

Eastern Ky  
1902  
Field

1902  
Eastern Ky

1426 K&T

no  
30

all copied

Eastern Kentucky.

If found, send by mail to

Wm. F. Foerste

1017 Grand Ave.

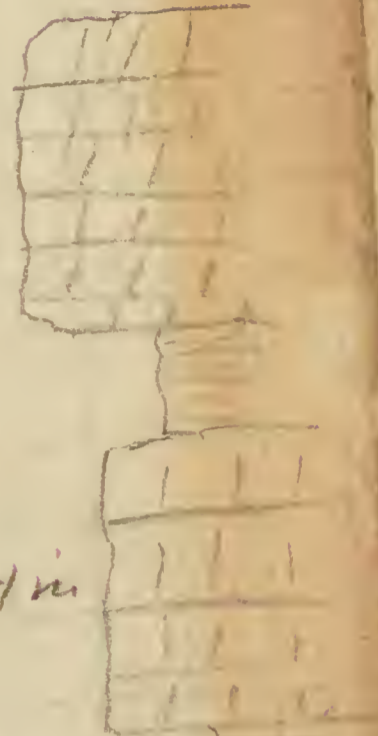
Lexington, Ohio.

1) at Spring N of Mr. Wells Lawrence  
N. of Oil Springs.

Black shale

Brecciated limestone

Massive 3 ft 9 in.



Shaly rock 1 ft 3 in.

Limestone massive 3 ft 4 in.

Crumbly rock on the fresh  
teeth. The layers unknown

The Black shale is imbedded with  
lenticles or veins of a sort of brown  
stone rock for at least 8 ft from base

They are boring a well NW of the house  
in the bottom of Sulphur Creek

2) Stwarts Mill Between Oil Springs  
and Kiddville, about 2 miles  
the ridge from Oil Springs.

There is a fine exposure of  
Black shale - some fossils of small  
a few hundred yards up the  
Hollywood

3) Easton's Mill  
 Black shale, with interbedded  
 clay, with near base, some clay into  
 the shale.

Massive limestone 4 1/2 feet

Partly exposed 1 foot

Massive limestone 3 1/2 ft  
 Fish teeth at very base of  
 this limestone 1/2 inch

Blue clay shale 18 1/2 ft

9 inches of solid limestone  
 crossing the creek forming  
 a little fall of 1 foot +



4) Jim Peck N. West of his house.  
 East side of branch on both sides, 200  
 feet N of road going west from Kilde  
 ville.

At top of section are loose boulders  
 with Whitfieldella, large crinoid heads +  
 large and small corals.

5 1/2 feet partly exposed

Limestone only partly exposed  
 and base not certain.

7 1/2 feet. S. of the above  
 large + small corals about  
 towards top.

Lower part of section near the road.

1 ft limestone

1/2 ft clay

7 1/2 ft limestone

P. are of Clinton ?

5)

Clinton with *Hedysites columbata*  
many *Strophomena* large & small,  
*Lyellia subtrilobata*. At top are  
several thin layers (= 1 foot?) with  
*Murchisonia*? + *Perrinites*. *Strophomena*?  
Maximum thickness of *Aspidoceras* clay  
is 30 ft but owing to slope of  
the rock it is probably at least  
45 ft thick.

Base of Devonian seen. Fish-  
bone layer = about 8 inches, *Murchisonia*  
teeth in lower half.  
Weathering out 8 inches.  
Maximum bed  $\frac{1}{2}$  feet.

38

$22\frac{1}{2}$  ft  
 $15\frac{1}{2}$  ft  
above Clinton base  
limestone layers. Not  
included.

5

6 S. of J.T. Elkins along Rm.

From Clinton base to top of more  
continuous exposures 10 ft 6 in.  
5 1/2 ft chiefly clay some limestone  
2 inches layer limestone  
8 ft clay, soft.  
4-6 in solid brown limestone  
5 ft chiefly clay  
2-4 inches brown limestone  
12 ft blue clay  
1 ft solid brown limestone. The  
horizontal of this layer unknown.  
1 3/4 ft unknown.  
3 3/4 ft. Cherty Coniferous.  
3 ft Black shale base is a clay rock.  
Fossiliferous black shale above.  
Further south at lowest point of  
road the base of Clinton is clearly shown  
resting of clay shale.  
Clinton to base with large crinoid  
beads = 14 1/2 feet. The layer in  
which the beads occur disintegrates  
readily. As do also the layers  
above the middle. The lower  
6 1/2 to 8 1/2 feet are more solid.  
The layer taken as base of *Aspidoceras*  
is more solid, cross-bedded 6 in.  
More limestone up to 2 feet.  
6 ft blue shale mixed with small  
limestone nodules.  
6 inch limestone, about 23 ft to 25 ft

7) W. of James St. on highway  
 8 ft solid Clinton.  
 2 ft limestone clayey, weathering  
 much.  
 3 ft limestone clayey near top  
 at least. Red just ably bottom l.  
 8 inches heavy bed. Masses  
 cross bedded. As good as  
 85 ft. clay with some lime-  
 stone layers especially near  
 the base.  
 Contact not seen.  
 6 ft with chert in streaks &  
 nodules in all parts.  
 5 ft brecciated layer,  
 80 ft from Red river to Clinton.

8. Road going east at Log Church  
 65 ft from base of Clinton to  
 base of Corniferous. The  
 1 ft brown (red) limestone  
 occurs here as at 6 given to  
 with the cherty corniferous,  
 4 ft Corniferous cherty  
 3 ft brecciated layer

9) On road bearing pike 1/2 mi. S of  
 Indian Fields.  
 Clay layer soft  
 22 in. limestone, as good as  
 8 in clay.  
 6 in. solid limestone.  
 12 ft. clay.  
 13 in. limestone, several layers  
 22 ft. covered.  
 1 ft solid limestone, brown. (37 ft)  
 extend 15 ft from top of Devonian.  
 Is this brown limestone layer  
 Devonian?

10. NE of Knadville, in stream bed.  
 The heavy crossbedded layer is  
 full of *Strophomena*. 8 inches  
 covered by thin limestone layers  
 with large crossbedded beds. The  
 (ferrous iron bed to 3-4 feet?)  
 (higher up, thickness unknown)  
 The Strophomena bed here  
 was reworked.

11. E of Kiddleville near mouth of N Fork,  
Ferruginous bed = 1 1/3 feet thick  
contains *Strophodonta* & other  
plants. About 1/2 feet above  
*Strophodonta* layer.

The ferruginous layer is overlaid  
by 3 inches of limestone. This  
5 feet consists chiefly of blue  
soft clay with a few thin layers  
of fine courses, more frequent  
near top. This is overlaid  
by 5 1/2 feet of thin limestone  
with thin clay partings. This  
bed is as to merge into the  
clay (1 foot) beneath. These  
thin limestone pieces  
The middle stone of more  
weathered rock. At the  
top one of these beds is about  
4 inches thick & runs out

12. About 1/2 mi. W. of Leno.  
Dip of 18 feet in 80 steps, East on  
West side of creek.

Base of Clinton well shown  
Massive Clinton 5 ft  
Softer layers not seen 2 feet  
Massive limestone 1/2 foot  
6 1/2 feet unknown.  
Very fine grained purple material  
mixed up in a more grained  
limestone. This layer at a  
number of places contains  
layers with beads, which are  
well shown, also are *Strophodonta*  
thin *Strophodonta* and *Strophodonta*  
abundant.  
Analyzing the bed is a sandy  
layer with more clay and  
beads, probably shown, the fossil  
one space, one inch across.  
Also *Strophodonta* 4 1/2 inches  
thick.

Above is the clay and then  
the thin limestone seen in  
east section. This is the  
position of the *Strophodonta*  
bed. This part is exposed also  
on W side of creek. It occurs  
higher in the section than the  
dip + would not be on this side  
of creek would warrant.

10  
12  
14

It is about 12 feet up to  
 base of the limestone layers  
 which are light brown & thin bedded  
 the limestone is 5 1/2 feet thick  
 from here to base of Devonian  
 is 11 feet. Devonian is 16 feet  
 thick. According to depth  
 the Devonian base should  
 be 67 feet above base of  
 Clinton. According to  
 actual measurement it  
 is only 37 feet above the base  
 of Clinton.

According to depth the top of  
 the thin limestone is 29 feet  
 below Devonian. According  
 to actual measurement  
 it is only 12 feet below.

There is an east dip on east  
 side of creek but I do not  
 know how rapid the dip is.  
 A whether it is constant.  
 The elevation of the thin limestone  
 above suggests that the  
 is not constant.

47-  
 5'

13. At road 2 1/2 mi. S of  
 E of Levee.

The bed which normally shows  
 a nodular layer in a section  
 Road 2 1/2 mi. S of Levee  
 here a continuous purple ph  
 phatic bed, 1 foot to 1 1/2 feet thick.  
 The base of the black shale is  
 clayey rock. Road  
 At road angle a question of  
 a mile to this basal clay  
 rock is seen to be underlain  
 by a little black shale.

14) Spangore Creek.

The clay hard rock is brown  
 of black shale section is under-  
 laid by 5 1/2 feet of black shale  
 then by 4 inches of hard rock  
 then by 16 feet of limestone  
 beneath which is the red  
 sand, with the red clay  
 band 13 1/2 of an inch a  
 brownish beads are very com-  
 mon in bed of the sand. These  
 large conchoidal clay lumps are  
 irregularly scattered.  
 The only 1/2 ft of top of sandy  
 red clay is purple but the  
 occurs just above



15) West of Jeffersonville  
Comiforms, 14 inches thick. The  
clayey with near base of Black  
shale section is seen further up  
the road.

29 ft from base of Clinton  
in bed of creek. The red sandy  
massive layer is a two feet  
above bed of creek.

12 feet above the creek is layer  
with large conoidal beads overlaid  
by sandy rocks. This conoidal  
layer is 17 feet below the base  
of Comiforms which corresponds  
with section 14.

A long west from creek it is 39  
ft from base of Comif. to bottom  
of creek. Averaging the two sections  
it is 33 ft from base of creek  
to the base of Comif. since  
the east exposure is nearest the  
creek.

About 3 feet of Comif. fossils  
exposed.

16) East side of British Creek. 20 Comif.  
About 26 feet from base of Comif.  
cross to west side to the base  
of the Clinton. Comif. on front

17) A little over 2 mi. SE of Mt Sterling  
Blue clayey limestone, with a  
small layer of the clay fossil. This same  
rock is exposed between here and Mt.  
Sterling several times.

16) Comiforms  
Clinton, massive rock at  
base less than 5 feet + thin  
Not measured.

18) East of State Creek E. of Spencer.  
Comiforms. Massive layer at base  
3 ft thick. Unknown = 14 inches  
5 ft. full of chert. The lower mass  
2 in bed is also cherty.  
56 feet from base of Der. to base  
of Clinton. The latter is exposed just  
west of the State Creek bridge.

19) West of State creek bridge E. of Spencer.  
Ordovician blue clay.  
3 ft 10 in more than bedded limestone  
19 in. blue clay  
8 in. massive layer  
16 in. massive layer  
3 ft. thin bluish grey with blue clay parting  
8 in. massive bed  
20 in. thin bedded limestone



The *Strophomena* in the successive limestone is large & rather common & defines into Richmond age.

The rock below the massive layer for about 6 ft. is condensed clay and corresponds to the reddish layer layer.

