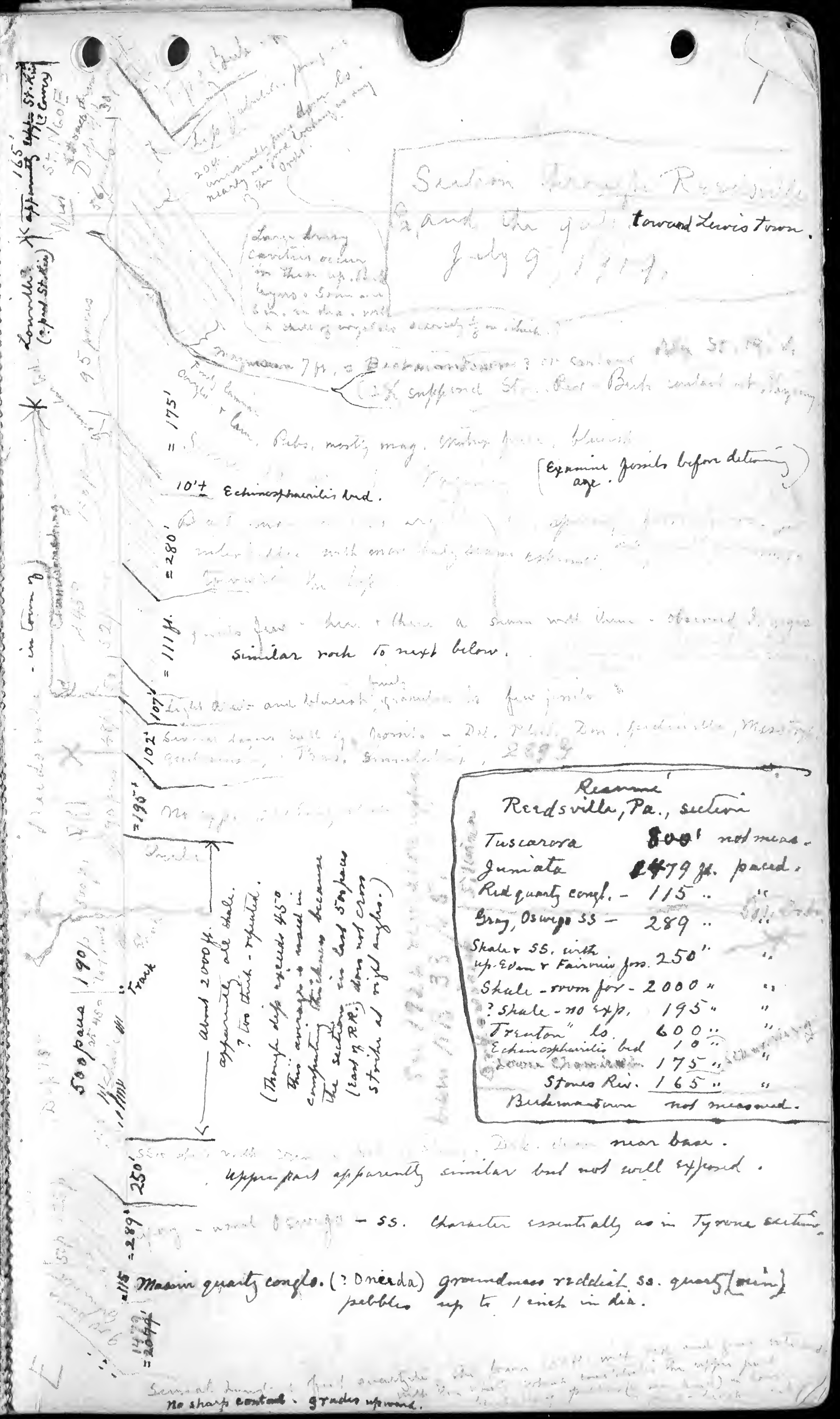
LOOSE-LEAF FIELD NOTEBOOK







- 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 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



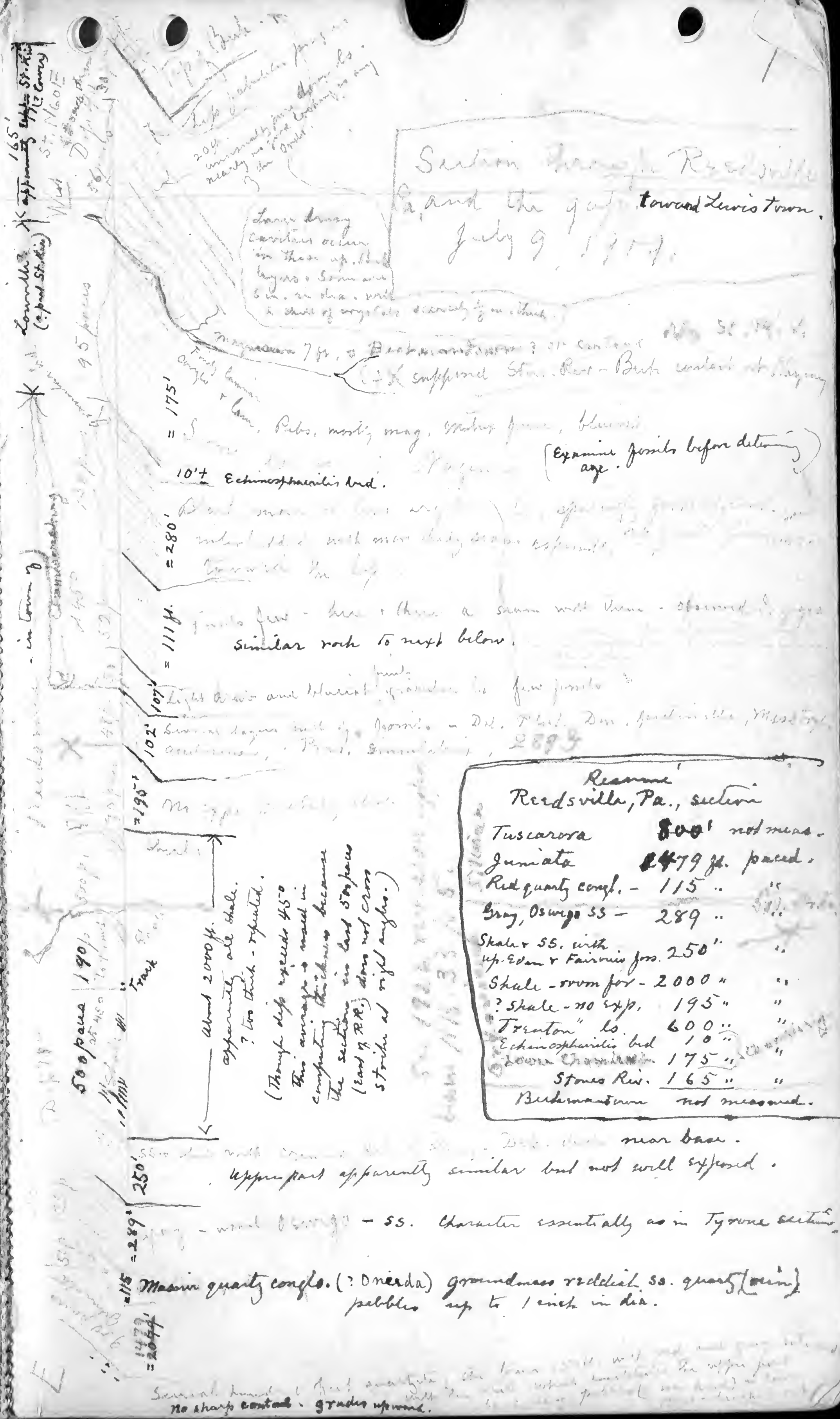






Eccyliopteris - O. disjuncta found by Kirk may be

- Conococheague cont'd.:
- Ozarkian in section at Allentown more like Shoenberger section than the true Conococheague - about as at Bellefonte . 41
  - Conococheague-Stonehenge section - in railroad cut about 5 miles south of Chambersburg . . 47
  - Conococheague Creek - in section, NW. corner of Chambersburg, wagon road crossing railroad at water tank . . . . . 49
- 19 Copper Ridge chert:
- may be - in section, Roaring Spring to Martinsburg . . . . . 27
  - Copper Ridge Knox - Roaring Spring to Martinsburg . . . . . 27
  - chert, reminding of - section, Clover Creek, 2 1/2 miles east of Martinsburg . . . . . 29
- Cumberland Valley railroad cut at Greencastle - section - with Butts . . . . . 45
- Danville, section 3 miles south of . . . . . 52
- Dauberville, south through Leesport to Ontelaunee Station - north from Reading - section . . 39
- Eden:
- fossils of - in section at Reedsville . . . . . 1
  - in section along Pa.R.R., Tyrone to Birmingham . . . . . 21
  - in section, Franklin Forge to View Point . . 25
  - Eden Oswego - in section south from Dauberville through Leesport . . . . . 39
  - shale and sandstone of - in section, west slope Tuscarora Mt. from McConnellsburg to summit, along Mercersburg pike . . . . 43
- Estimates:
- by Butts - section at Bellefonte . . . . . 13
  - section, Roaring Spring to Martinsburg . . . . . 27
- by Collie:
- section at Bellefonte . . . . . 13
- Fairview:
- fossils - in section at Reedsville . . . . . 1
  - sandstone of Fairview age - in section, west slope Tuscarora Mt. from McConnellsburg to summit, along Mercersburg pike . 43
  - limestone in section 3 miles south of Dauberville = upper half of . . . . . 52



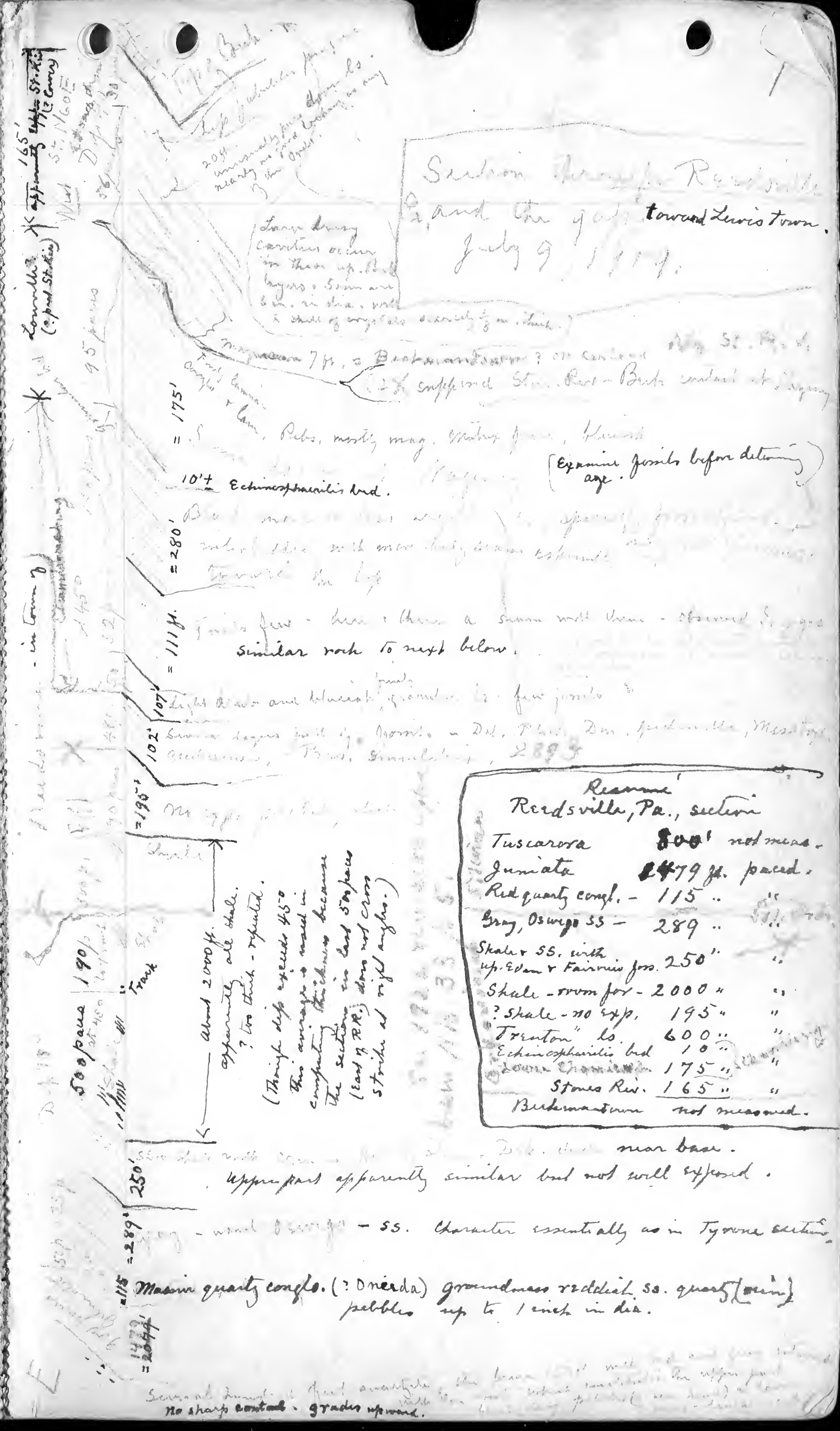
Section through Reedsville and the gap toward Lewis town. July 9, 1917.

Reedsville, Pa., section

Tuscarora	800' not meas.
Juniata	2479 ft. paced.
Red quartz congl.	115 "
Gray, Oswego ss	289 "
Shale ss. with up. 20m & Fairview foss.	250 "
Shale - some foss	2000 "
? Shale - no exp.	195 "
Trenton ls.	600 "
Echinophanilia bed	10 "
Lower Juniata	175 "
Stones Riv.	165 "
Berkhamstown	not measured.