The 32 feet of the Warren beds just beneath the equivalent of the nodular layer are nearly infossiliferous almost entirely clay.

The *Orthis* layers on the road to West Starling probably belong in the *Orthis* set.

*Leptaena rhomboidalis* in same bed with the fossils 12 feet above base of Richmond as here determined.

Present trip:

- Friday night - West Starling,
- Thursday - Indian Fields
- Wednesday - Winchester,

- Saturday - Dodd's Tavern
- Sunday - Day's night
- Monday - Charlottesville night,
- Tuesday - home.

Friday to Friday 4<sup>th</sup> 2 weeks

21) 1/2 mi. SW. of Howard's Mill.

- 0 creek level
  - 11 feet not exposed,
  - 6 in fine grained dol. limestone,
  - 1/2 ft. fine grained limestone with clay joints,
  - 7 ft. clay with no fossils,
  - 7 1/2 ft. Clay rubble with spherical & hemispherical bryozoan petiole fossils,
  - 25 1/2 ft. to base of Richmond.
- = 53 ft. of Warren bed exposed & the rest Auburn beds not seen.

22) 1/2 mi. SW. of Howard's Mill.

- 0. Rather unfossiliferous sandy shaly brown rock weathering to sandy clay
- 23 feet clayey limestone weathering so as to be almost entirely infossiliferous, the bed of these bryozoan fossils with several *Orthis rhomboidalis* near the base!!! *Heterospira*
- 6 1/2 feet limestone, clayey with fossils locally no fossils.
- 40 ft. clayey, fossils only in fossils except the petiole of bryozoan up to base of Richmond.

Making allowance for dip the  
 Richmond bed =  
 Warren = 50 feet about  
 ? Mt Auburn = 24 feet about  
 Sandy clay = 14 feet  
 ? Mt Auburn = 50 feet with  
 plenty of typical *Artium lymex*,  
 base of lymex beds not exposed  
 but total in Artium lymex recorded  
 in lower part of Warren bed same  
 distance above the base,

2 mi. east of county line on  
 road to Sherman  
 On down on ... clays  
 Base of Clinton ... 3 ft 7 in  
 6 in blue clay  
 (The lower bed with chert)  
 12 ft ...  
 4 in blue clay  
 3 ft irregularly bedded limestone  
 with intercalated clay ...  
 by ...  
 7 in ...  
 2 ft ...  
 None marked layers with large  
 chert's beds ...  
 blocks 5 ft ...

at 93 ft above base of Clinton 19  
 the chert is abundant - Per.

24. a short distance east  
 9 ft ... limestone, from  
 base of Clinton ... ending at  
 top with ... layer 1 foot thick  
 3 ft ... clay  
Strongly wave marked layer  
 varying much in thickness from  
 6 to 15 inches  
 1 1/2 feet clay  
 2 in limestone full of large  
 rounded ...  
 1 1/2 ft. strongly lenticular  
 some ...  
 Wavy ...  
 5 1/2 ft of clay white  
 5 1/2 ft of thin ... limestone  
 3 ft of thin limestone weathering  
 to rubble  
 Plenty of white clay = 60 ft to  
 top of cherty Devonian of which  
 2 ft are exposed.

93  
 19  
 75

25) E of Arringtonville.  
 Massive chert with chert 4 ft 9 in.  
 clayey thinned, limestone weathering  
 to clay 5 in.  
 One bed of limestone together  
 equal - 8 inches.  
 The base of the Redwood is  
 70 feet farther down the road,  
 its real thickness is 22 feet,  
 but makes it appear thicker.  
 Two specimens of *Strophomena*  
*planumbona* were found  
 near the lower part of the  
 sandy clay, 11 feet below  
 the base of the Redwood,  
 in the limestone just beneath  
 small but good specimens of *St.*  
*planumbona* and good *Stroph-*  
*omena* *convolutum* are seen.  
 The upper part of this limesto-  
 ne section beneath chert contains  
 several species of gastropods,  
*Chondonta*, it is 2 1/2 ft thick.  
 The limestone section continues  
 beneath and 11 feet lower than  
 the 2 1/2 ft section occurs *Tet-*  
*radium* large. This is 9 1/2 ft  
 beneath the chert. Not cor-  
 rected = 23 1/2 ft below what  
 was first called the Redwood  
 base.

8 ft clayey stuff rubble near base  
 No fossils

24 1/2  
 28 feet clayey lime weathering to  
 rubble upper half with plenty of fos-  
 sils & a few *Orthis bifurcata* not  
 large enough for *lyons*,  
 $28 + 8 + 23 \frac{1}{2} = 59 \frac{1}{2}$  feet and no  
*Orthis lyons* typical & common.  
 A short distance beneath but  
 how far not known near this  
 limestone beds full of *lyons*  
 some *Orthis bifurcata* not large  
 + *Leptaena* *hemisphaerica*.

26) East of West branch of Mill Creek.  
 Argill. clay at least 60 feet thick.  
 The sandy layer probably just  
 beneath at each level but not  
 seen.  
 Fish teeth layers about 3 in. thick  
 no far as seen.  
 Cherty coniferous about 5 ft.  
 Brownish layer in the trace of  
*lyons* = 2 1/2 ft.  
 Black shale.

27) E. side of Blue Bank creek  
 1 1/2 ft. brown limestone full of *Orthis*  
*coelia umbonata* underlain by  
 15 in. reddish limestone irregular  
 and overlaid by 1 ft. cherty lime  
 stone.

28) At Rose Run Mining Co.  
 Bottom 6 in. several layers full of large crinoid heads  
 4 in. blue clay + 5 in. brown limestone  
 3 ft. ferruginous Clinton = ore.  
 1 ft. bluish stone including wavy  
layers.  
 7 1/2 ft. soft shaly clay.  
 5 ft. thin (th 3 in.) layers of lime-  
 stone with 4-6 in. layers of clay  
 between. The top layer is in  
 places 8 in. thick. Is this  
 the Whitefieldella bed?

29) Roman Co. NW of Mores Ferry.  
 Devonian limestone 13 in. of a  
 grey color, with spirifer on rather  
 common on upper surface, bottom  
 also exposed. On further examination  
 this spirifer on lower appears  
 to occur in the lower part of the  
 Palaeozoic + the crinoid  
 is entirely absent.

On the other side of the hill, north-  
 ward, a similar rock appears. The  
 lower surface is red, ferruginous  
 has a brecciated appearance and  
 may have had fish teeth in it, but  
 this is uncertain. The fact that this  
 thin follows an irregular surface  
 shows that it is not a single

30) Road to Farmville  
Wavy Clinton layer Trend of  
waves N10W. Northward up the  
 hill the bed is not seen  
 exceeds 20 feet. Top is not seen.

31) apparently the layers overlapping the  
 wavy Clinton layer.

32) The wavy Clinton layer is seen in  
Trend N45W. Thin horizontal  
 layers separated by gentle discon-  
 tinuities of soft shaly crinoid  
 as at Rose Run. At least  
 5 feet also here.

33) at Well on Fox Creek Two miles  
 below Farmville.  
 6 in. greenish clay, with leaves  
under seen.  
 1/2 ft. clay  
 1/2 foot bed of crinoid  
 1 ft. 4 in. clay  
 1/8 in. thin horizontal  
 10 in. clay with crinoid  
 1 1/2 ft. blue clay,  
 1 ft. rest is full of large  
mass, not seen

16 in. ferruginous limestone, red-  
ore,  
4 in. light brown limestone,  
2 ft thin bedded limestone &  
clay. The clay much pre-  
dominating.

Van Cleeve.

at east end of town the Waverly  
base resting on Black Shale is seen.  
It contains fine grained sand-  
stone layers rather in abundance  
and differs in this respect from the  
thin soft clays of the Central Shen-  
andoah valley. The flags were for-  
merly passing all evidently wavy  
flags and are full of spiriferophylloids  
like those found in Fleming coun-  
ty and these probably would mostly  
referred to the base of the Black  
Shale.

Just below the Court House on the  
river bank there is fine grained  
rock which may be the fine grained  
rock in some localities seen at  
the base of the Black Shale. It is  
at least 6 feet thick. Base not  
exposed. With a little high of  
a fault crosses the river here.  
This may be some other expla-  
nation for this rock.

One mile west of town where the  
river crosses a little stream the  
Black Shale is exposed down to  
Creek level at least.

East side of Quicks Run, Quicks Run  
Blacksmith shop 2 mi. up from Rome.

- A. 17 ft thin bedded, looks like black, many parts weathering to a sort of dark blue shale.
- B. Overlying it is more solid limestone, irregularly bedded, 16 feet
- C. Over this the limestone is more sandy in appearance - 40 feet to top of exposures

In A + B, small rounded heads and stems were associated with very small narrow stems ~~which~~ long pointed.

There is a spring below the level of the road at shop.

West of Quicks Run the relation between this rock and the Black Shale may be determined.

About 1 1/2 mi. up river from Rome 24 feet of the massive rock are exposed. At the top it looks brecciated but does not show, resembles the Devon system. It is overlain by the Black shale series in the lower part of which are several feet of greenish shaly clay.

At angle of hill S. of Cross Sta. 27  
On west side of road.

Black shale at least 30 feet seen  
Sandy limestone 75 ft measured,  
the good whiter clay 100 ft base  
not seen.

Just E. up river from Concord, Ky.  
Within flat hills = B and C same type.  
Within 1/2 mi. 3 ft. sections.  
Septaria, abundant.  
Strophomena calycula, the little  
disappears as well as above.  
found in loose pieces over exposure.  
This is the first exposure of Carboniferous  
along the RR going W from  
Vanceburg.

- Sat. night. Ewingville.
- Sunday m. Salt Lick
- Monday m. Fleming's Log
- Tuesday m. Manchester
- Wednesday m. Mayersville
- Thursday m. Flemingsburg
- Friday m. Concord
- Saturday m. Mayersville
- Sunday Mayersville



34 Along RR 1 mi. N of Hillsboro,

3 ft. Belfast bed.

5 ft 6 in solid massive chert with  
10 in. clay soft.

6 in. limestone

3 ft. poorly exposed probably chiefly  
blue clay with a little limestone.

2 ft 2 in. chiefly light brown or  
flint limestone, fine grained,

4 in. blue clay soft

6 in. solid limestone

4 ft 2 in. almost entirely clay,  
with limestone at 1 1/2 & 3 ft  
levels. thin.

6 in. Wave marked layers

1 ft blue clay

4 in. Wave marked layers, the lime-  
stone after some thickness the  
ridges remaining as lenses  
flat on bottom.

1 ft 7 in blue clay

6 in. limestone with ferruginous

2 in. at wave marked in  
places, at least spotted.

15 in. strongly ferruginous sand.

2 in. light red purple limestone

2 in. browned with red spots

and the top layer browned

to light brown limestone

clay }  
4 in clay  
4 in light brown limestone  
thin.

Limestone - R - 6 1/2 ft

9 in clay

2 in limestone light brown

8 in clay

2 in thin l. layers

3 ft clay

1 in limestone, lenses

10 in clay blue

6 in several limestone layers

1 1/2 ft clay

4 in limestone

4 in clay

1 ft 7 in limestone. A part is  
slightly ferruginous

4 in clay

8 in limestone

R *Lepidoceras rhomboidalis*

*Dicranella elegantula*

*Pachygonia*

*Composita* small

*Bygonia* fine

*Cerata* 5 narrow plications on fold

The strongly wave marked layers  
continued the large crinoid heads

35) Road to Farmville.  
Both clay & sandy clay below.  
White clay at base 11 feet.  
Belfast bed nearly 5 feet.  
Clinton massive 5 ft 8 in.  
cherty.

36) Along creek west of Farmville.  
Clinton base to.

37) S. of Crane's Creek on road to  
Plummer's Mill.  
80 ft of white Osgood clay above  
creek level. No limestone at base  
though total bed much thicker.  
35 ft steeper slope not exposed.  
Black shale, large exposure.

38) Above road corner (Smith) 1 mile  
out of Plummer's Landing on  
St. John's Creek Road. Called the  
Big Sandy Pond.  
Black shale. No evidence  
of limestone beneath.

39) SE end of Plummer's Mill SE of  
church.  
Osgood blue clay.  
3 ft. crinoid. massive limestone.  
S. thin Dev. or Silurian.  
5 1/2 ft. partly exposed green clay of  
unit at top. Below is Black shale.

40) A short distance (1/2 mi) S of Ramoys  
Chapel.  
Osgood blue clay.  
Silurian or Dev. rock over 6 ft 6 in  
Greenish shale 5 1/2 ft.  
Black shale large section.

41) West of W. A. Loomis's house  
at spring. 1/4 mi. S of Fox Sp.  
Osgood clay shale.  
1 ft 10 in solid limestone.  
4 ft 3 in. rotten cavernous lime-  
stone.

42. 3/4 mi. S of Fox Springs.  
9 ft of Silurian Dev. limestone.  
H F Loomis walking by  
took me over ridge.

Fossils in Middle Richmond, Concord, Ky.

- Physichasma capax*
- Hebertella insculpta*
- Platystrophia subrotunda*
- Strophomena planumbona*
- Dinorthis subquadrata*
- Palaeophyllum divaricans*
- Leptaena subumbonata*
- Protarea retusta*
- Columnaria columnifera*
- Strophomena subrotunda*
- Hebertella sinuata*
- Strophomena sinuata*
- Platystrophia acuminata typical*

Will E. H. Curran

- 27 3 in
- 16 ft. *Dalmanella jugosa*
- 2 1/2 ft. *Strophomena rustica*
- 5 ft. *Strophomena rustica*
- 1 ft. *Strophomena rustica?*
- 5 1/2 ft. *Strophomena rustica*
- 58 ft.

153  
11  
164

Lowest exp. at R R bridge E of Concord.  
11 1/2 ft. below 0 *Uru. Caseyi* + *Stroph. rustica*  
6 ft below 0 str. rustica zone 1 ft. (33)  
5 ft below 0 Sh. rustica small. No *Dalman.*

*Strophomena* in lowest str.  
0 Creek *Strophomena rustica*  
*Uru. Caseyi*  
2 1/2 ft. lowest *Dalmanella* rustica zone  
3 ft 10 in. *Dalmanella* rustica zone abundant  
13 ft 5 in. base of limestone layer  
lowest *Physichasma capax*  
*Strophomena planumbona*  
*Dalmanella* rustica occurs at various levels up to this point & above

18 ft 9 in. *Strophomena planumbona* & *Dalmanella* rustica common up to this level. At this level the limestone are separated by more clay become more clayey themselves & cut when fresh fossils.

- 21 ft 3 in. clayey limestone with abundant *Strophomena sinuata*
- 27 ft 7 in. chiefly clay. few fossils.
- 28 ft. heavy limestone with *Leptaena* etc. but fossils few & small.
- 29 ft. clay.
- 33 ft 6 in. *Strophomena planumbona* in thin clay.
- 39 ft. *Hebertella insculpta* large
- 47 ft. *Hebertella insculpta*, lowest exposure along R R Concord just above *Protarea retusta*, *Uru. Caseyi*, *Columnaria*

49 ft 2 in. Highest *Hebertella imitator*  
60 ft. Fossils in sec and page  
preceding found in 11 feet  
below this level.

153 ft to base of massive cherty  
Clinton. (32 measure)

46 ft from Clinton to property Clay  
layer above Clinton & below  
lower limestone.

190 ft. Top of ridge with plenty of  
massive brown rock boulders,  
with white clay short distance  
beneath.

53 feet at top of bedrock, ap-  
parently clay, with out limest.  
stone to any extent & with-  
out sand, from fossils  
the fossils from a limestone  
factory but seems to indicate  
the above.

Petrifaction 8 in high loose  
just above lowest limestone  
about 5 ft above *Hebertella*  
type and zone.

Columnar fossils 5 1/2 in. across  
5 ft above *Hebertella* zone, clay  
zone & just below said limestone  
as described above.

Waysville. About 2 1/2 miles S of  
town along C+O R.R.

*Strophomena planv-convera*  
section = 104 ft. above level of  
R.R. track where first seen, 1 mile  
from town, at track level 2 1/2 miles  
from town.

7 in limestone covered by fossiliferous  
below = bryozoans. - thin bands  
above.  
3 ft 8 in. Shaly clay with 1 or  
2 four inch banded clay rock  
at top.

10 in. limestone hard compact  
chiefly of *Dalmanella multisepta*.  
Waved on top. red *Dalmanella*

10 in shaly clay.  
6 in hard limestone fossiliferous  
5 ft 3 in shaly clay.

5 in. Two thin bands of *Dalmanella*  
limestone.  
2 ft. Shaly clay

6 in. Small limestone *Dalmanella*  
few *Dalmanella multisepta* on top.  
This part seems at first to be  
wells.

5 ft 10 in. chiefly shaly clay  
8 in solid fossil. l.  
5 in shaly clay  
6 in with fossil. l. *Dalmanella*

8 in. shaly clay.  
 2 in. limestone  
 2 ft 10 in. clay shale  
 4 in. foss. limestone  
 4 in. clay shale  
 2 in. foss. limestone  
 8 in. clay shale  
 4 in. thin bedded limestone, clay  
 3 in. clay shale  
 5 ft. l. full of Stroph. planus.  
 convex.  
 8 in. chiefly clay shale with  
 1/2 in. band of l. with Stroph.  
 planus convex in middle.  
 4 in. limestone with planus convex.  
 5 in. clay shale  
 2 in. limestone  
 3 in. clay shale  
 1 in. limestone  
 7 in. clay shale  
 4 in. l. fossiliferous  
 6 in. clay shale  
 4 in. l.  
 3 in. shaly clay  
 5 in. fossil. l.  
 5 in. clay  
 3 in. fossil. l.  
 6 in. clay  
 1 in. clayey limestone.

1 ft 9 in. chiefly clay  
 8 in. fossil. l.  
 4 in. clay  
 4 in. thin bedded l.  
 3 in. fossil. l.  
 2 in. clay  
 1 ft 7 in. limestone, with Stroph.  
 planus convex. <sup>total 75 ft 8 in</sup>  
 1 ft blue clay  
 1 ft 4 in. fossil. l.

Students Collection,  
Concord, Ky.

*Dimorphis subquadrata*. 10 feet above  
*Hebertella insculpta* zone, and  
in loose material brought down  
from above, along R.R. C.

*Rhynchotrema capax*. Begins where  
*Dalmanella* becomes common  
along Sycamore creek, R. be-  
comes common in *Dimorphis*  
*subquadrata* zone C

*Hebertella insculpta* rather C in  
several layers in a (horizon) zone  
1 foot thick at level of R.R. track C.

*Protarea vetusta*. Several well pre-  
served specimens in *Dimorphis*  
*subquadrata* zone.

*Plectambonites sericea*. Very  
abundant in *Dimorphis subqua-*  
*drata* zone.

*Strophomena sinuata*. Common  
at a measured level above *Dal-*  
*manella* zone. Sparingly in  
*Dimorphis subquadrata* zone.

39

Waynesville <sup>bed</sup> Lower half, Concord, Ky.

*Prasopora hospitalis*.

*Ceramophorella granulosa*.

*Bythopora mckei*

*Nicholsonella tenera*

*Batostoma varians*

*Callopora subquadrata*

*Mentostyrella quadrata*

*Amplexopora fenestrata*

*Pirenopora decipiens*

Arthur M. Miller. July 29, 1901.  
Estill Springs. Splendid ex-  
posures of whole series from  
Clinton to Black shale in  
immediate vicinity of Springs,  
and extending up Station  
Carp Creek to south of  
Kentucky River.

Hand level section on road  
leading up White Oak Creek  
from the forks of the road at  
the branch. (See Beattyville  
Topographic Sheet, U.S.G.S.)  
655 feet above tide to 780 feet.  
A little farther down stream  
a few layers containing  
*Cincinnati bilix(?)* are  
considered Upper Cincinnati.  
= 1 mile North of Irvine & then up creek.

Black shale

18 ft. massive cherty congl. lined

58 ft. Whitish shale with calcite  
crystals, congl. With thin  
limestone plates at 32, 25  
and 22 feet above base, ac-  
cording to drawing. Exact  
elevation must not be taken  
too exactly from this since it  
was on a scale of 1 inch for  
5 feet. Bryozoa layers  
occur 8 to 10 feet above base,

3 feet Layer with prominent  
radiate structures - or wavy  
like, 1 foot thick, above 2 ft  
layer, persistent, of reddish  
limestone.

24 feet of whitish shale, congl.  
with thin reddish limestone  
containing bryozoa & Favos-  
ites, 22 feet above base. Red-  
dish limestone interbedded  
with whitish shale occurs  
in lower 8 feet.