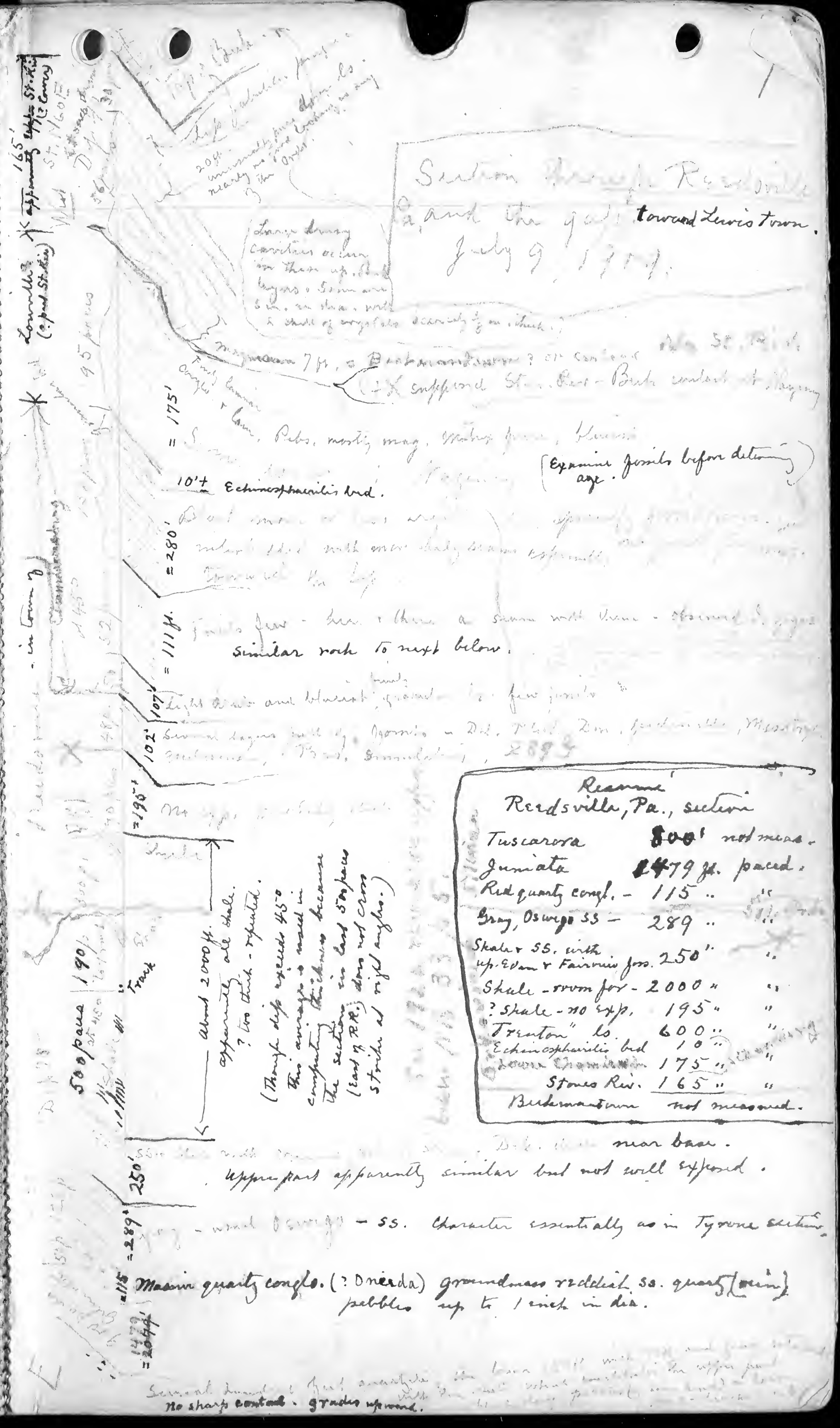


- Fossil zones I-VI - in section at Bellefonte . . . . . 13
- Franklin Forge to View Point - section . . . . . 25
- Franklin Forge quarry - in section, Franklin Forge to View Point . . . . . 25
- Frankstown branch of Juniata - in section, Franklin Forge to View Point . . . . . 25
- Ferndale, Pa. - in 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., 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 . . . . . 35
- 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 Pleasnt Gap, "White Rock" quarries . . . . . 15
  - in generalized section, Bellefonte, Pleasant Gap, and Lemont . . . . . 19













Mariopteris  
 Neuropteris biformis Lesquereux (Tennesse formation)

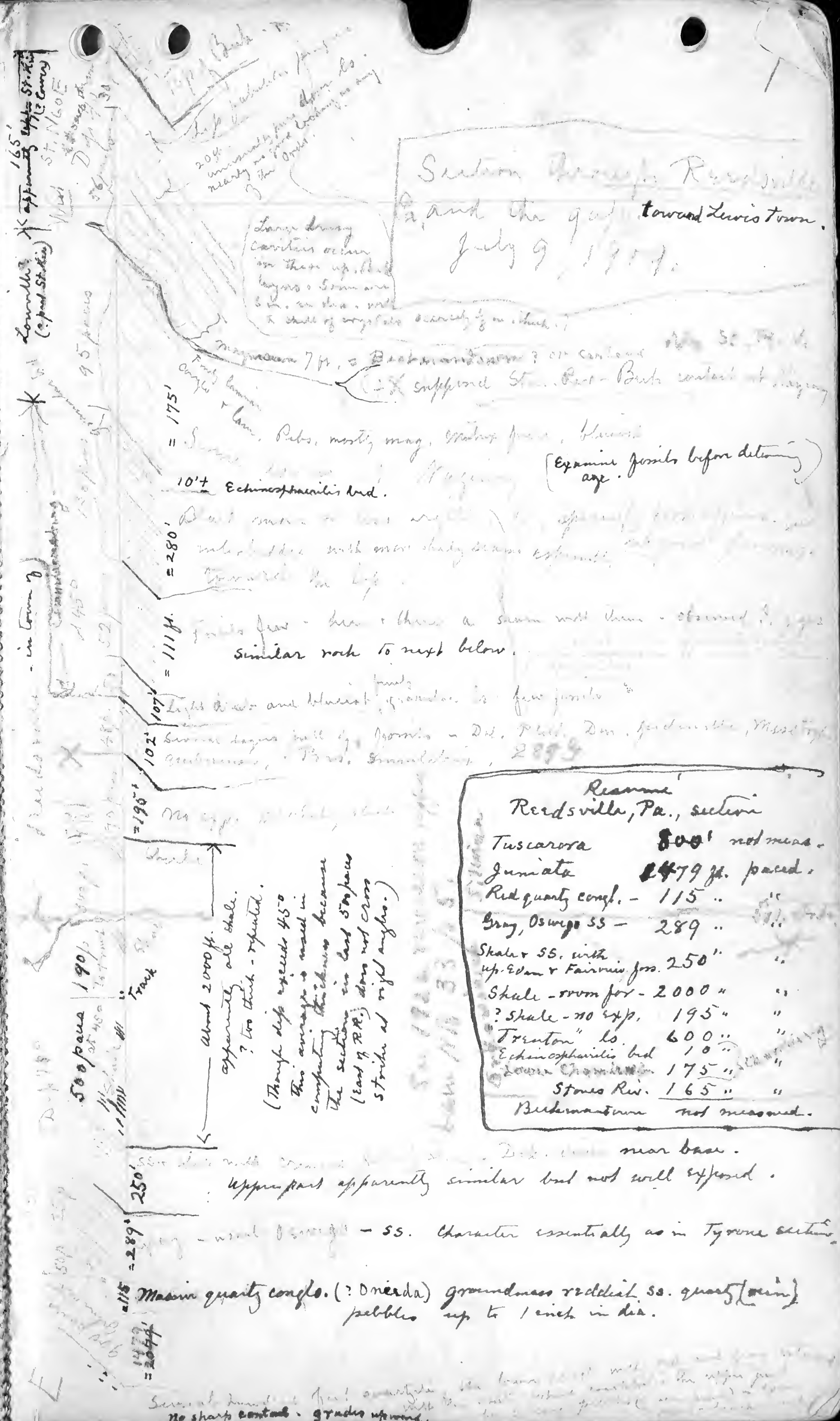
Nittany Furnace House, opposite - in section at Bellefonte . . . . .	13
Nittany dol.:	
in generalized section between Bellefonte and Pleasant Gap and Lemont . . . . .	19
in section, Roaring Spring to Martinsburg .	27

165' \*  
 with \*  
 (St. Louis)  
 165' \*  
 opposite  
 (St. Louis)  
 St. Louis  
 165' \*  
 opposite  
 (St. Louis)  
 St. Louis  
 165' \*  
 opposite  
 (St. Louis)  
 St. Louis



Quarries:

- Cambria Iron Co., at Haginey - 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,  $\frac{1}{2}$  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 Haginey 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











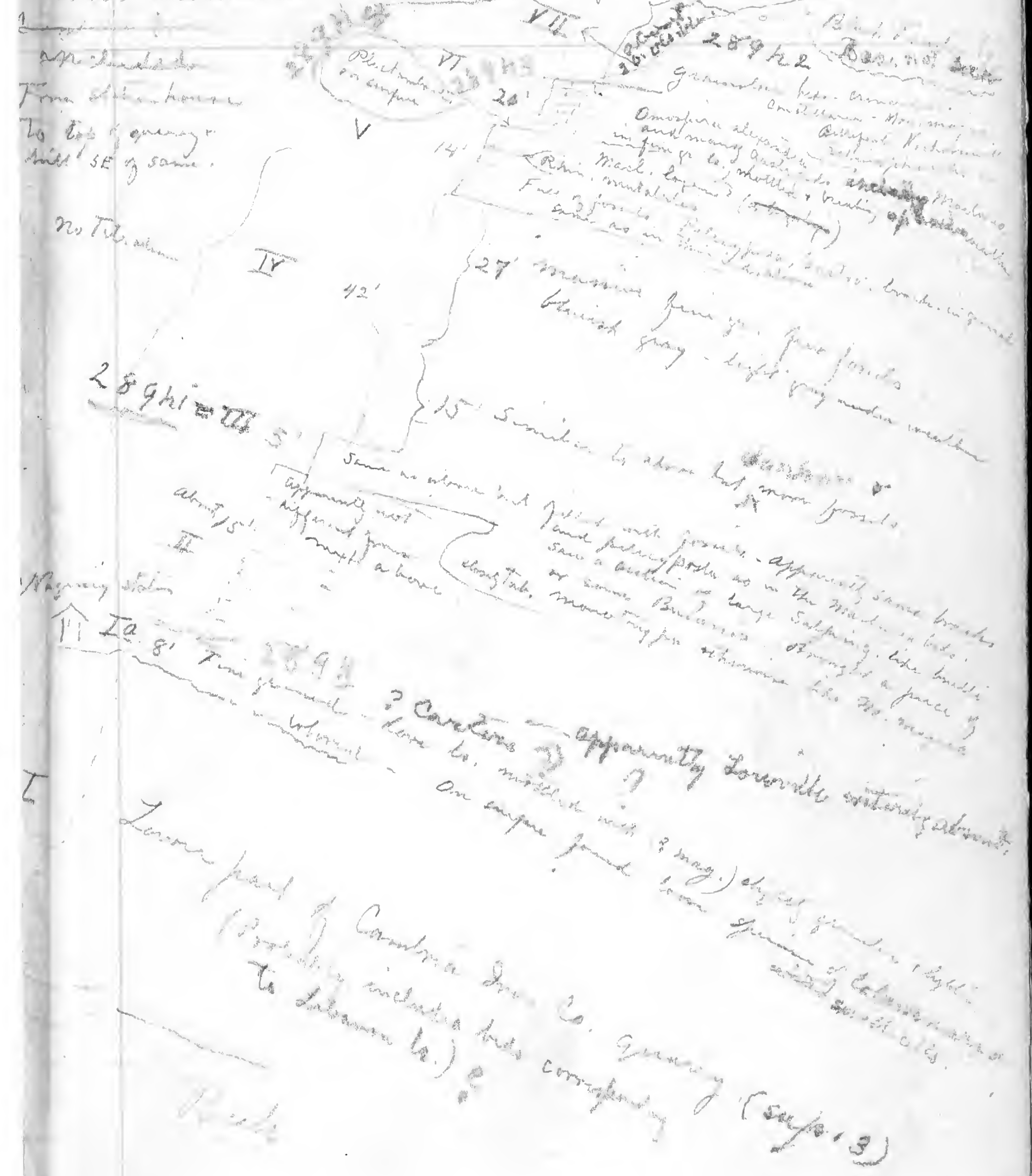






Aller  
Azema  
Bald  
? Bec  
b  
r  
Beekm

Section at Nazany Station 3 or 4 m. up valley  
Near Lovisville. from Russellville. probably 35 ft.



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

(Compare with F3 of Pa. reports)



6

7

Allen

Axema

Bald

? Bec

bu

r

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l

l

t

c

i

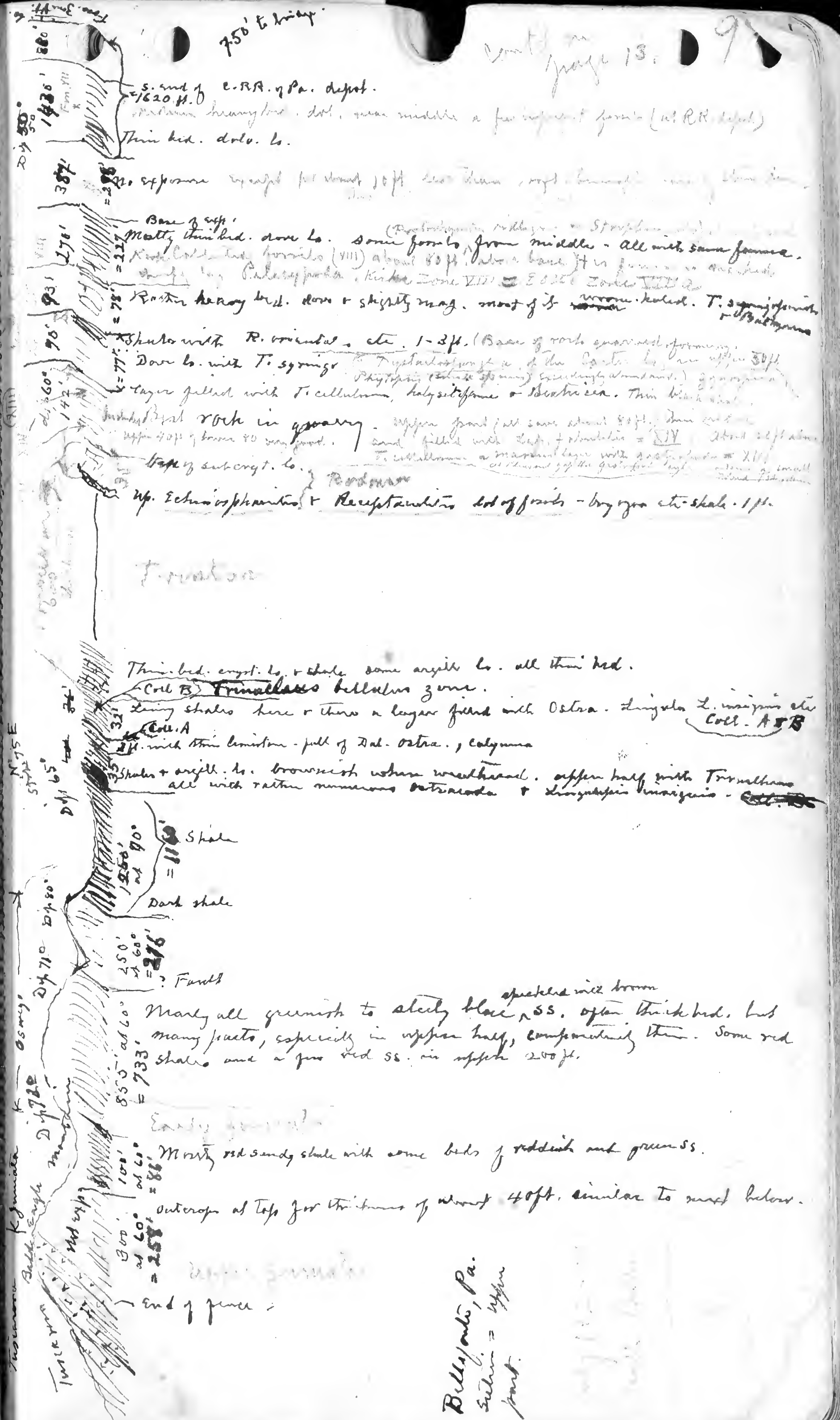
i

c

i

i





750' E. bridge  
 s. end of e. RR. of Pa. depot.  
 1620 ft. 1436'  
 Thin bed. do. ls.