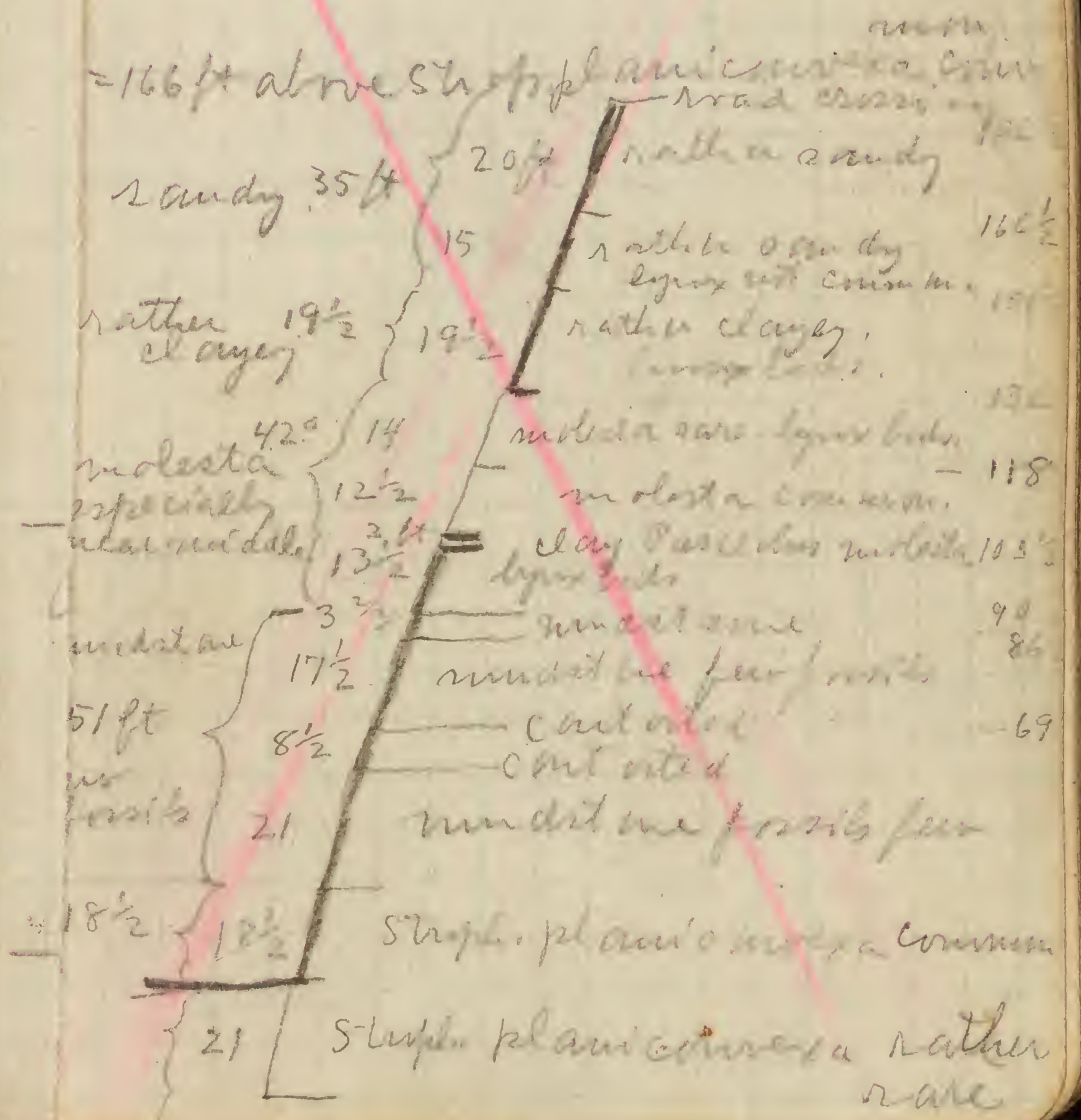
22 ft. Covered.

{ ? Reddish magnesian lime-  
stone with crinoid buttons  
= Clinton.

North Pine on Queen + Crescent  
in Whitley Co.

Black shale,  
approx 100° White Niagara shale  
30° Clinton iron ore  
100° shales. Clinton light  
Blue limestone

Red Clinton iron ore in SW of  
Cumberland Co near Maurice  
Co. line

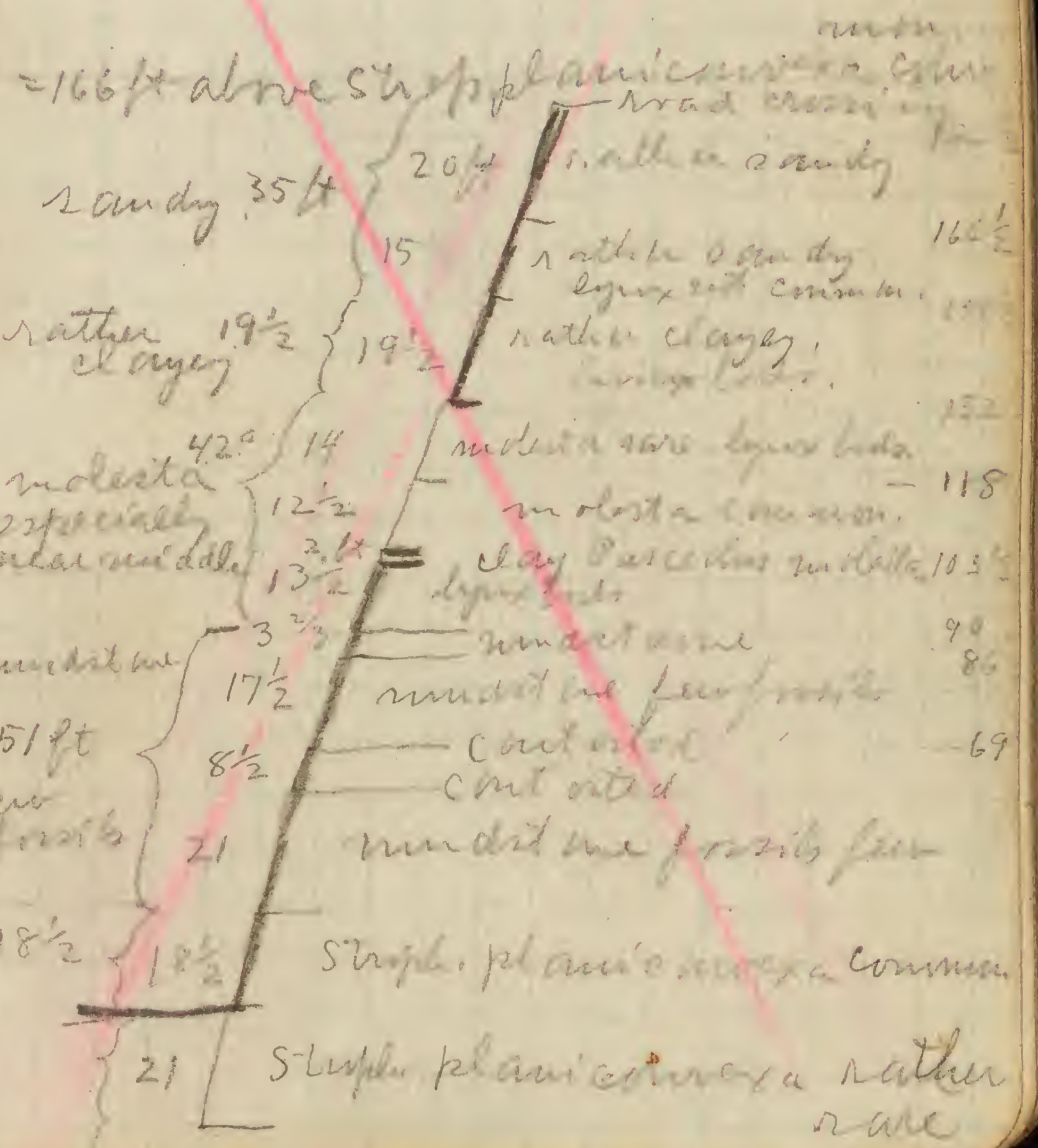




North Pine on Queen & Crescent  
in Whitley Co.

Black shale,  
approx. 100° White Niagara shale  
30° Clinton iron ore  
100° shales. Clinton,  
Blue limestone 10.

Red Clinton iron ore in SW of  
Cumberland Co near Man  
Co. line



Salt Lick.

Vanceburg.

3 Blankenship str.  
7 Valley PO, 3 str.  
folds of creeks.

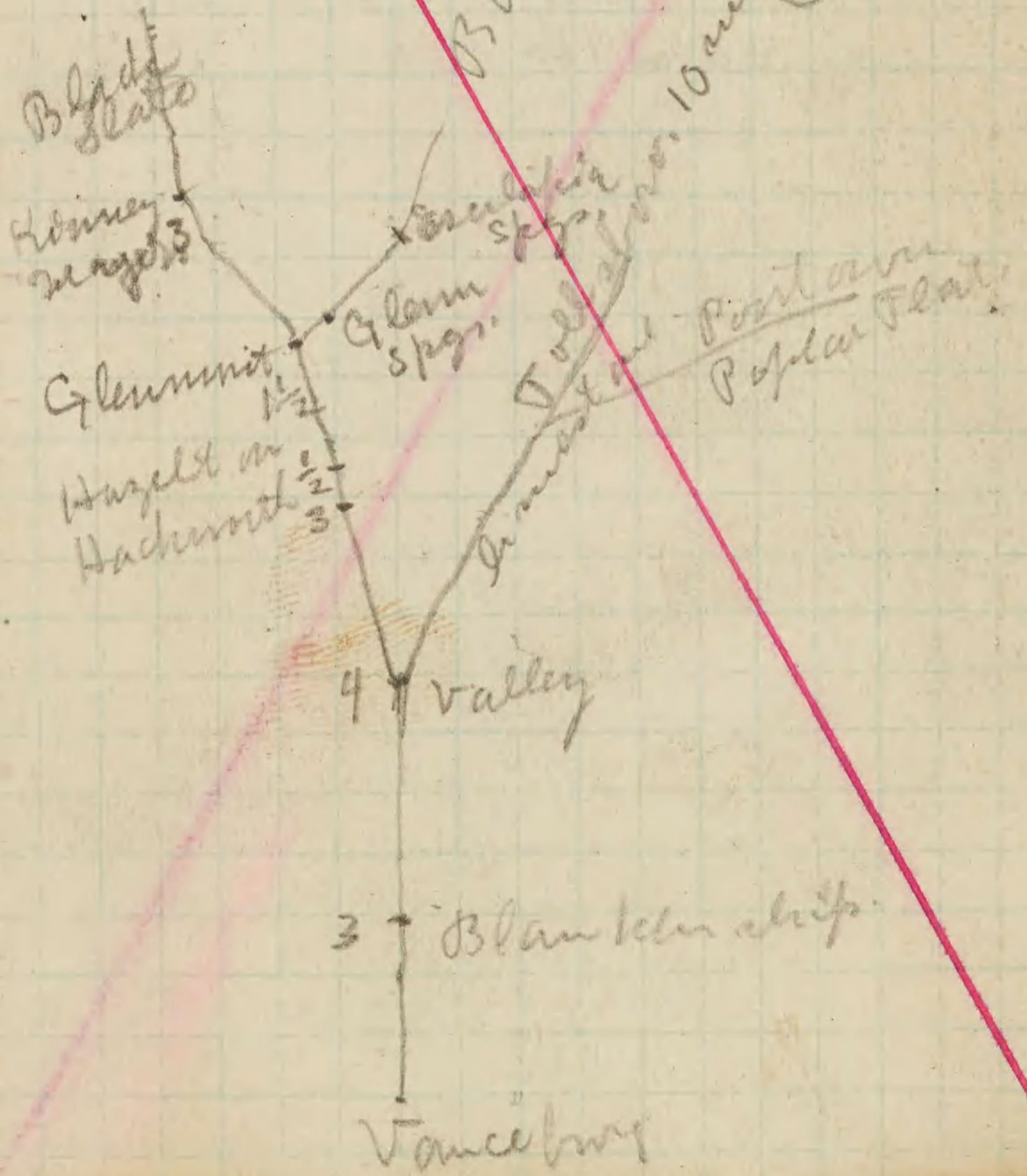
SE fork above valley.

+3 Hackworth str.

+3 1/2 Hazeltown PO.

+5 Glenmont fols.

fork to  
right (+5 1/4 Glen Spgs.  
+6 1/4 Escalopia Springs)  
Kinney str.



Report S 14 W, 65  
 S 24 W 35  
 S 24 W 60 Road, end of L  
 S 70 W 76 bridge  
 N 72 W 75  
 N 35 W 40  
 N 47 W 34  
 Black slate m. - W 25 creek m. R.  
 N 55 W 50 group of houses m. R.  
 Mollie's L, N 75 W 20  
 N 75 W 31  
 S 60 W 30  
 S 48 W 100  
 S 28 W 15  
 S 2 W 30  
 S 45 W 10 bridge stream - SW  
 Mollie's L, S 45 W 55  
 stream road S 52 W 70  
 S 78 W 50 wood cut  
 Chapel, S 85 W 32  
 S 85 W 50  
 Cartwright N 80 W 6 cross roads  
 School L N 80 W 84 Church & Church A  
 N 70 W 40 Mollie's School RB  
 Store L N 86 W 33  
 N 86 W 15 Blount's bridge  
 N 86 W 31 Smithfield, m. R.  
 N 86 W 11  
 N 32 W 27 Waverly P. C  
 N 60 W 30  
 S 80 W 50 Waverly t.  
 S 80 W 50 Waverly ! D

S 85 W. 27. Jess Hamilton,  
 S 85 W 175 road a lane m. R  
 S 85 W 35 Waverly.  
 N 85 W 60 Road to Creek m. R  
 N 85 W. 15  
 creek m. L W 25 Fine valley m. R  
 S 78 W. 23. Wood cut  
 S 78 W 85  
 S 88 W 35  
 Wine S 38 W 3 Wood cut  
 Fort bridge S 28 W 30 road R School SW  
 S 38 W 50 Fine valley.  
 S 45 W 190 Church R  
 Road L. S 54 W 60 to fork of road Valley.  
 S 54 W 20 Valley.  
 S 70 W

Valley, S 10 E 32 in eye  
 S 10 E 24 Church  
 Road L. S 10 E 20 small body of water  
 to Glenwood.

Left road, 1/2 m. back.  
 S 54 E 60  
 S 70 E 27  
 S 30 E 47  
 S 40 E 39  
 Lapham's S 48 E 45  
 S 44 E 20 white clay Blount's  
 S 8 E 15 covered Blount's  
 S 20 E 24 Cultus Carrington  
 S 15 W 13 Bl. sh. in bed of stream  
 S 10 W 37 Bl. sh. in bed of stream

night day  
 cone  
 S 55 W 13  
 S 15 W 40  
 S 22 W 50 light blue shales  
 S 65 W 40  
 S 35 W 36  
 S 40 W 28  
 S 10 W 25 freestone  
 S 5 W 18 freestone  
 S 10 E 33  
 S 15 top of ridge  
 S 12 Lane on R  
 S 32 E 10 B. on Harris  
 { 5 mi to Kimsey Pike  
 { 2 mi to Valley.

27

A. Christian Church W. of Charles  
 long Halyssite genuine, 8 cell in 1 inch  
 width.  
 13 ft of Lower Welder bed exposed  
 on H. T. Gose, Jr. farm.  
 4 ft poorly exposed below this.

B. Millie Calvert.  
 11 ft of Lower Welder exposed  
 north of house at opening.  
 And still farther north  
 is black slate above  
 level of farm Welder bed.

C. W. of B. on Harris.  
 The massive Lower Welder bed  
 is underlain by a yellowish  
 sandy clay poorly stratified,  
 forming a sort of clay rock.

D. E. of Jess to Columbus.  
 Coarse limestone, 27 ft ex-  
 posed, brown, tinged with red.  
 Long stretch above with broken  
 rock but no black slate. This  
 is far above level of B. Can  
 this be above B. black slate?  
 Further study, climbing up  
 hill N. proves this is surely

Exp. Gaph Vermillion

50 ft. nr exposures.  
50 ft. slate, blackish in places chiefly purplish.  
71 ft. clay + thin layers of stone,  
16 ft. rock, well stratified above,  
crinoidal but sandy looking  
+ towards base. Well stratified  
at all levels + sandy looking  
everywhere.

88 ft. clay, white + purplish  
opposite W a Mc Eldonney  
at Valley, just to be Es good  
directly below rock equiv.  
lent to the lowest layer in  
Gaph Vermillion section.  
Total thickness. It may  
be that this section is  
in error and that there is  
a fault here. The black  
slate section is altogether  
too small and I can not  
get a clear section here.  
The limestone seen at Church  
in Church is certainly  
absent.

- Valley S 54 W 20
- Mc Eldonney S 70 W 6
- S 70 W 34
- farm, grave yard S 85 W 50 Es good clay big section
- N 78 W 93 fine Org. cl. section
- N 70 W 62 Alfred Huffman
- N 80 W 92 Fine Org. cl. section
- N 70 W 90 Org. cl.
- N 58 W 59 Es good.
- N 70 W 39 Es good.
- N 65 W 40 stream road on R
- N 65 W 98 Es good on R.
- N 46 W 10 by store
- N 46 W 34 school Gilbert
- N 46 W 17 church
- N 46 W 70 fine Org + lower field  
more than 100 ft. high
- N 46 W 30
- N 50 W 71 wood culvert, Es good
- N 65 W 35 main valley
- 2 1/2 mi. to Creek's Run  
7 mi. then to Ohio N 68 W 46 road on right
- N 80 W 10
- S 60 W 18
- S 50 W 34 W Ed Dugan
- S 80 W 23 lower part black
- S 56 W 17 W. M. Dugan
- S 58 W 10 Road to Es good
- S 58 W 6
- Bar. A. S. S 45 W 18
- Exp. top. S 5 W 20
- S 10 E 13
- S 30 W 13

Alfred Huffman

Up hill back of house.

Black slate said to be further up hill.

18 ft. sandy rock with stratified  
ft very crinoidal rock fossils.  
110 ft. beyond clay  
bottom of valley.

This would be a good place  
to get cross to from Lower  
field along it most are

The ostracods seen at McEl-  
downey occur here also. They  
occur in thin shale (or sand) be-  
lieved now to be in beyond  
clay in upper part, at least  
within 30 ft of top.

The crinoidal limestone  
& masses of chert  
Linnæus? single tooth

3 above  
lines  
method.

Section NE of Durham house

11 ft similar to below.  
16 1/2 brown sandy shale, rock, massive  
160 feet beyond clay, have not seen

Asy. S 55 E 20 r  
S 18 W 65 beyond same ostracods  
S 5 W 70 Asy  
S 50 W 50 Asy  
S 75 W 120. Asy. Barley Harrison  
Road. S 75 W 7

At creek one 27 in of l.  
in thin beds dipping E.  
In this 2nd bed, massive  
Here the beds are thin,  
W 44 Asy.  
N 88 W 46  
S 58 W 24 bridge, mudal. beyond  
S 58 W 15. W.H. Lawrence store,  
2 1/2 mi to O'Fallon

Ribolt S 55 W 7 cross roads  
- name of page  
Asy. m. cl. S 55 W 155 Asy.  
M. & Church S 75 W 41  
Parrish Corp V 85 W 45  
N 85 W 17  
Cherty cl. S 55 W 24  
Hebertella S 55 W 29 bridge, cabin  
occ. shells S 70 W 48 samples at  
S 55 W 45  
Cherty cl. S 18 W 35  
S 38 W 65  
S 26 W 25  
S 65 W 38 family house road  
S 66 W 50  
S 88 W 136  
N 88 W 35  
S 80 W 120  
S 88 W 45 chert ch.  
Boyd house W 75 W 66

W of Lawrence et al.

Craving to dip 150 ft & partially  
by the north

166 ft greyish clay, which thin  
brown shale included  
at various levels.

3 ft brownish limestone

3 ft white clay

1 1/2 ft limestone

8 inches clay

6 inches l. strong wave marks,

4 ft clay with a little thin lime-  
stone 1 inch thick, several  
layers. Bryozoa in them

thin beds as well as in C,

8 inches limestone

very difficult to collect

Down road for about 50  
feet to top of rock

Rock dips SE following meas-  
urements to the det  
at top

6 ft 9 in (to top of faint) white layer  
4 ft clay.

C 6 in wavy layers

5 ft clay

17 ft clay with beds 1/2 ft about

4 in white l.

4 in unknown

very cherty limestone  
creek.

C *Phylloporina expansa*

*Platystrophia Daytonensis*

*Septacna subtridialis*

*Rhinopora frondosa*

*Cyathophyllum calycata*

*Platystrophia* with 2 + with  
many plications on fold

*Calymene* in part

*Dalmanella elephantina*

A fair collection of  
bryozoa could be  
made here.

100 yds West of Mt Church

100 yds east of Sam Cooper

limestone

34 ft to top of more fine grained

7 1/2 ft cherty limestone

5 1/2 ft cherty limestone

2 in west  
clay in str.

road NW 60 W, 12  
 Perkins NW 60 W 18 Tollsboro,  
 Between Cabin Creek and  
 this place the road appears  
 to turn about on the level  
 with the top heavy lime-  
 stone of the Oxford l.  
 series just below the  
 crat Orchard shales  
 proper

N 58 W 46 R road Church NW

N 72 W 40

N 82 W 30

White gate S 86 W 50

Road L. S 86 W 37

S 72 W 65 end of paper

N 75 W 29 Road R

N 75 W 60

N 65 W 148

school L N 82 W 80

N 82 W 60

S 88 W 22 Road crossing

S 88 W 17

S 75 W 36

N 66 W 20 Road subject

Jess Kirkland N 66 W 100

N 66 W 14

Dave N 85 W 49

N 85 W 4 Road R

Lewis Co.

1/2 mi. E of Mason Co. along road  
 base of Cherty Clinton. Widow Ruth Cole,  
 17 ft clay, some of it purple.

4 1/2 ft thin sandy l. in much more  
 sandy clay, hyzozans abun-  
 dant.

17 1/2 ft clay few fossils. Upper half of  
 section white sh with shaly  
 clay rock.

9 1/2 ft shaly clay hyzozans abund-  
 ant

47 ft limestone layers common, with  
*Rhynchotrema* *capax* at top

*Streptelasma* *montanum* at top

*Hebertella* *insculpta* at top, 95 ft

Below Esc or Worrick

at old school house Brown Run

190 ft from Clinton down to

layers with

*Leptaena* *dentata*, common

*Rhynchotrema* *dentatum*

This means 95 feet below

*Hebertella* *insculpta* layer.

and 40 feet below *Streptelasma*

*concordensis* zone and

35 ft below lowest *Streptelasma*

at Concord. I suppose this

this section should occur at

about this zone.

N of William Kieze's house.



The contact beds of the round  
stone series above the Staph.  
Planis cover you shown  
up well at the creek 1 mi  
and 1 1/2 miles west of the Lewis  
Co line on the Cabin creek  
road. The first creek leads  
up to Redsville. The second  
creek is followed by the Mayo  
ville fork.

The contact layer shows up  
well also on east side of  
R.R. bridge east of Springdale  
a considerable distance  
above the railroad.

Portsmouth

Plots 6, 7, 8. Mainly clay  
for paving brick. Pebbles  
Cr. 3 mi. E of Portsmouth  
center.

Visited Adams fire brick Co.  
Pebbles paving brick

3 mi E of Portsmouth

- 432 20 ft blue grey ss. weathering pebbles
- 412 22 ft poorly exposed
- 390 7 1/2 ft middle of 16 inch coal part.
- 383 5 ft No 2 clay (softer than No 1)  
white clay.
- 78 378 Base of No 2 clay. This is soft
- 374 ft - poorly exposed since 330
- 330 Rather solid freestone for 5 ft.
- 308 { but rather shaly  
Main freestone section. Below just exposed.
- 275 Top continuous freestone layer
- 160 Base of freestone layers
- 50 top of paving brick clay
- 0 base of paving brick clay

Pebbles source of clay

From RR bridge by Springdale  
S50W to top of hill on  
south side of pike.

330 1/2  
297 1/2  
33

108 1/2 ft path at edge of woods up  
to *Hebertella* massulifera  
layer. associated with  
*Leptaena subtridata*.  
Plectambonites layer  
occurs above, in abun-  
dance.