387' = 388'  
 Base of exp.  
 Mostly thin bed. dove ls. Some fossils from middle - all with same fauna.

178' = 177'  
 93' = 92'  
 78' = 77'  
 R. orientalis, etc. 1-3 ft. (Base of rock exposed forming.)  
 Dove ls. with T. syngis  
 Layer filled with T. cellulosa, Halysites, etc. Thin bed. do. ls.

70' = 69'  
 60' = 59'  
 147'  
 Upper part of rock in quarry. Upper part full same about 80 ft. Thin bed. do. ls. filled with shells, + small fossils. About 20 ft above T. cellulosa a massive layer with a few small fossils.

Top of sub-crypt. ls.  
 Up. Echinospira, etc. lot of fossils - by you etc. shale. 1 ft.

T. ovalis

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

Long shales here or there a layer filled with Ostrea. Lingula L. insignis etc.  
 Coll. A  
 2 ft. with thin lamination - full of Dal. Ostrea, Calymene

35' = 34'  
 Shale + argill. ls. brownish when weathered. upper half with Fornallates all with rather numerous brachiopods + Lingula L. insignis - Coll. C

11' = 10'  
 Dark shale  
 250' = 249'  
 Fault

850' at 60' = 849'  
 733' = 732'  
 Mostly all greenish to steel blue ss. often thin bed. but many faults, especially in upper half, compartmented them. Some red shale and a few red ss. in upper 200 ft.

Early greenish  
 100' at 60' = 99'  
 88' = 87'  
 Mostly red sandy shale with some beds of reddish and green ss.

300' at 60' = 299'  
 253' = 252'  
 outcrop at top for thickness of about 40 ft. similar to next below.

End of piece

Bellefonte, Pa.  
 section = upper part.



Alle

Axem

Bald

? Bec

t

I

Beekn

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 *B. striata*, *gast. ceph.* etc., above which is a hard ls. layer covered with *Tetradium* c. 2" in thickness.
- 1 1/2' Fine sh. shale.
- 4 1/2' Dark colored fine grained ls. similar to beds first described.
- 1' Carbonaceous shale.
- 2' Dark colored with particularly no fossils in section.
- 2 1/2" capped by shaly fossiliferous band.
- 11" massive bluish ls. w. irregular fracture.
- 6' Dark bluish dark ls.
- 6'-8' Buff colored, thinly bedded at top and bottom massive (3') in center. The lower portion has trilobites.

Above this comes the massive blue quarry beds.

(Copied from 1919 notebook)



Do not read downward from p. 9.

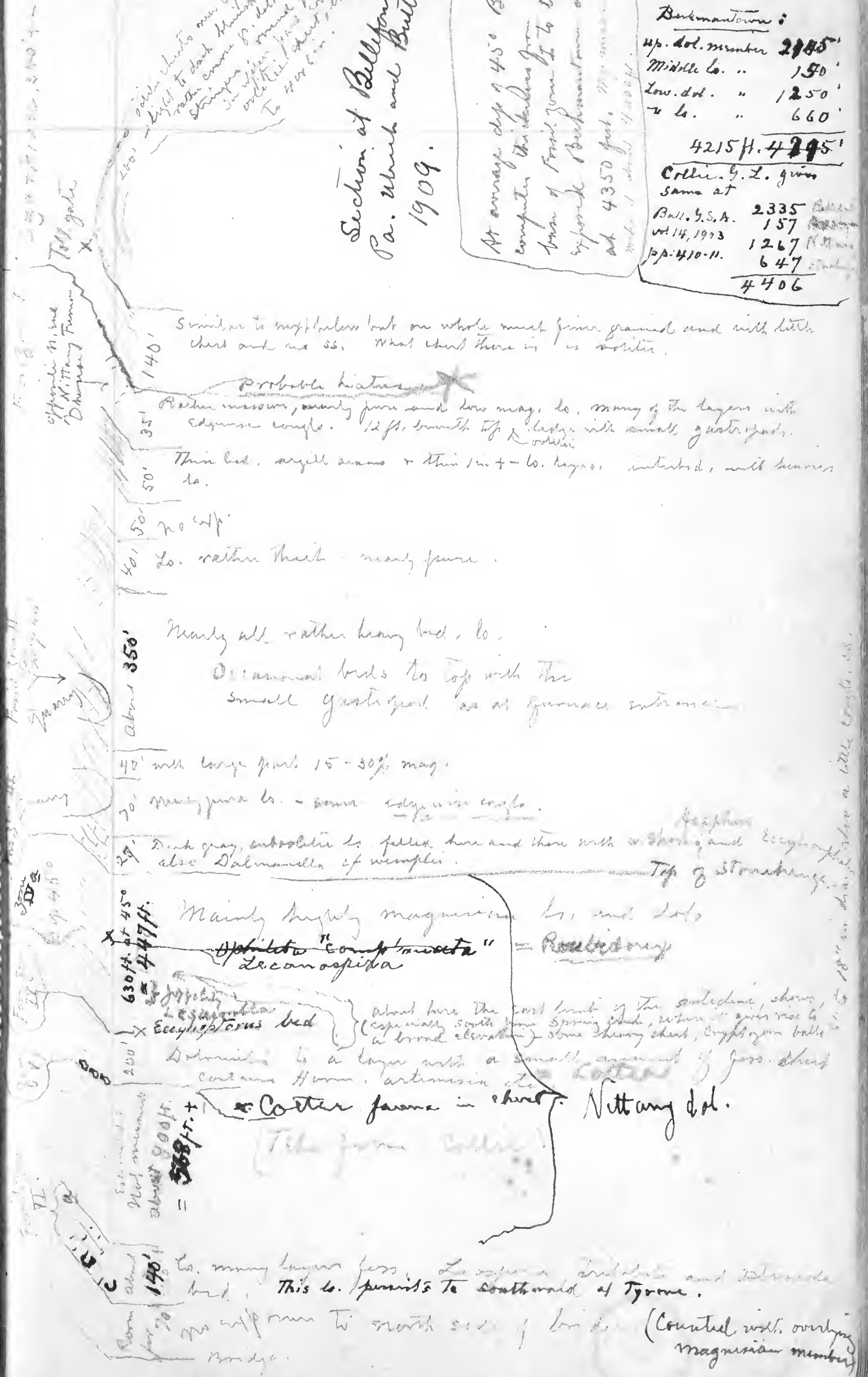
gales vents on top  
light to dark bluish gray  
with some of the same  
straggling  
in which some  
of the shells  
to 400 ft.

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

At average dip of 45° Butts  
computes the thickness from  
base of fossil zone to top of  
exposed Beekmantown sh. at  
4350 feet. 1909.

Beekmantown:

up. dol. member	2185'
Middle lo. "	150'
Low. dol. "	1250'
u lo. "	660'
4215 ft. 4245'	
Collin. G. L. given	
Same at	
Bell. G. S. A.	2335'
Vol. 14, 1903	157'
pp. 410-11.	647'
	4406'



18" or so sh. below a little congl. ss.



9-161.

4257 UNITED STATES GEOLOGICAL SURVEY. 425 P.

Copy of this label put with Coll.

Field: *Mudum bed of the*

Name: { Determined: *Strom Rine group (Lash)*

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

Collector: *Wright & Butler*

Date: *June 27,*

Note Book: *1916*

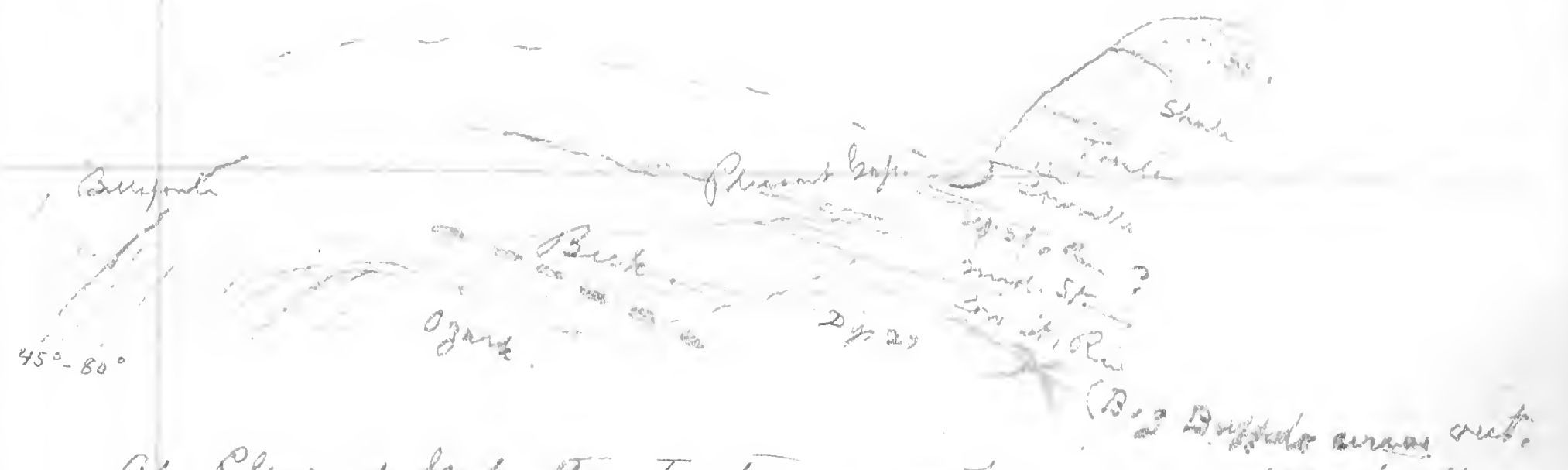
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Memoranda:

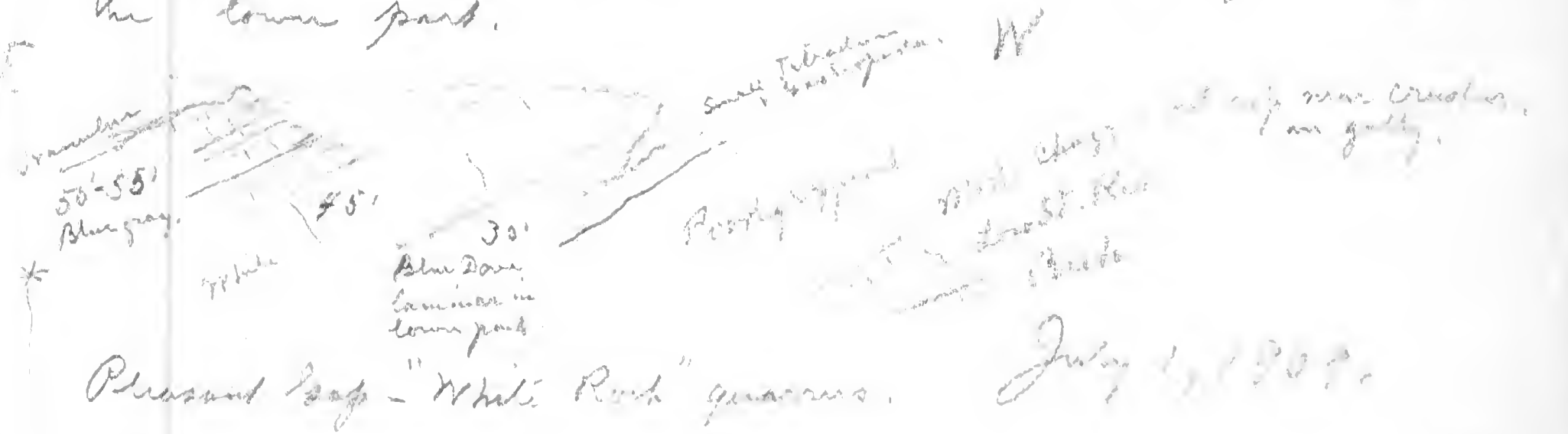
*16' Tron*

*8-1907*

*Carlin*



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



950 ft. at 20% = Strom Rine = 323 ft.