118 ft from upper path at  
edge of woods to road  
at base of wood.  
Total from *Hebertella*  
*massulifera* down: 226 1/2 ft.

25 ft from road down to wall  
the at which wall face  
angles. Total = 251 1/2 ft down.

48 1/2 ft down to top of RR bridge  
Total = 300 ft

17 1/2 ft down to point Total =  
317 1/2 ft down.

(Top of house = 297 1/2 ft  
down - house on hill at  
side)

13 ft down to top of red roof  
of station building  
Total of 330 1/2 ft

at RR bridge str. plani-  
convexa with characteristic  
lyngocyan fauna extends  
up to top of bridge. This is  
15 ft below top of house at  
cliff.

57 ft above top of building at  
bridge is base of Lyngocyan  
38 1/2 ft above top of building at  
bridge is top of upper  
concreted layer.

66 ft above top of building at  
bridge is thick Lyngocyan beds with  
mudstone - some more 13 feet  
higher up.

55 ft top of shed to lowest yard  
level  
Top concreted bed is 36 1/2 ft  
above top of building.

Between 52 and 61 1/2 ft above  
building there is much  
massive concreted mudstone  
few fossils. Both were

Copied 1916

6 1/2 and 6 5/8 ft above building  
fruits become common but  
lynx not very common above  
6 6 ft above building lynx is  
common. At 80 ft above  
building *vestita* is com-  
mon

Height of building is 15 ft  
Top of RR bridge is 5 1/2 ft above  
base of building

16 ft from top of station  
to top of bridge

24 ft from top of bridge to  
top on bridge

73 1/2 from top of station to wal-  
nut at angle of wire fence,

Summe = 277 1/2  
69 1/2  
208  
48

at least 256 to base of *Str. pl. common*

138 ft from base of lynx to *Rhy.  
dentatum* bed,

*Hebertella insculpta* at 33 1/2 ft above  
base of RR bridge Ed  
Springdale 127  
(*Strophomena emarginata*) 277 1/2

(*Lophoceras* *dentatoides* & *Rh. dentatum*) (237 1/2)

cross path at top of woods 224

33 1/2  
19 1/2

233

12

221

13 1/2

99 1/2

112 1/2

33 1/2

277

277

55

277 1/2

24

253 1/2

road at foot of woods 106

lynx common 97 1/2

lowest good locust 88

walnut angle wire fence 81

top of upper cut site 69 1/2

45 1/2 (29 1/2)

Top of house 33 at bridge

top of bridge 24 above top of house

top of locust 18 1/2 at bridge

top of station 7 1/2

bridge

Top of house to top of station = 25 1/2 ft



2 ft down to top of old large tree  
stump at angle of road,  
5 1/2 ft chiefly clay with some l.  
with few *Hebertella* & *Spirifer*,  
*Lophospira* *burdeni*, = rubble clay  
rock. 69 1/2 down

6 ft. chiefly rough limestone weath-  
ering shaly.

9 ft poorly exposed, several good  
limestone layers. 84 1/2

2 ft down to top of dense blue  
clay limestone with 3 large  
specimens of *Lyons*,

11 ft dense clay limestone, blue,  
dark. *Lophospira* com-  
mon in some of the lower  
layers. There are the 97  
dense blue limestone beds above  
the *Lyons* beds at Cottage  
section. Above summit of Red  
River in the Kentucky.

Top of characteristic *Lyons* clay  
limestone full of *Lyons*

14 ft *Lyons* beds,

— } mgy beam dropped  
— } *Rhynchotrema*, *dentatum* *Lyons*,  
11 ft limestone, chiefly dense  
quite massive *Lyons*. base not  
seen.

This must be the shaly  
unconformable beds of the  
Harvard mill section.

( *Hebertella* *insculpta* appears  
again east of abandoned  
line 8 mi east of R.G. Har-  
vard

( *Hebertella* *insculpta* occurs also  
just east of where dirt road from  
Sunset to Davis mill joins the  
pike.

East of Harvard to den. E of Davis  
top of *Lyons* beds. 97

82 1/2 ft rubble stone with *Lyons*  
when part was examined

15 ft more solid limestone, dense  
blue, quite unfossiliferous.

45 ft rubble stone with *Lyons* less  
fragments than any one in  
more typical *Lyons* beds.

18 ft comparatively unfossiliferous  
top layer with *Strophomena*  
*planumbona* total 150

the end of Wyoming.

Middle Richmond

Residual chert or chert,

10 ft white clay,  
11 ft brownish sandy clay,  
fine sandy l. layers.

16 1/2 ft sandy clay with much  
sandy clay - Middle Rich.

33 ft sandy clay limestone  
interbedded with  
sandy clay. This is a sandy  
limestone at top. This is a sandy  
limestone at top.

Hebertella insculpta rather

7 1/2 ft sandy clay limestone with

15 ft top of distinct l. beds

2 1/2 ft (6 in. l + Stroph. planumb at top)

2 another thick layer C. head near

5 1/2 beginning of good exposures

18 1/2 thick layer in road.

20 large oak on left, Hebertella beds

17 ft chiefly dense blue clay limestone

with few fossiliferous at base common

limestone with layers abundant

cut

Fossils few in upper part of Middle  
Richmond. Between 10-13 ft

above base Pleistombrites is  
common, also Pyllopora gracilis  
at least very small diameter,  
Stroph. retorta very rare.

About 3 ft above base Stroph.  
retorta, Pylloporotheca capax  
is very preserved.

Base of Middle Richmond  
and Top of Lower Richmond

Strophomena

Strophomena planumbona

Calymene?

Pylloporotheca capax

Strophomena

Protarea retorta,

Hebertella insculpta,

Platy strophomena

Diploporites is not found here  
but probably displaced from  
top of Richmond.

Hebertella insculpta

The preceding fossils are fairly  
common from base down to  
the same calcareous limestone  
8 ft down.

There was no Diploporites  
retorta found in the  
Middle Richmond, as far as  
I could see.

18 ft below top of Hebertella  
insculpta a single Pyllo-  
porotheca was found.  
Stroph. neglecta were at 26 1/2 ft.  
below top of Hebertella.

insculpta layer, must  
have come from about that  
horizon. excellent interia  
of ventral valves. Stroph. mel.  
in planumbona also occurs  
here. From 23 ft below  
the insculpta layer down  
Robertella sinuata is the  
chief fossil however.  
Zygospira heads excellent.  
35 feet below top of H. insculpta

Strophomena planumbona  
rare but here, as far down  
as top of dense blue clay rock  
81 ft below top of H. insculpta  
bed. Whole thin suggests Rich-  
mond age, the great thickness  
of the Green Richmond so that  
there is against it. Collected  
by zone 0-5 ft above this level  
= 81-76 ft below H. insculpta  
5 of Rhynch. dentatum  
found just above dense blue  
clay limestone also Leptaena  
retrorsidens. This is  
probably identical with the  
Rho. dentatum larger at  
the Brownstown 2 chert  
is more east of Rockville  
about 2 mi, 1 mi E of  
Loris or here.

The dense blue limestone con-  
tains very few fossils. The  
first specimens large enough  
to be unambled by us occur  
16 1/2 ft below top of massive blue  
dense limestone. 1 Rhynch. de-  
ntatum appeared to  
occur (here) near lower part  
this part of section (14 ft down)

The top of lymy limestone was at  
1 1/2 ft below down.

These lymy bed layers appear to  
be very thin layers down from  
15 ft when possible beds.

Section 25 S of Arwingsville

Upper Richmond

2 ft Belfort layers? Clinton above

24 1/2 ft greenish white clay

15 ft sandy limestone occasional clay

27 1/2 ft sandy limestone common in sandy  
Diplostridium capax, Strophomena  
Diplostridium subquadrata not rare.

middle 3 1/2 ft sandy rock and clay Din. subquadrata

low 1 1/2 ft sandy limestone {Plectambonites  
Leptaena

13 ft chiefly clay

{ Trematoceras

{ Ambonychia in situ, Strophomena boudin,

{ Stroph. planumbona common a short  
distance above and below this.

11 ft chiefly Hebertella

5 ft Adams bed.

8 ft rubble clay rock. Hebertella at base

2 1/2 ft Hebertella rubble

1/2 ft Hebertella blue l. with P. hospitalis

11 ft Hebertella + P. boudin clay rubble

10 ft rubble abundant clay rubble

but fossils scarce

1/2 ft heavy dense blue l.

5 ft sandy clay

10 ft blue exposed

limestone full of the 2 common types

as the layers just above

the clay strata forming the

first layer beds, in Wyoming

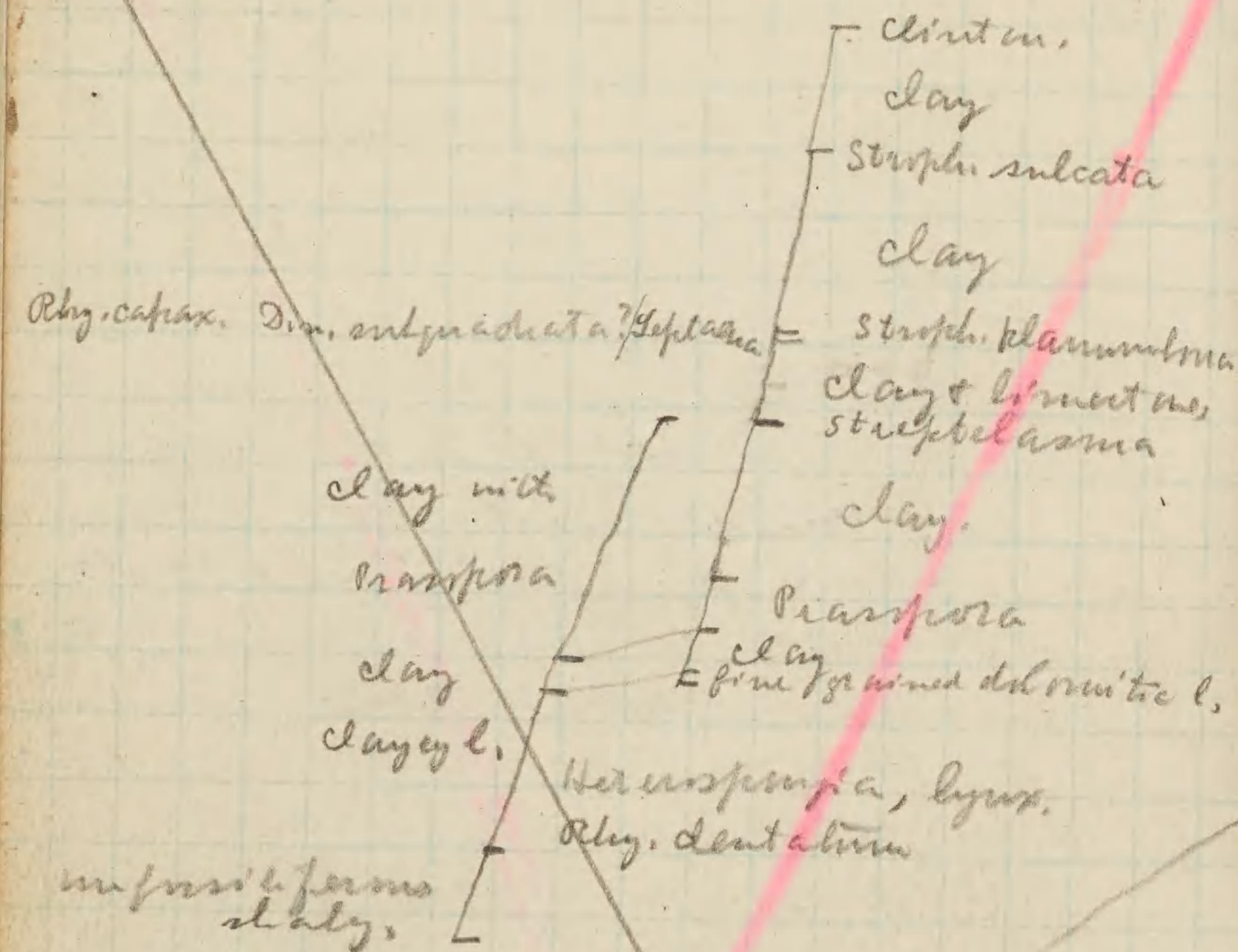
see

Clinton base 20 ft below top of

On a former trip, Leptaena  
Hebertella appears to have  
been collected in the lowest  
limestone of this section. The  
base of this section does not  
appear to agree well with  
the base of the section east  
of Wyoming but the upper  
and middle Richmond  
& upper part of the Lower  
Richmond are all right.



Loc. 24.



- Record 24. Loc.
- 60° white clay
  - 3° Thin l. = rubble
  - 5 1/2° Thin brown l.
  - 5 1/2° white clay
  - 1 1/2° { Strongly ferruginous, some red purple.  
Wavy. One Whitfieldella
  - 2" Limestone. large crinoid heads
  - 1 1/2° Clay
  - 6"-15" Strongly wave marked layer
  - 3° Chiefly clay
  - 9° 3" limestone.

- 60 ft to top of short Devonian.
- 3 ft thin l. with rare clay
- 6 1/2 ft thin l. interbedded with clay
- 5 1/2 ft clay
- 4 in. wavy limestone
- 4 in clay.
- 1 ft limestone. strongly ferruginous.
- 2 1/2 ft clay.
- heads.
- 9 in very wavy limestone. Large crinoid
- 2 ft 3 in clay
- 1 ft 2 in. irregular limestone.
- 10 in massive.
- 6 in clay
- 10 ft massive Clinton

5	8
1	
2	6
	9
4	9
10	3
37	

1/8 - 1/4 mi. E of Howards Mills

- Cherty Clinton
- 15 in. Belfast bed.
- 24 ft greenish clay.
- 27 1/2 ft sandy clay l. in sandy clay
- 5 1/2 ft massive sandy limestone
- Strophomena*
- Strophomena* which?
- Strophomena planumbona*
- Heterella sinuata*
- 12 1/2 ft not exposed well, probably sandy clay
- 17 ft blue clay rock cradling irregularly well exposed.
- 5 1/2 ft sandy clay with *Plectambonites* note very common.
- Plectambonites* abundantly abundant in 6 1/2 feet sandy clay. The absence of an abundance of *Heterella* *occidentalis* here and in 2 layers below in note worthy.
- 3 ft hard blue clay rock, *Plectambonites*, *Lamplite* and *Plectambonites*.
- 4 1/2 ft bluish clay rock much broken up. *Plectambonites* common.
- 8 in. blue limestone
- 12 ft 9 in. reddish brown limestone composed largely of *Plectambonites* remains same as last of *Plectambonites*.
- Heterella*, *Plectambonites*

In the lower part Lyons is found,  
 18 ft. dark blue clay rock nearly unfossiliferous  
 30 ft typical Lyons beds,  
 24 ft down to creek. At Howards Mills the lower 12 ft of this part are seen to be nearly without fossils (*Heterella sinuata*) and the remaining 12 ft are *Lyons*.

Paris N of town

- River level
- Plectambonites sericea* } Hermitage
- Dalmanella* } Trenton
- Zygospira*
- From River almost up to RR
- Orthis borealis*
- Plectambonites sinuata*?
- Dalmanella subquadrata*?
- At RR + above.

Manzanillo  
 Limestone cracks  
 massive layers

Platystrophia sp. circular? with lymex,  
 near middle, large Plat. lymex  
 but shells thin, not the same lymex

9 1/2 ft clay + some good l. attached to 50-41

5 in l. *Dalmanella* common

9 ft clay with nodules

6 in mudstone gray l. 2 ft feet S of  
 road by the lymex up creek

[ 3 1/2 ft clay fossils collected to 31-2

2 ft chiefly massive l. wave marked, 27-8

4 in l. with Plat. 1" wide

3 1/2 ft clay

2 ft chiefly massive l.

3 ft clay, *Strophomena* small in l.

4 in limestone with wave marked  
*Strophomena*, *halia* + *Cyrtospira* (16)

[ 4 ft clay (16)

12 ft lowest bed of *Strophomena*  
*halia* up to top of bed  
 from at contact south of  
 the school house about 200  
 yds

Base of section

AF = 0-12 ft      BF = 27-8 to 31-2  
 CF = 41-1 to 50-7      DF = 50-7 to 56-1  
 EF = 70-4 to 73-6      Balmspl. = 96 to 116 FF  
 GF = 116 to 134-6      HF = 185 1/2 to 199  
 IF = 201-213 1/2      (83)

main plan  
 zone

When fossils first  
 appear in section  
 R. R. section  
 beds of limestone the  
 16 1/2 ft upper 5 ft of same  
 lower part not exposed 16  
 ft of this 30 ft = a gray limestone  
 planic columnar *Cyrtospira*  
 37 ft to base of beds with *Strophomena*

off summit SW 79  
 bridge across road leading  
 5 ft to top wavy layers middle  
 EF 3 ft ab. chiefly l. 70-4

middle regular bridge 59 1/2

3 1/2 ft planic bed of limestone  
 DF 5 1/2 ft clay with wave marked 56-1  
 in upper *Dalmanella* common 50-7  
 middle with

Fine exposures at first sta-  
tion east of Mentor. Wt. ca. 2'

not Washington in end of Flynn  
Clinton creek section

40 ft Madison beds

43) 3 ft bright rubble with Str. retorta

54) 11 ft layer with clay thin. fragment with  
sinuata Pley. capax.

Str. retorta, Partarea, Stroph.

60) 6 ft middle Richmond with

Stroph. small, Madam spec.

Stroph. retorta Partarea.

Pley. capax. Stroph. retorta

D. without subgenus

61) 11 ft lowest layer, Partarea

Stroph. subcosta

Stroph. subcosta

like one at Concord

P 5-3 4 ft end of clay limestone with

Stroph. subcosta

65-3 2 ft Tetradium at top

66-9 3 1/2 ft Columnaria shells

Tetradium in rubble rock at top

72-3 5 1/2 ft rubble, base top is Columnaria

shells & Partarea in middle

81-3 2 ft rubble stone. Top is Columnaria

apparently Columnaria, some corals

free on surface, coral at top

see on surface, coral at top

Hays Spring

2 1/2 ft clay.

6 ft Lower Laurel rock

23 1/2 ft from top of Clinton in  
at least of the solid basal  
Washington to top of a clay  
bed above which the upper  
part is clay rock. This is the  
lowest clay.

high  
near  
Clinton

40 ft lowest Clinton 3 in blue ls.  
with Stroph. retorta.

8 ft white ls. rubble with  
Stroph. retorta, Partarea, Str. retorta  
Pley. capax. Stroph. retorta

S of Flynn's Creek

M { not Washington  
same small type as N  
and Partarea in rubble  
near top and Stroph. retorta

I { 5 ft rubble ls. with Columnaria  
shells & Partarea

45 ft blue limestone, upper part with  
Base of shell of Columnaria with

13 ft Tetradium in rubble  
see on surface, coral at top

5/1 1884 Washington  
layers  
350 Top of late white beds fossils  
collected.

11 ft further down, is *Lepidoc-*  
*eras* *umbroidalis*. fossils  
collected at *Lepidoc-*  
*eras* (same?)

= 40 ft Masson  
21 ft Middle Ryck  
22 ft down to lowest *Strophalaema*

4 mi E of Bardonia on 87  
Fredericktown pike N. of  
Oriskany

6 ft 8 in. Masson Bardonia rock  
2 ft white clayish, few *Tetradium*  
7 ft *Tetradium* abundant white  
clay rock.

6 ft banded Masson rock.  
6 ft clay sandy, somewhat banded  
near middle *Strophalaema*  
*umbroidalis*.

5 1/2 ft very fossiliferous clay, sandy  
*Dinorthis* *edgemoysi*, *Stroph-*  
*alaema* *umbroidalis*, *Physalotrypa*  
*capax*, *Strophalaema*.

4 ft clay rock, white, crisy to clay,  
*Strophalaema* at base.

4 1/2 ft. *Clypeolites* - *obovatus* (stellate)  
*Cochlospira* beds. Masson corals  
at top and also near base.  
A few other levels, largest *Stroph-*  
*alaema*, 2 1/2 ft across, evidently *Stroph-*  
*alaema*.

1 ft *Planorbis* *umbroidalis*. *Strophalaema*  
*umbroidalis*.

1/2 ft. *Cochlospira* *umbroidalis*  
4 white rubble.

2 1/2 ft *Tetradium* large in upper  
part of white rubble.

20 in. thin blue ls. with Columnaria  
 Halli 55 inches below top, small.  
 1 1/2 ft white clayey stuff with  
 B. intricata faintly imbedded  
 but loose, believed to be in situ.  
 1 ft clay rubble with fossils  
 1 1/2 ft not exposed,  
 irregularly bedded in  
 red.  
 Faded out on level.  
 (4) 1/2 ft solid blue clay rock and  
 clay shale hard  
 4 ft brown with Lygia helveticus  
 and Platystrophia at top.  
 All the rest shaly sandy  
 6 1/2 ft below Coral bed  
 6 ft sandy clay shale with Lygia  
 300ms + Helveticus + Platystrophia  
 3 1/2 ft hard micaceous l.  
 4 1/2 ft blue + clay rock hard  
 with fossils. Gully also  
 with fossils. One made  
 last year, last year top?  
 90 ft down to base of section  
 with Platystrophia + Lygia  
 35 ft down to base of ledge  
 bed of timber.  
 No attempt to locate highest  
 Lygia.

Chemistry of Pottery  
 Simon & Shaw  
 Scott, Greenwood & Co.  
 19 Ludgate Hill. E.C.  
 London. 1900.  
 17 sh. 6 d.

viscous.  
 glaze - vitrifiable compound  
 transparent for painted  
 translucent for enamel  
 Gold color Delft ware, 17th Cent  
 frit - litharge 75  
 sand 25  
 grind fine, dry,  
 fuse with silicon nitride  
 heat in crucible to green glass  
 apply with brush  
 apply to well heated ware.  
 in muffle course glaze  
 to flow and let cool  
 avoid vapor of burning  
 vegetables.

41  
 2399  
 290  
 25  
 4

Pottery

Hand book of Practical Pottery  
for Art Teachers & Students,  
Chapman & Hall, London,  
1903. 2 vol. 5 sh. each.

Green to yellow with, light pencil. Ductile like  
Decorations.

Underglaze colors.

Camel's hair brush  
fat oil of turpentine etc.

Hardening in.

Red heat to burn off the oil.

Glazing.

oil or spray on.

dry glaze in wooden tub, pour  
in warm water, mix three parts  
through 200 mesh. pour off  
mud water, keep in tub lined.