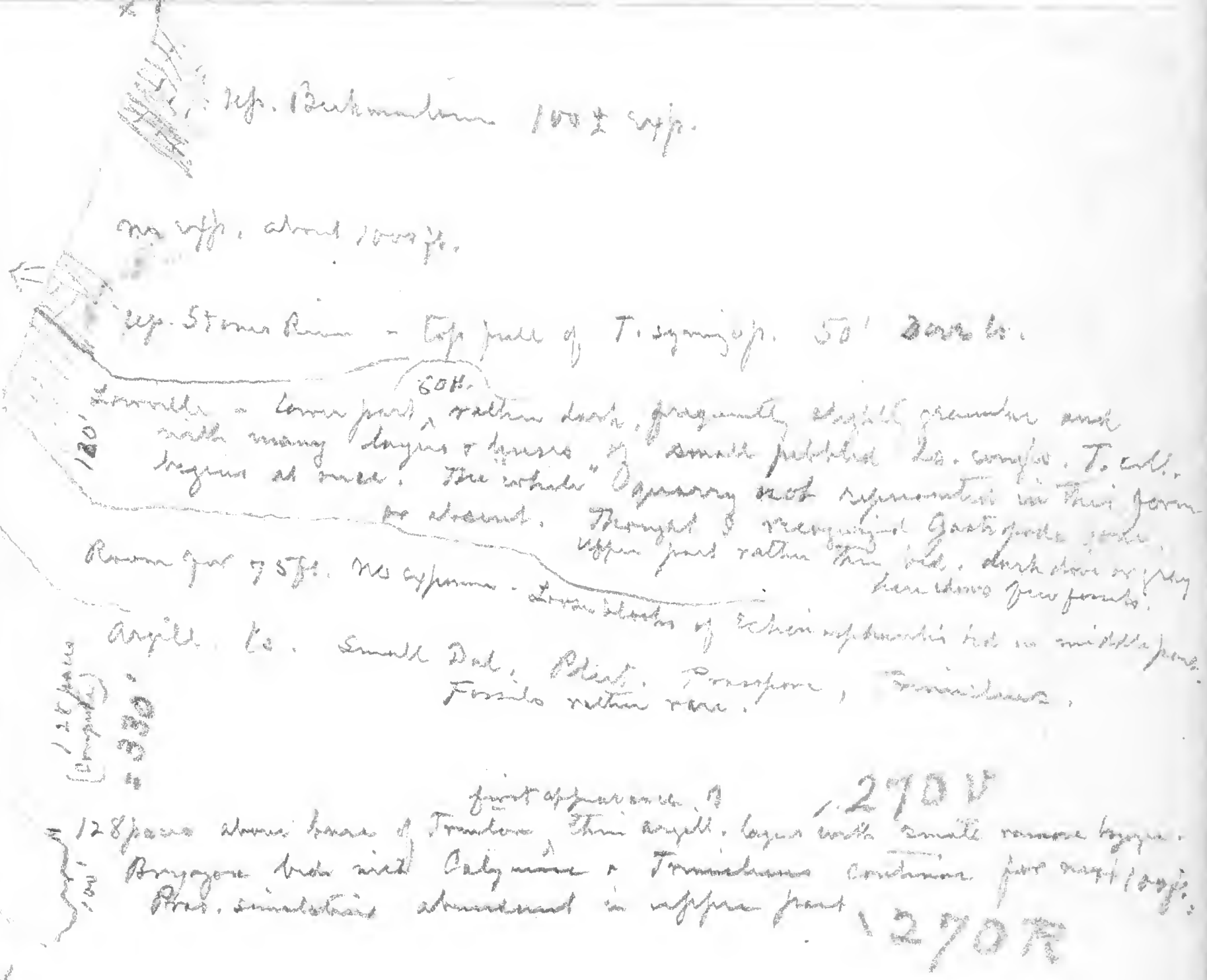
950 ft. at 20% = 50% for all = 370 ft.

\* This bed contains *Madama biplex* in abundance - especially in its lower half also *Liv. vitium*, *L. purpur*, *Rhynchonella*, *patriculata*, *Lep. patulidus*, *Stromodonta myosina* and many other fossils. Well exposed on R.R. cut at Dumont. Fossils occur in the massive bed beneath but not very abundantly except in thin seams. They occur principally of Ray's *myosina*.



Oriskany shale

RR cut



Dip 60°

128 paces  
= 330'

1 mi. N. of Oriskany, Pa.

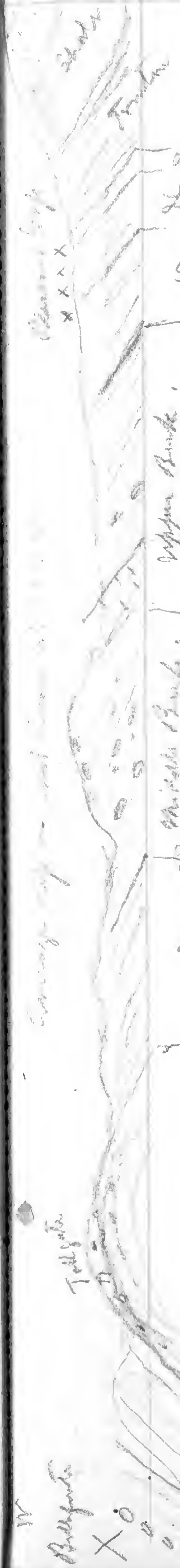
Probably 150-200 ft. from Tomlinson

\* This point is well shown on 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. But referred to a probably one of the subgranular ls. in zones 21 to 23 in Berkhams section. A fault is suggested at Limestone.



Generalized section between Bellefonte and Pleasant Gap and Lemontia

July 1, 1909.



granular ls. = Robinson - coll. 425j Echinosphaera  
Lorville 1200 beds

Stones River

Dol. Bellefonte dolomite

Lo. fossiliferous - Rensselaer limestone

Mittony 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. + granules very small, leaving corresponding holes in places. Ss. associated are siliceous 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 same shape of which are in contact. This part is correlated with the Mercedensis area. The Cryptozoa should be compared with C. studei.

Lower Bank ls.

Stonewall ls.

\* Can this be the Sphaerodiplosia that Kinch thinks he has found in this horizon at Bellefonte? May be confusion here.

Lower Bank ls. (Stauffordville member)

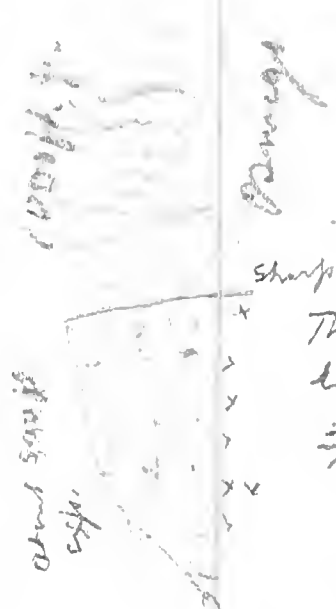
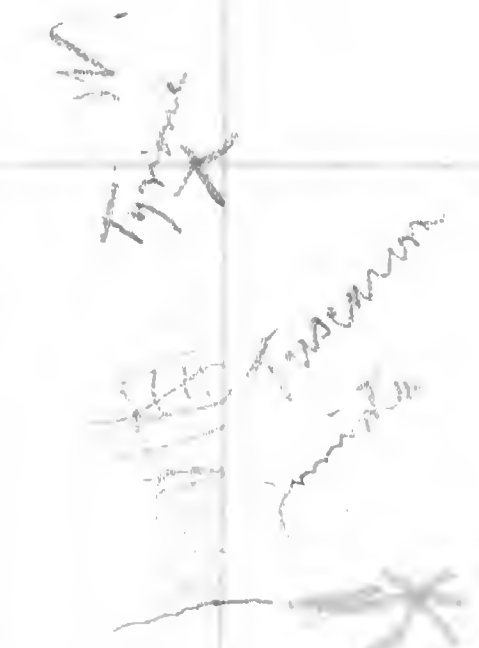
Bellefonte



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

July 2, 1949.

(Continued next page Brimmer to  
Gardner)  
(Butler section gives measurements)



sharp ledge of greenish gray ss

Thin irregularly bedded ss. generally fossiliferous and a few layers (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 pterygotes and Orthochymenia - Pterygotes continue down some 200 ft. Then come in *Platystrophia*, *Dal. multisepta*, *D. striata* & other bryozoa.

The first (upper) plant, or rather large bed in lower 100 ft. a small fauna (some at Chambersburg etc.) with small graptolites.

All below and higher - perhaps to base of Mr. Williams' W. is a little above the small plant, a layer with *Leptopora*? etc.

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



granular ls.

*Echinospira* somewhat stony

Loville grading upward into granular bed - the face contains great numbers of the bryozoa and an occasional *Echinospira*. With them *Platystrophia*, *Asper*, *P. pinnata*, *Dal. pectinata*, *Rhynch. sp?* *Camarella* *rotundata*. A few of these bryozoa occur in fragments 4-6" of rock quarried. Best rock in middle part of quarry but all is somewhat rounded with granular streaks and the whole is darker in color than at Bellefonte & Pleasant Gap. Reminds much more of the Lenoir and Oakhall Loville facies.

Basal layers seem to correspond to the gastropod bed in the Bellefonte section. About 20 ft from top abundant *Madama* highly, *Lepta*, *Lepta*, *Lepta*.

A quartz, quartzite and fractured and metamorphosed by ground, quartzite with a cherty ls. and shale beneath it. Contact between two very irregular. The ls. is unquestionably Stens from after much search found *Tetr. syriaca*, *Dal. subabundans*, *Lepta*, *Lepta* and *Waldronia* bryozoa, *Actinouras?* *Lepta* of *retrovia* *Lepta*, *Lepta* and other gastropods - also *Lepta* of *retrovia*. Took no 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.

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

massive to possibly lower but <sup>regard of</sup> basal section with <sup>crystal.</sup> ~~crystal.~~ <sup>conglomerate</sup>

Thin bed. dol. some of it suggesting  
 concretion.

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 <sup>concretionary</sup> ~~concretionary~~ <sup>bedded</sup> ~~bedded~~ <sup>bedded</sup>  
 About 1000 ft.

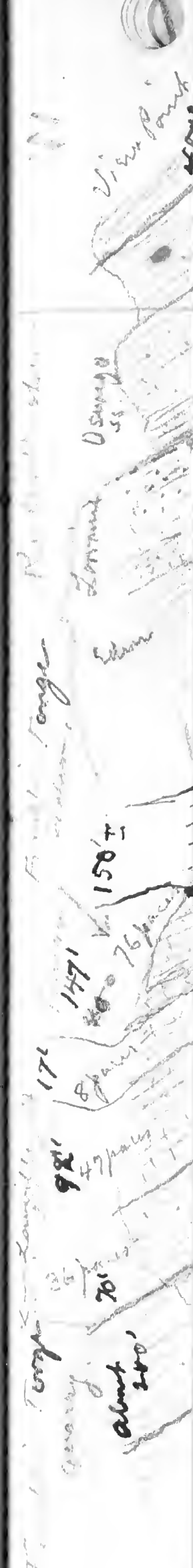
East

St. Louis

Birmingham to Shouberger  
 (Birmingham to Tyronne on preceding page)  
 July 2nd 1909.



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



Bluish gray + greenish ss. with slight occasional seams 6" - 4 ft. of sandy shale } Not a sign of fossils? marine.

Hard bluish ss. 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 in containing *Plectambonites* *Orthis* *Orthis* *Orthis* + *Platystrophia* about 16 ft. beneath top. *Bygonia* *Murchisonia* *Strophomena* less than 4 ft. from 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, numerous limy layers, 1-4", filled with Eden fossils. *Dol. multisepta*, *Dol. abricus*, *Bal. junoni*, *Call. sigill.*, *Protomurchisonia cancell.*, *Bygonia concinna*, *Plectambonites*, *Lophospira* etc. ca. out.

Shaly upper half shown on N side of Franklin Forge branch of the Juniata Riv.

argill. dark pl. in rather low plates: 40-50 ft. dark base and thin to end of exposure. *Plectambonites* with usually thinner layers of shale in lower half.

slight granular ls. with *Schizophoria* *Junonia*, *Trochospira* *fabricatella* here. No unconformity apparent. *Strophomena* but thin lower, most of it mottled with fine string and bluish weathering 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. *Murchisonia* in upper half, all fossils hard to get out. - *Raf.* + *Stroph.* in middle part especially.

ls. with bryozoa + new *Cameras* *ls.* 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 Lanville and the mid. change at Plattburg. (Fossils occur) mound of shaly ls. and are hard to get out. Beak. sharp, the lower surface undulating and covered with a scale to 3 inch layer of small pebbled impure. Beak. may ls. Both in one layer, slightly commuted.

- This section is peculiar:
- 1) The Stones River seems to consist of middle division (mid. change) only. It is of the eastern type remaining greatly of *Lanville* and *Chonetes* representing in lithology + fossils, *Platystrophia* in form of *Chazy* type, same as *Platystrophia* type.
  - 2) The Lanville - Black Run - *Ranunculus* with long ones present little or no evidence of *Protomurchisonia* - may be continuous sedimentation.
  - 3) *Tetras*, *Callinectes* - rare in this section. This is probably due to the fact that the basal part of the Lanville, in which this fossil is chiefly prominent, is here absent. an hiatus occurs between mid. St. Riv. + the *Chazy* but the Lanville. (see Plattburg section)

Important in middle Chazy distribution

My total for Stones River Lanville about 740 ft. *Bulla* estimates and numbers of

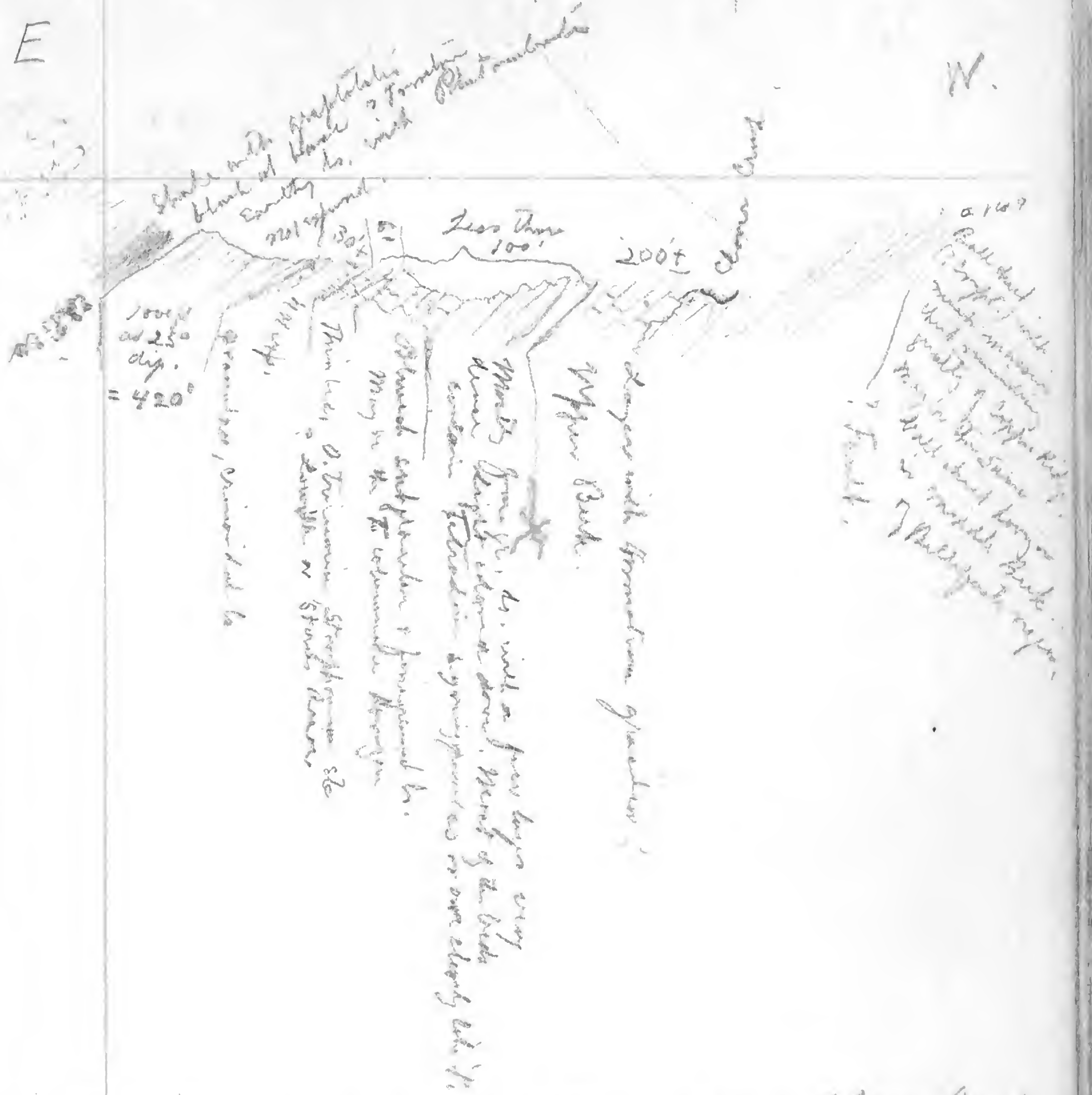






E

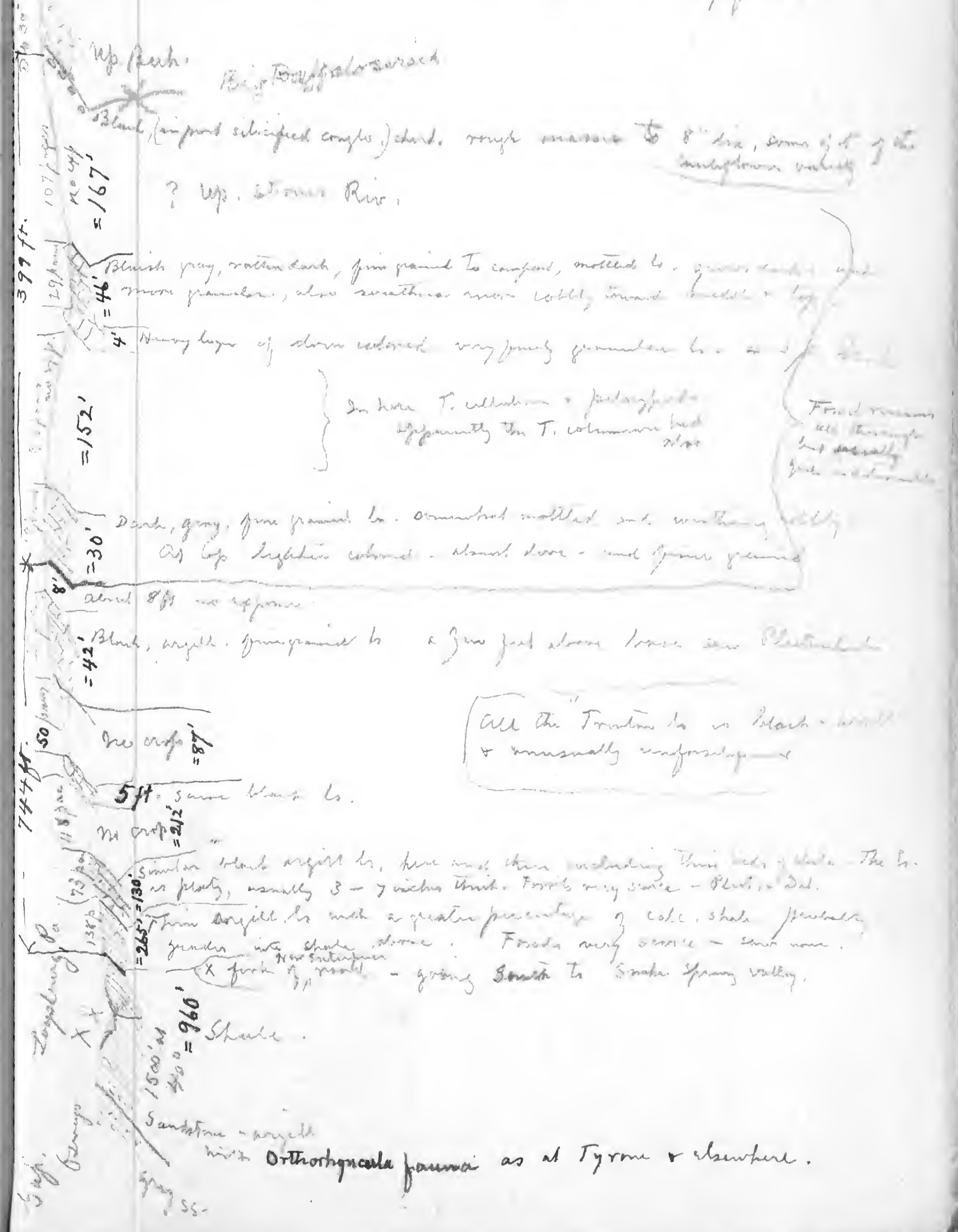
W.



Provisional & sketchy section across Clover Creek  
 about 2 1/2 mi. E of Martinsburg, W. Va.  
 July 7, 1907  
 with Butler.



Section at Logstown, Pa. from  
 gap westward. — July 8<sup>th</sup> 1909  
~~The section is not completed~~ 34 feet









July 10, 1919

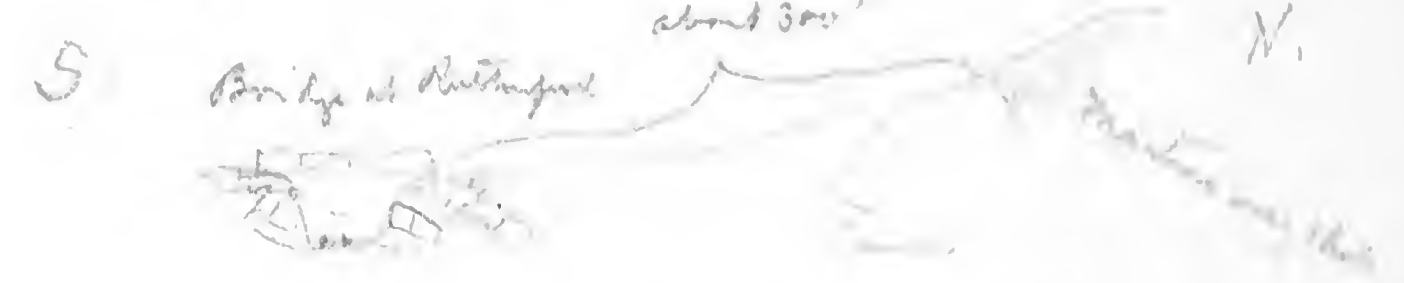
Rutherford, Pa. - 5 m. e. of Harrisburg

In R.R. cut at Rutherford Berks limestone dol. & ls. shows in great detached masses, over and between them being a shale <sup>the material</sup> that probably represents the residual material after decomposition of the ls. The latter contains <sup>thin laminae of quartz</sup> material.



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 <sup>Berks ls.</sup> <sup>east of these</sup> 1/4 to 1/2 m. west, the outcrops being within 100 ft. of the shale hills.



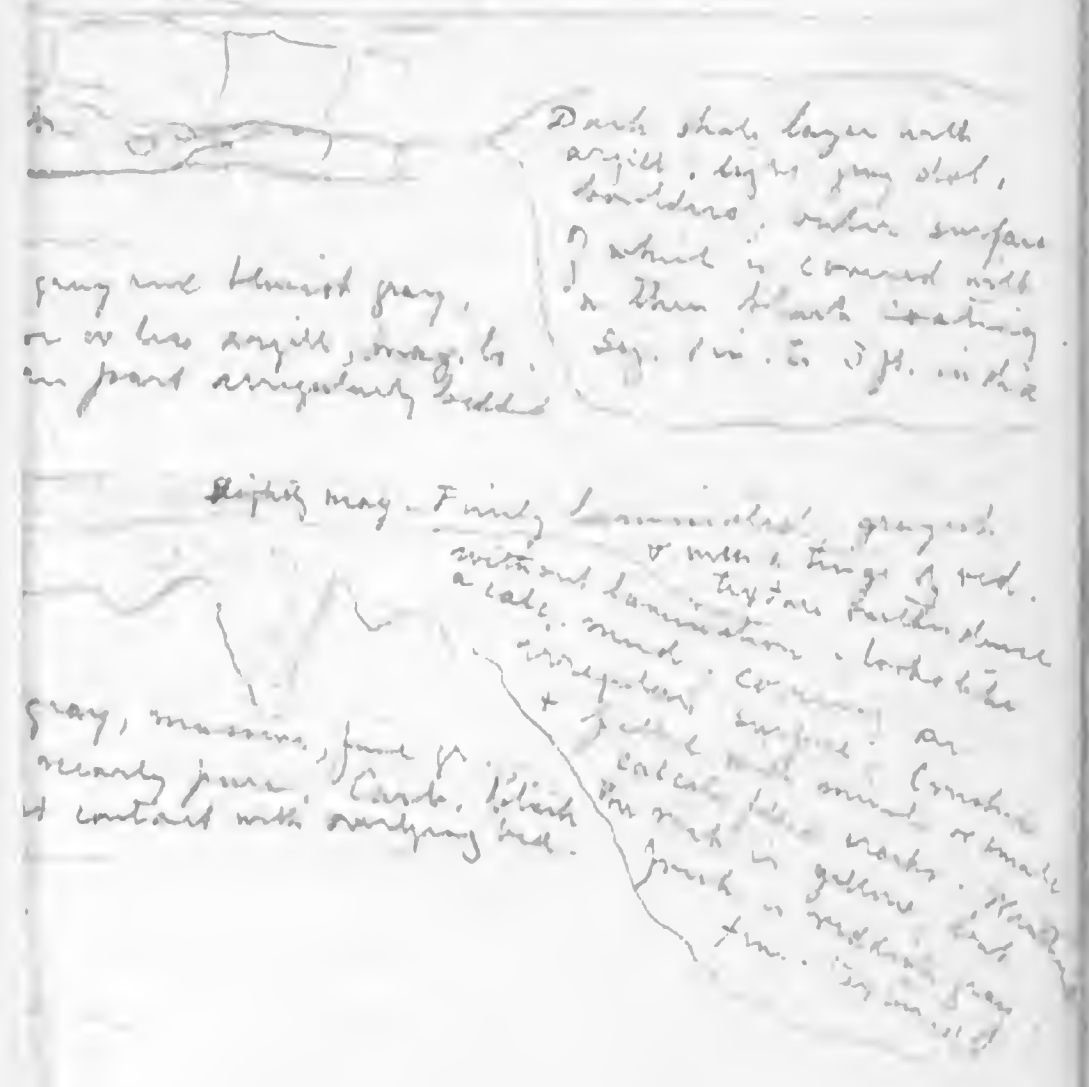


\* Ogishville Cambrian

Kaekenderfer  
City limits. N.B.

July 10, 1904.

quarries  $\frac{1}{2}$  mi. east of  
Harrisburg city limits



... (part of the structure is rolling 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 erosion  
channel.



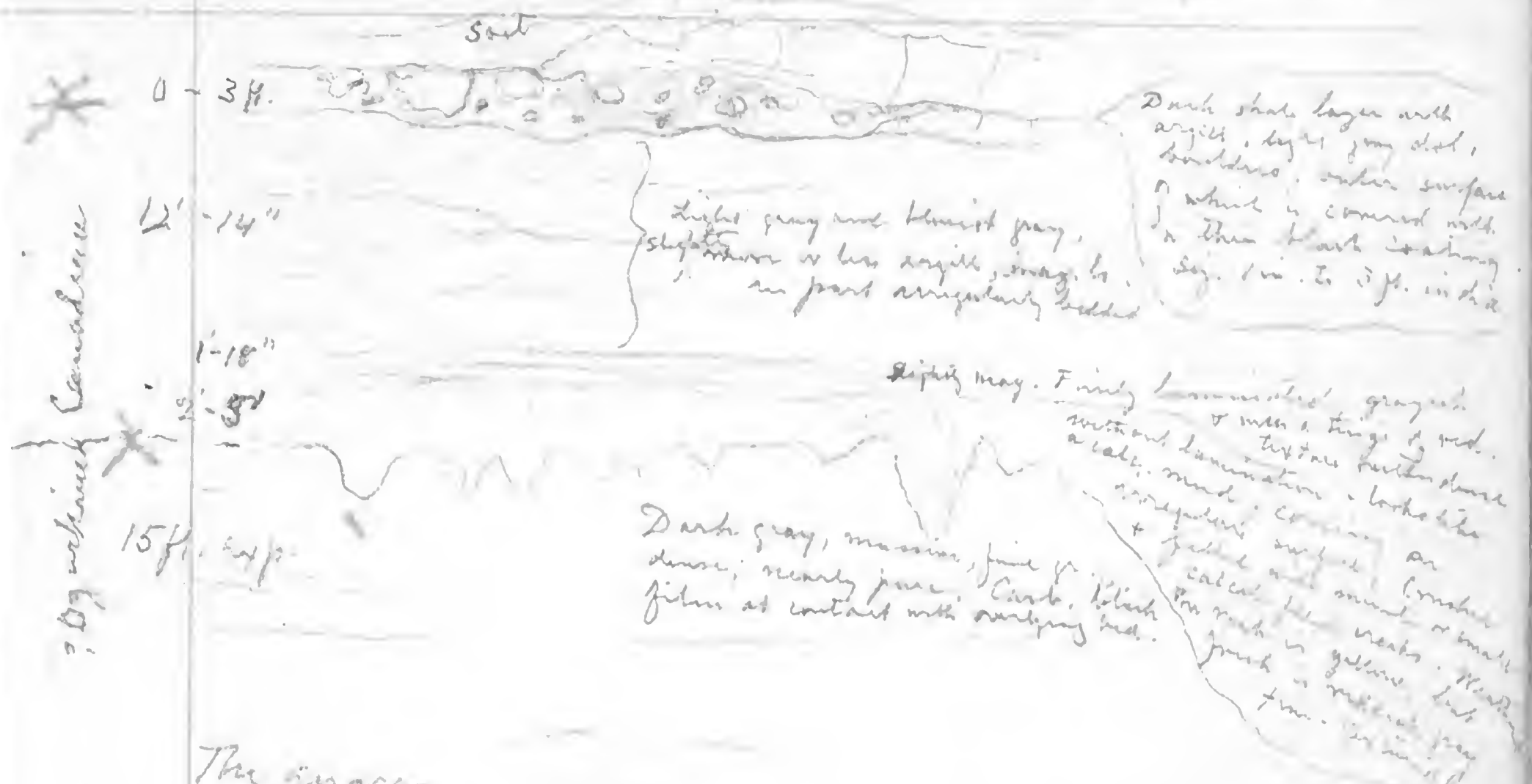
These quarry beds are mostly low in magnesia. The  
frequent suggestion of a pink tint, as also their nearly  
pure character and fine texture, is strongly suggestive  
of the similar beds in the lower Camb. of the  
Chambersburg area. Fossils are very rare. Saw only  
two - both badly preserved gastropods,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

I am coming north from the large quarry at edge  
of city the Road. R.R. is crossed on a bridge spanning  
a deep cut. Above the dip in the quarry is nearly rolling  
(though turned  $5^{\circ}$  up at the north edge) on the cut  
they dip at 50 degrees south - and then within 350 ft of the  
large shale either the beds  
bends down again very sharply or there is  
a fault. In line to latter  
view.



July 10, 1909.

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



The quarry  
seems to be about  
in axis of anticline - but the structure is rolling and  
doubtless complicated - the rocks

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 mostly  
pure character and fine texture, is strongly suggestive  
of the similar beds in the lower Cambrian of the  
Chambersburg area. Fossils are very rare, saw only  
two - both badly preserved gastropods, scarcely an  
inch in diameter that might belong to a chamber  
Murchisoni. They were not Ophileta. These 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 rolling  
(though toward  $\frac{1}{2}$  mi. up at the north edge) in the cut  
they dip at 50 degrees south - and this within 350 ft of Postburg  
burg shale. Either the beds  
beneath down as a very sharply or there is  
a fault - In above the latter  
view:



See page 38 for more (just 21.7)  
Dawsonville Sta., Reading Rd  
N 40 W

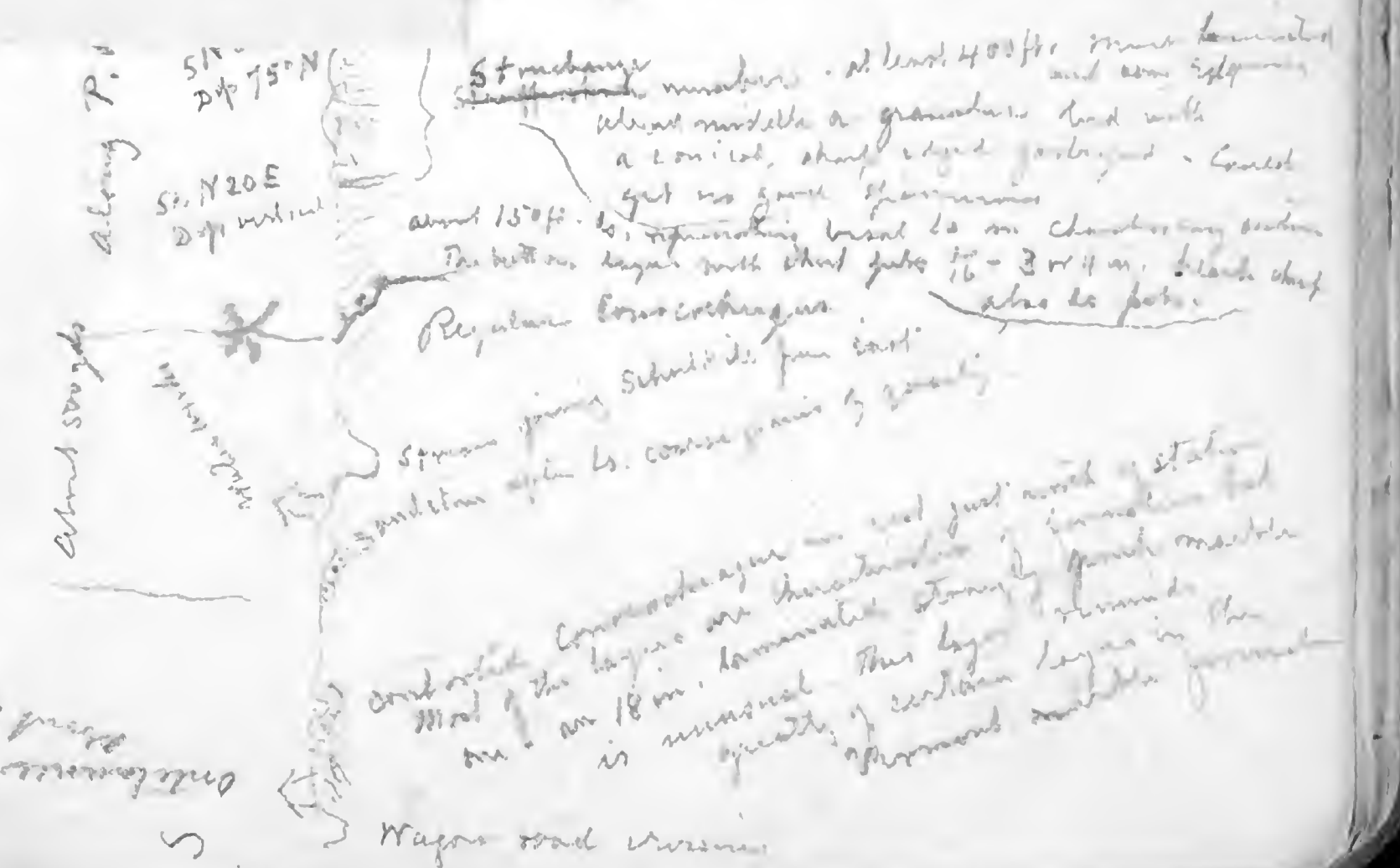
Dawsonville

7 1/2 63 E.

Lugport - on west side of Schuylkill Rd  
W 1/2 1/2

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

Oatkaunee Sta.  
Wagon road crossing



(? See page 38)

ll. ls. on thin plates alternating with thin  
grains not uncommon while in the upper  
conglomerate with flattened pebbles  
observed. The occurrence of such phenomena  
l. Fossils must be very rare - saw

exposed about 100 ft. of Bank  
The middle third is irregularly jointed and  
speckled with white remaining of St. Louis  
unit. No fossils seen.  
The lower 2/3 with continuation of same in east is  
probably due to chert ls. irregularly laminated  
ls. with irregular veins. The lower section  
remain in description of ls. in the St. Louis  
member. The latter simulates shale  
like the lower chert, but may be the same  
next to the 3000 weather like coarse jointed rock.

apparently same rock as in preceding quarry  
at anti-cline station  
west 200 ft. exposed

about 300 ft. more nearly vertical

change of strike

probably same quarry bed

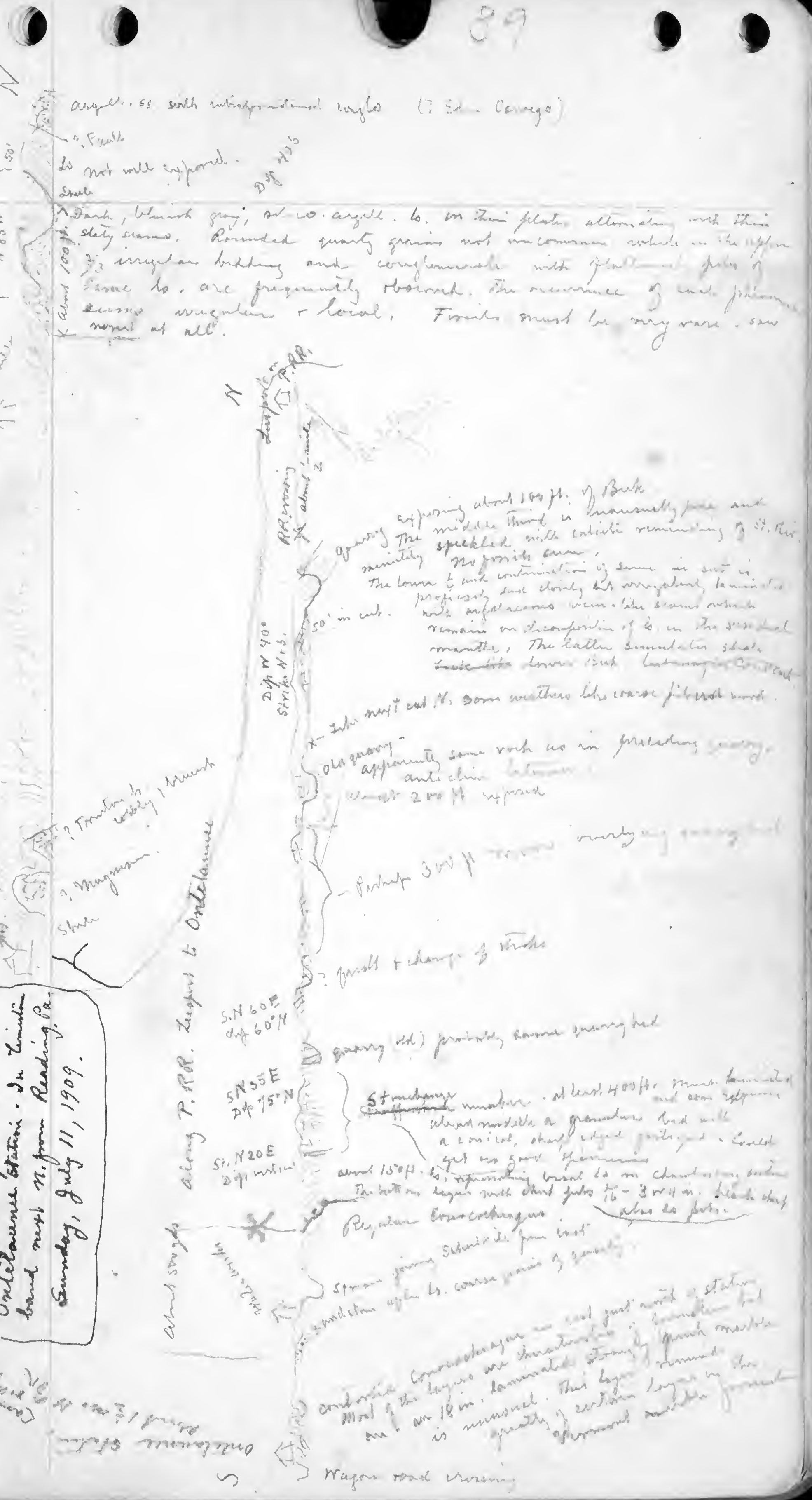
Kokenderfer  
city limits. N.B.

carry  $\frac{1}{2}$  mi E. Hamburg Pa  
Page 37. 1909.



Section S. from Dauberville through Leupport to Ontelaunee station. In line with road west N. from Reading Pa. Sunday, July 11, 1909.

Leupport - west side of Schuylkill R.R. Dip 40° N 40° E. 150' 140' 130'



argill. ss. with interstratified layers (? Eden Covego)  
 Fault  
 do not well exposed.  
 Dark, bluish gray, sil. argill. ls. in thin plates alternating with thin slaty seams. Rounded quartz grains not uncommon, which in the upper irregular bedding and conglomerate with flattened pebbles of same ls. are frequently observed. The occurrence of such pebbles seems irregular & local. Fossils must be very rare - saw none at all.

exposed about 100 ft. of bulk  
 The middle third is laminae pale and minutely speckled with calcite remaining of St. Louis. No fossils seen.  
 The lower 2/3 with continuation of same in part is profusely and closely bedded, laminated with irregularly bedded, some which remain in disintegration of ls. in the sandstone matrix. The latter simulates shale but the lower part containing coarse fibrous rock.

old quarry - apparently same rock as in preceding quarry, but about 200 ft. exposed

perhaps 300 ft. - mostly argill. sandstone

quarry (old) probably same quarry bed

5' thickness  
 massive - at least 400 ft. much laminated and some exposure about middle a granular bed with a conical, sharp edged pebbles - could get no good specimens

about 150 ft. ls. - alternating bed ls. in characteristic section  
 The bottom layers with about 16 - 3 or 4 in. black clay also ls. pebbles.

Some young Schuylkill fossils  
 sandstone upper ls. coarse grains of quartz

containing coarse grains in bed just west of station  
 Most of the layers are characterized by granular bed  
 on an 18 in. laminae strongly granular  
 is unusual. This layer is much  
 greatly of certain layers in the  
 prominent middle portion

Section S. from Dauberville through Leupport to Ontelaunee station. In line with road west N. from Reading Pa. Sunday, July 11, 1909.

Ontelaunee station  
 Wagon road crossing

July 13<sup>th</sup> 1909.

Allentown, Pa.

Lingulella <sup>trigona</sup> in either Stonehenge or in upper Conococheague opposite Tronada Wherry's loc. 4524. Considered later that it is up. Conococheague = lower Little Falls loc.

(of Allentown formation)  
Lower Conococheague with frequent Cryptogonion? bands. They make continuous layers 2 to 10 inches thick. An interesting feature in the mode of occurrence

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

The lower laminae however are sharply undulating, each one about 1 inch across - or more properly diameter. This part looks like what I know as the

Conococheague *C. pedigerum*. Between the basal and top laminae the undulations grow gradually less.

As a rule the Crypt. is undulated by 1-2 in. small ( $\frac{1}{6}$  -  $\frac{1}{4}$  in) probably to corals, 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 more than 50 feet thick. about as at Pottsville.



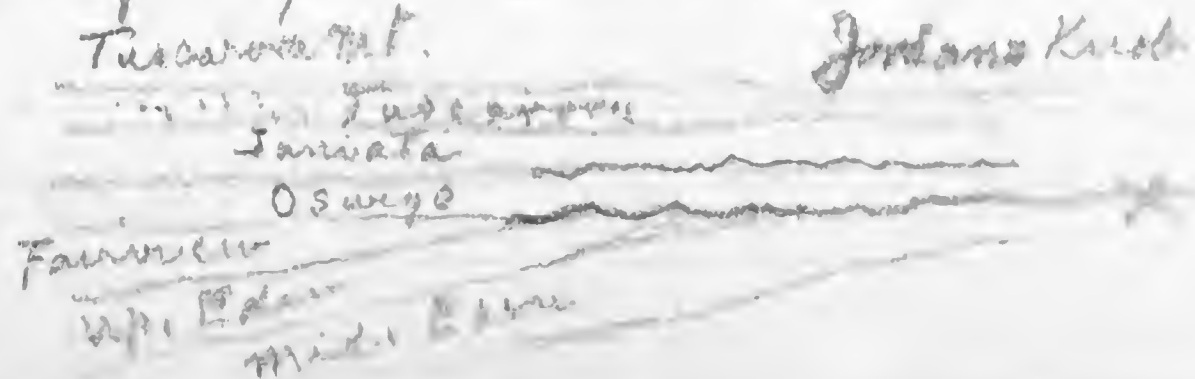
June 18, 1916, With Charles Butts.

Generalized section of west slope of Tuscarora Mt. between McConnellsburg, Pa. + summit of mountain along Mercersburg pike. Distance about 2 1/2 miles.



June 17, 1916.

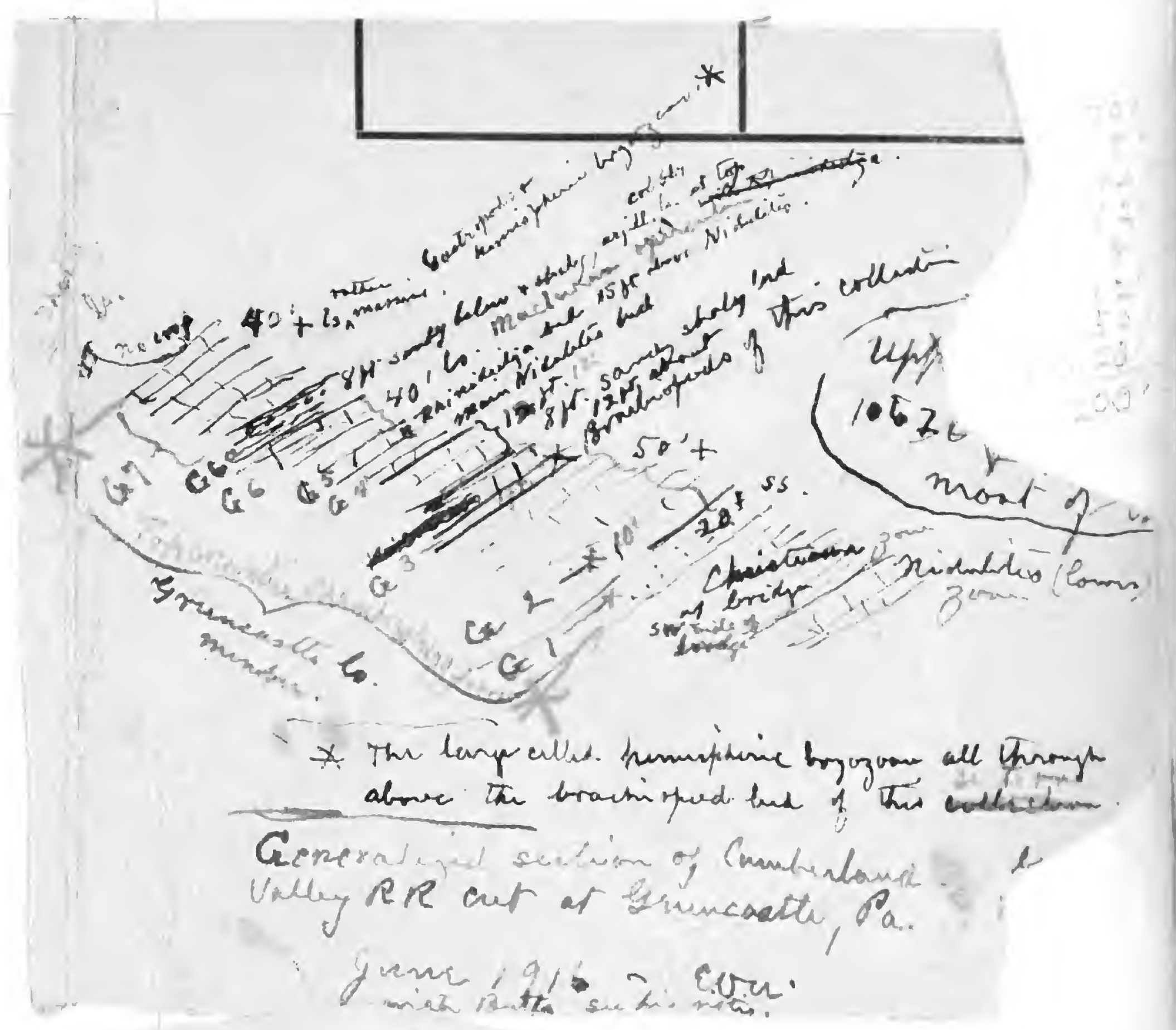
On Jordan's Knob, a mile or two N. or N.E. of Ft. Loudon, Pa., the sequence differs very much in that the Oswego ss. rests on the mid. Eden. Collected a good fauna close to the top of the latter. The basal part of the Oswego contains layers that are distinctly conformable, with mostly fine quartz pebbles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



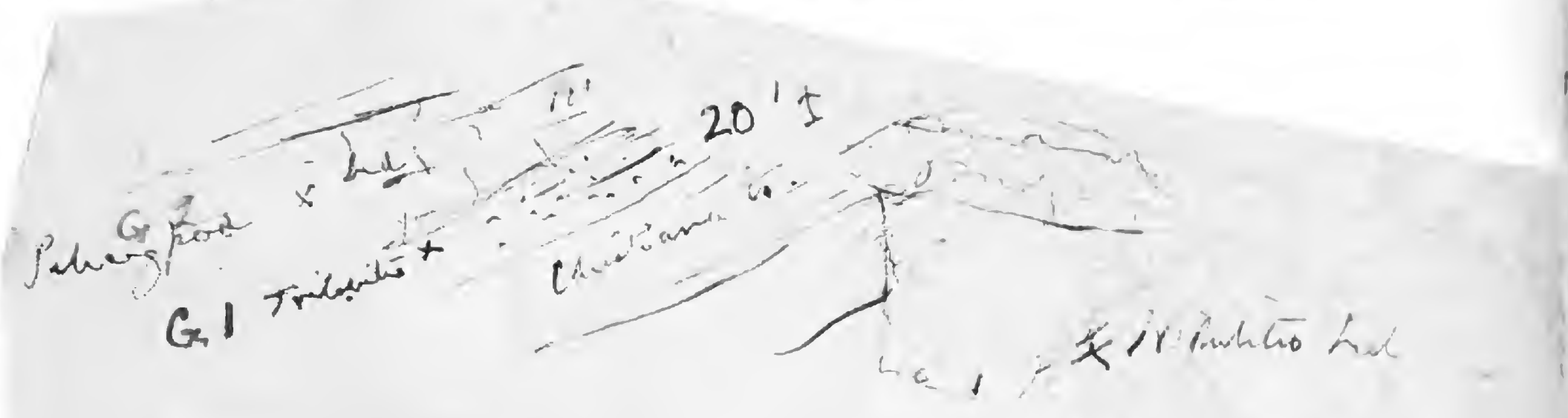
At the station of bridge over the  
Cumberland Valley R.R. at  
Greencastle, Pa. Oct. 15, 1916  
with State Geologist  
H. S. Girty



Upper Ordovician  
Cumberland valley  
Abstract

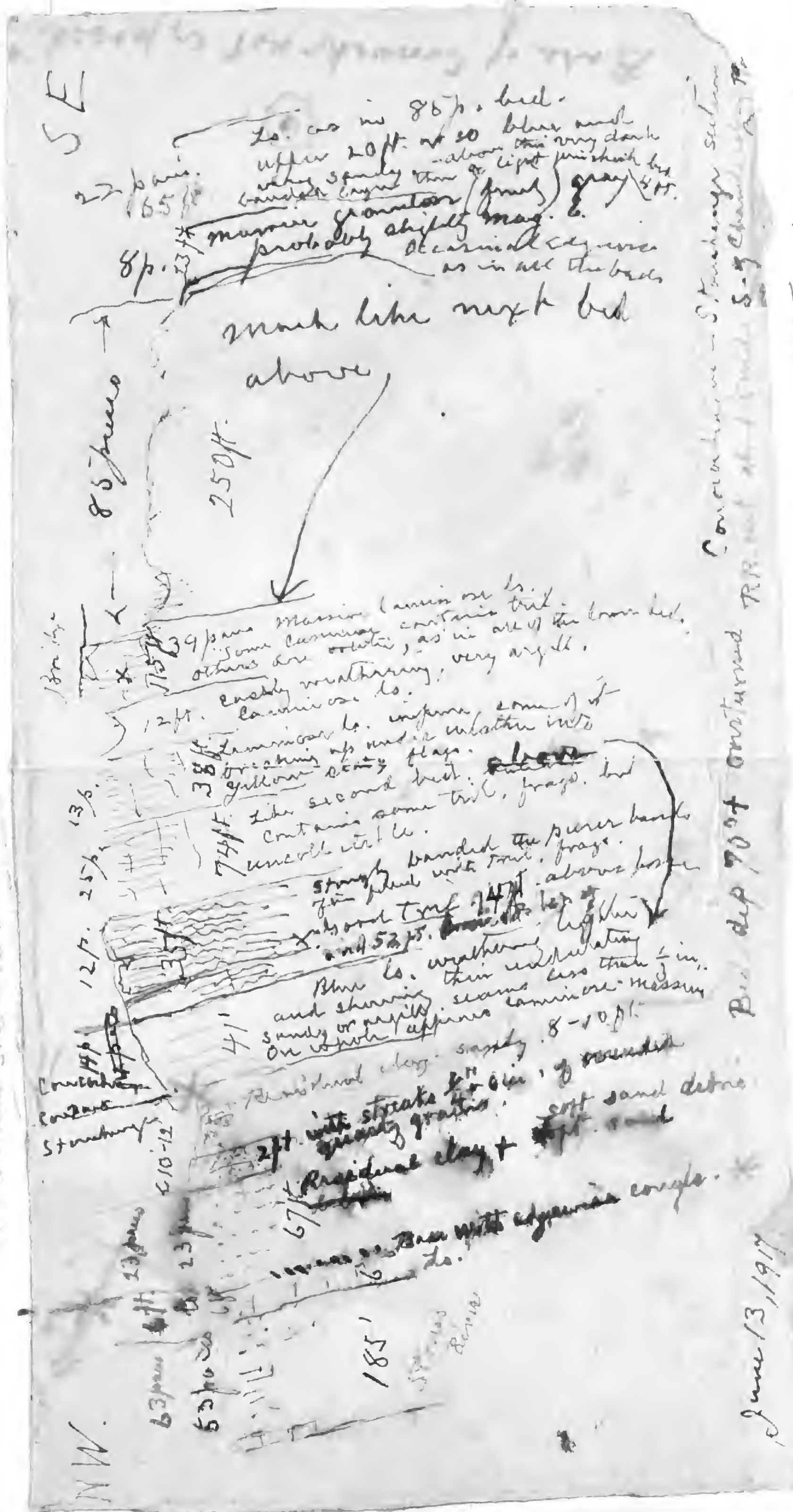


\* The large called hemispheric bryozoan all through above the bracketed bed of this collection.  
Generalized section of Cumberland Valley R.R. cut at Greencastle, Pa.  
June 1916 - C.W.U.  
with notes such as notes.



Fossils from the lower 30 ft. of beds above the Christiana ls. at R.R. bridge north edge of Greencastle, Pa.





SE

27 paces  
165'

8 paces

85 paces

250 ft.

139 paces

136'

25'

127'

4'  
10-12  
63 paces  
53 paces  
23 paces

NW

ls. as in 85 p. bed.  
upper 20 ft. of 20 blue and  
very sandy thin light pinkish bed  
massive granular (fine) gray ls.  
probably slightly mag. c.

much like next bed  
above

massive laminar ls.  
Some laminae contain tril.  
others are oolitic, as in all of the lower beds.  
easily weathering; very argill.

laminar ls. impure some of  
breaking up under weather into  
yellow sandy clay.

like second bed, frags. but  
contains some tril. frags. but  
uncollectible ls.

strongly banded the purer beds  
from blue with thin, above base  
and 52 p. bed. light blue  
Blue ls. weathered thin red  
and showing seams less than 1/2 in.  
sandy or argill. appears laminar-massive  
on weathering appears sandy 8-10 ft.

Residual clay + soft sand debris  
2 ft. with streaks of 1/2 in. of rounded  
quartz grains.

Residual clay + soft sand debris  
2 ft. with streaks of 1/2 in. of rounded  
quartz grains.

seen with argonite congl.

Concordance section  
R.R. cut at 1 mile S. of Concordance

Bed dip 90° overturned

Upper 75 ft. of Concordance section  
Beds not exposed

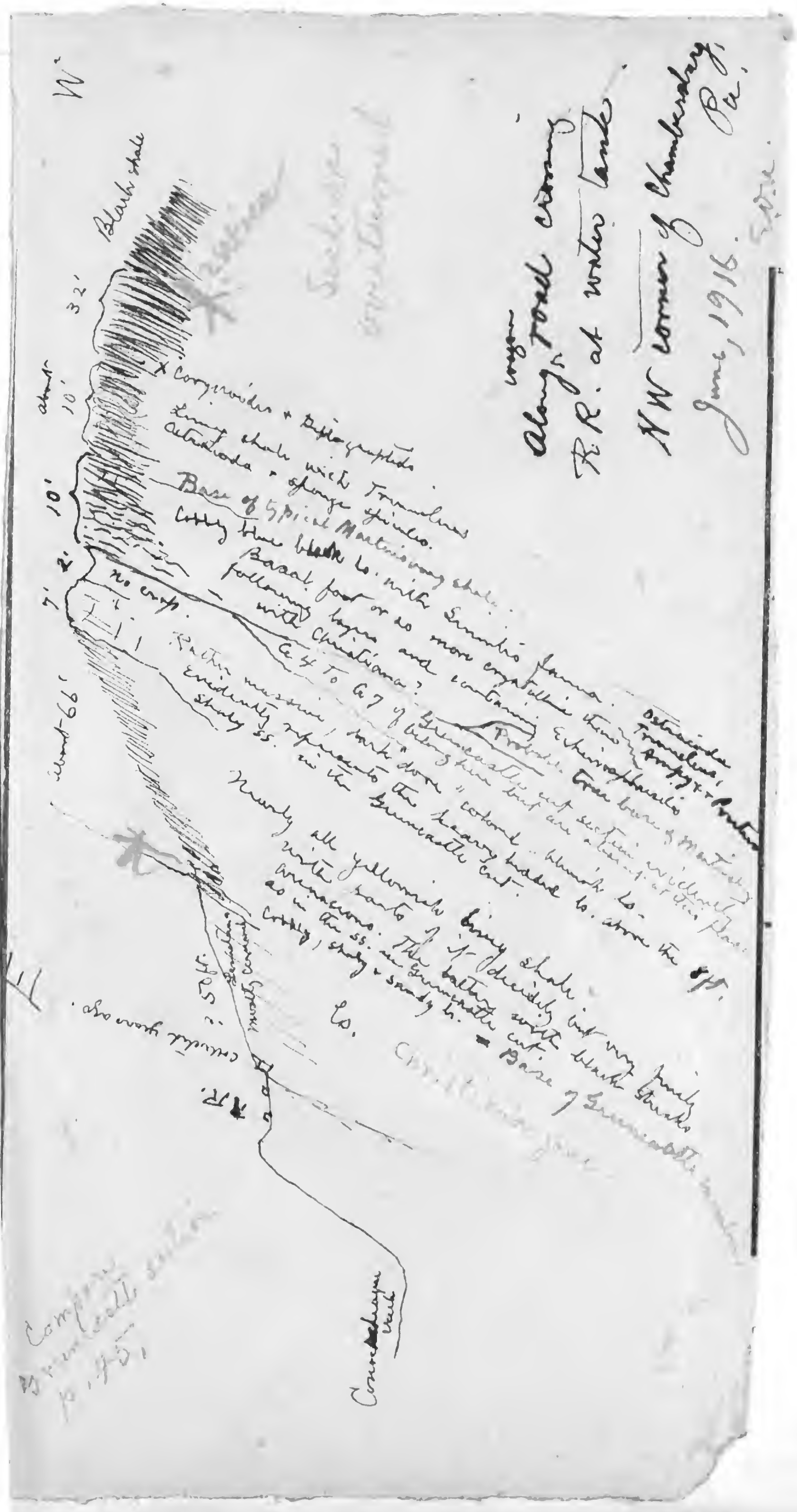
Basal 270 ft. of Stonehenge

June 13, 1911

W. of Catawissa near Allentown, Pa.



46  
48  
Mention from  
Faint.



49  
Along road crossing  
R.R. at water tank  
NW corner of Chambersburg  
Pa.  
June, 1916.

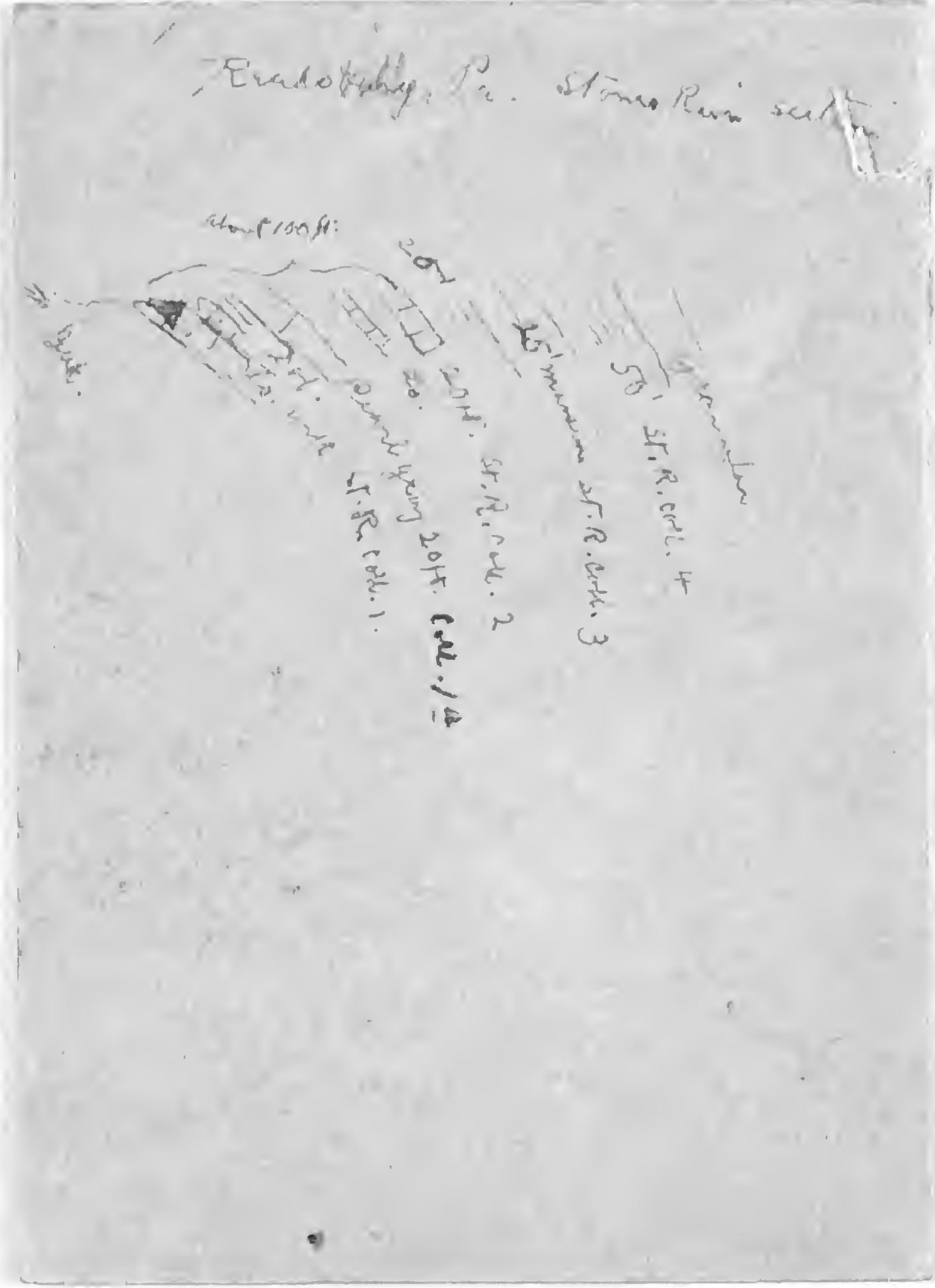
Compare  
p. 45

Catawissa



50

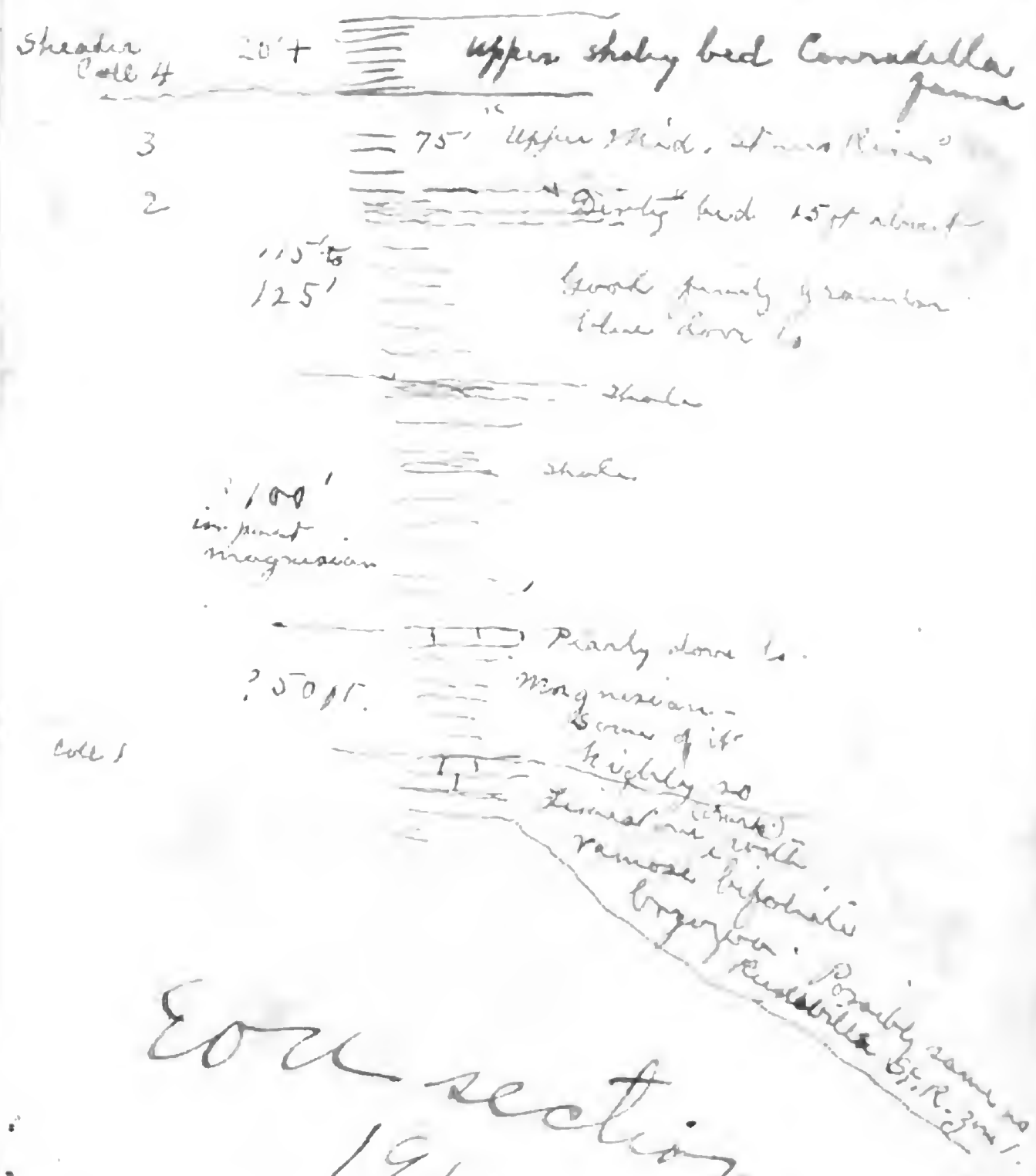
may be with white



Erado Valley, Pa. Stone River section

about 100 ft.  
 20' ST. R. coll. 1  
 20' ST. R. coll. 2  
 25' ST. R. coll. 3  
 50' ST. R. coll. 4  
 50' ST. R. coll. 5  
 20' ST. R. coll. 6  
 20' ST. R. coll. 7  
 20' ST. R. coll. 8  
 20' ST. R. coll. 9  
 20' ST. R. coll. 10

Sequence at Shander, Pa.  
National Line Co. quarries near Shiloh, Pa.



Even section 1916.

See also notes at Shander on p. 5

near Shiloh, Pa.  
 St. Ry 126  
 Mifflin Co. Pa.  
 8 or 10 miles n. of Lewisburg

24 1/2  
 25  
 30  
 35  
 40  
 45  
 50  
 55  
 60  
 65  
 70  
 75  
 80  
 85  
 90

34 2 1/2 mi S of Danville  
1010 - 1070 Top of Sandstone



12 <sup>th</sup>	R.R. Cin. to Dover & return	1.40
June 19	R.R. Cin. to Sanders	1.40
" "	" " Blunson, Ky to Cin.	1.15
" 17	" " Cin. to New Rich & return	1.70
" 20	R.R. Cin. to Danville Ky	3.50
21 <sup>st</sup>	McCummings to Lexington Ky	.75
"	Lexington to Frankfort	.65 - .85
"	Frankfort to Eminence	.76
24 <sup>th</sup>	Eminence Ky to Cin	2.80
25	Pullman - extra fare Altoona to Wash. (make it both rates)	2.50 or 2.00
26-27	off for deer (in Wash)	
27	Pullman Wash. to Altoona	2.00
28	R.R. Altoona to Bellefonte Pa.	1.20
July 2	" " Bellefonte to Tyrone	.85
" "	" " Tyrone to Harrisburg	.65
" 2	" " Harrisburg to Carlisle	.28
" 3	" " Carlisle to Hollidaysburg	.50
" "	" " Hollidaysburg to Reading	.23
" 6	" " Reading to Pottsville	.38
" 7	" " Pottsville to Harrisburg	.34
" "	" " Harrisburg - Mt. Airy	.15
" 8	" " Mt. Airy to Washington	
" "	" " Washington to Leesport	.25 - 16
" 9	" " Leesport to Hagerstown	.87
" "	" " Hagerstown to Leesport	
" "	" " Leesport to Harrisburg	1.53
" "	" " Harrisburg to Harrisburg (1 m.)	.65
" 10	" " Harrisburg to Lebanon	.70
" "	" " Lebanon Pa. to Reading	.81
" "	" " Reading to Leesport & return	.90
" "	" " Leesport to Altoona	
" 12	" " Altoona to Washington	
" 14	" " Washington to Washington	