Glaze thickness of milk. Stir  
from white dipping. Dry.  
Remove glaze from places  
where supports are to be  
placed. = saddles.

Steam escapes, close kiln

2 hrs = hard kiln for color

1 hr = porcelain or enamel colors

Cool in 1 hour.

Glaze flint 100

China clay 45

Paris white 55

borax 78

red 20

ground flint 265

flint 20

Paris white 14

at one 80

white lead 70

Raw glaze.

White lead 160

borax 32

at one 50

flint 52

10. 2358.2 & A Barber

709. T 828, Priggs.

Harpers, 1881 May.

Miss McGaughlin.

Rockwood 1880 first kiln.

Underglaze color, get as near  
to the color as possible with-  
out complete

red clay Buena Vista, O

yellow Hanging Rock, O

cream or white Chattanooga, T

Now only underglaze used.

Painting, printing oil on

linen tissue paper.

overglaze rubbed with soft flannel,

after firing, fluffed off.

underglaze = print washed off.

Majolica = color mixed with  
the glaze.

*Orthis retroza* at Amherst  
in banks of Straight creek

Along Straight creek in front  
of Miss Kate Berry, 1/4 mi.  
S. of Danvers

*Leptaena subrotalis* in  
creek bed.

Opposite Ford Berry *Leptaena*  
*subrotalis*, just below  
*Strophomena planumbona*.

Opposite Adam Barr, *Leptaena*  
*subrotalis*

Top of *Strophomena planumbona*  
is 30 ft above level of creek,  
at Blue Bank, Green of city  
& Long limestone overlaid  
by other stratified beds.

Top of *Leptaena* - about 10 ft  
above creek, interval between  
conformable top of *Leptaena*  
and = 25 ft above

6 ft up to top of *Strophomena*,  
12 ft top of blue clay, down to  
strong wavy lamination.

7 1/2 ft

+ top of *Leptaena subrotalis*

*D. juposa*

95

the largest 1/2 inch wide,  
with flat, lumpy form

thin *Leptaena* of more clay,  
7 ft. about - articulated, possibly soft  
bedded in main body.

5 1/2 ft. coarse sandy (irregular) l.  
7 1/2 ft. cement + clay interbedded.

4 1/2 ft. *Rafinesquina* here abundant

1 1/2 ft. *Strophomena planumbona*  
less common below

3 ft. clay, *Lyrus* abundant at top  
- wave marked layer

Chicopee and Columbus R.R.

PM	PM	AM	AM	PM	PM	
5.30	12.55	6.50	Ripley	9.45	4.05	8.30
6.15	1.40	7.25	Geet.	9.00	3.20	7.45
6.50	2.15	8.10	Sandia	8.20	2.25	7.10

— 25 1/2  
— 10 ft.  
— 26



N. of Blanchet

3/4 mi N. of Blanchet. *Platystrophia* <sup>15</sup>/<sub>43</sub>  
small. *Dal. multisepta*. *crassa* *anpina*.  
1 1/4 mi N. of Blanchet  $\frac{30}{42} - \frac{25}{42}$

Two mi N. of Blanchet.  $\frac{0}{42}$

Three mi N. of Blanchet.  $\frac{0}{41}$   
*Strophomena halli*?  
*D. multisepta*.

1 mi N. of Warsaw, Ky, Russell Co.

35 ft below track, at Wildcat

AF = *Leptaena rhomboidalis* zone.  
11 ft below the 3 ft bed forming  
top of lenticosta zone at  
S. of Mt. Washington, Warren

BF = 3 ft = top of *Platy. laticosta*  
bed at  
S. of Mt Washington, Ky.  
Base of Lower Richmond

AO = 0-5 ft below *Orthorhynchula*  
beds. 1 mi N. of Point  
Lick, Ky. Middle Fairmount

BO = *Orthorhynchula* bed.  
1 mi N. of Point Lick, Ky.  
Middle Fairmount

CO = Chief *Stroph. mayevillensis*  
horizon 1 mi N. of Point Lick, Ky.  
Base of Fairmount

AQC Crittenden Sherman Dry  
Ridge, Ky. Bellevue.  
Bellevue. *Molista* beds.

Upper part of Fairmount  
*Molista* is only abundant in upper part  
of Fairmount in Fairmount section  
and is less abundant in Middle F.

AW. = *Rhynchotrema dentatum*  
zone. E of <sup>Warren</sup> Wyoming, Ky.

BW. = *Leptaena rhomboidalis*  
zone. E of Rectorville,  
Lewis Co. Ky. Warren

AR = 0-14 ft below *Streptelasma*  
SW of Sunset Ky. = SW of  
Hillsboro, Ky. ~~Warren?~~  
*Prasopora* layer. <sup>Small</sup> ~~Warren?~~  
mud

BR = *Prasopora leopitabis* zone  
at Howard's Mill.

4 Loc. — 1/2 mi S of Rocky bar,  
in bottom of stream 60 ft below  
top of *Arthis localis* & *Rhynchotrema*.  
170 ft below layer  
with clay nodules in crinoidal  
limestone.

3a Loc. East of Rocky bar along road  
up hill among loose rocks along  
road side. Probably from upper  
20 ft of the Trenton. Associated  
with *Stroph. like planum curvum*,  
*Platystrophia* small, *Arthis*  
*localis*.

3 Loc. — Rocky Bar, Ky. 99  
20 ft below top of Trenton.  
W gully east of store.

170 g. inches =

Base of Utica east of Hattin =  
57 <sup>1/2</sup> mi. W of Lexington,  
W. of Berea, 3/4 mi. E of  
Hattin.

20 ft above base of Utica E of  
Hattin.

*Stroph. halli* zone. W of Hattin,  
= 90-100 ft above base of  
Utica, not corrected.  
Middle Utica

Top of Middle Utica. E of J.F.  
Lea. W. of Hattin. 137 ft  
above base of Utica, not  
corrected.

Base of Velt. Sp. W. of Hattin, Ky.  
just above lowest *Stroph.*  
*maysvillensis*. 1 mi. E of  
Covington, Ky.

— Base of Faden cr. W. of Hattin,  
above soft clay bed, above  
*Stroph. curvum*.

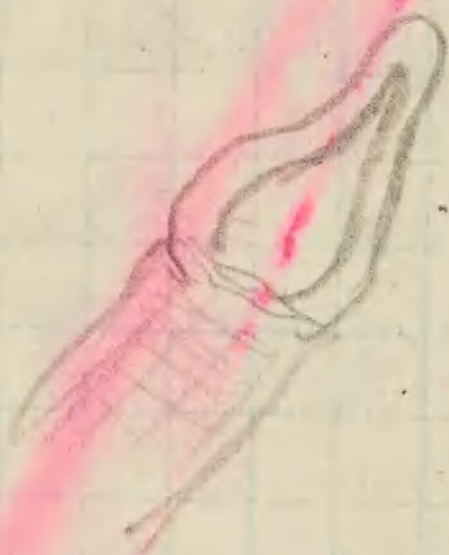
Falmouth

Base of Utica. 115 ft above  
bridge N. of town.

10 ft below base of Utica =  
a short distance below  
top of Trenton limestone  
105 ft above bridge, at  
strong turn of road.

45-55 ft below the Utica.  
Falmouth Ry. = 60 to 70 ft  
above bridge, just below  
heavy limestone.

38-45 ft above River = above  
railroad North of bridge,  
Falmouth.



Ridgely  
Vincennes

\* Saluda (Madison)

White water

Liberty

Waynesville

\* Amherst (Warren)

Mt Auburn

Corryville

Billerica

Fairmount

Wet Hope

Upper

Meade

Lower

Waynesville

Verona

Eden

Rice Run.

8 ft soft clay,  
4 in. limestone  
4-6 in. blue hydrated ore  
3 ft. red iron.

*Phanopora expansa*  
*Callopora magnifica*  
*Lia Clemella divisa?*  
*Lepidodermis rhomboidalis*  
*Cyclonema Dyeri*  
*Solenia elegans*  
*Orthotheca* 2 or 3 from Fairfield

Black shale. Dev.

8" light brown clay rock, shaly.  
4" more solid, worn markings.  
10 3" light brown rock poorly exposed.  
10 light brown rock, cherty.  
10 Same, cherty, few fossils.  
20 5" Same, casts of corals, chert levels.  
2" chert, corals plenty.  
10 1" light brown lined, cherty, corals.  
1" chert, corals.  
10 10" light brown l. cherty, corals.  
10 8" light brown l. fossils few.  
2" dark blue sandy fish layer.  
(10 8" = Devonian l. section.)  
(10" = maximum thickness fish layer)  
23" clay down to part L  
(350 clay not measured)

E of Williams Johnson, E of L 44

5 ft limestone & clay.  
7 1/2 ft blue clay, Plum creek.  
4 in. light brown limestone.  
8 in clay  
1 ft ferruginous limestone large in nodules  
beats in lower part.  
5 in limestone large round beats on good  
with *feldella*  
7 in clay  
4 in limestone bed.  
7 in clay  
1 ft ferruginous limestone

Cut William Johnson L44  
Base of Clinton in. Very cherty

Hite's station NE of  
station about 3/4 mi  
Cliff of white  
P/C 15 to 20 ft  
with a few fossils

Ornithomys 4 mi N of Peter  
Inland 35 with of Red  
house.

Formed in with 200 ft  
in depth. 100 ft. common  
Columella, bivalve Belemnite

55 ft shaly  
5 ft clay rock, fossils few.  
1 ft Limestone with Sabalites  
common, a few Sabalites  
higher up in section

5 ft Limestone rubble, shaly  
spots rather common.  
Rhyolite stream  
at top, less below  
Limestone abundant  
up to top at all levels  
8 ft. Limestone, fossils

100 ft of fossils

2 ft clay rock, marl  
fossils few.  
2 ft very fine grained blue  
stone - dense, in several  
layers. No fossils  
6 ft shaly clay rock, fossils  
Base of section not seen  
here.  
(At least 15 ft total of  
this shaly rock faulted  
out  
Mt Carbon age, Limestone  
Lynx

C 113 = 1/2 mi N of expense

at bridge north of Red House  
Columella, bivalve abundant  
throughout 10 ft section  
underlain by limestone  
1 ft thick!  
5 ft section by 5 ft  
higher up.

About 1/2 mi N of Red House  
Strophomena williamsi is  
abundant. Tom Anderson  
2 mi N of Red House just N  
of big bridge. Mt Hope with  
1-3 mi limestone & abundant  
Strophomena williamsi

NY ledge 3/4 mi S of Schenectady  
- Harvard ss. today decaying  
[part] Ed. Miller 1877

Cypha = crassa  
Dichotoma = fissicosta  
mexicanus, "testudinarius"  
mormonensis, "Syn. of a betterella (?)

2nd ed. p. 29C

Cypha circumnata, new sp.  
Wood Riv. Co., Cincinnati, Ohio.  
Proposed instead of  
Cypha costata, Hall 1845  
Am. Jour. Sci. and Arts.  
This is a very small  
species, found associated  
with other minute fossils  
in Vine street hill. "

Fig 2. Tangential section  
nearly enlarged. In this  
specimen the cavities of the shell  
have been filled with yellowed  
concrete, and the shell  
has been subsequently dissolved

Michigan by Dr. Hayden  
Am. Jour. Geol. and Min.  
Cade Stomatopora oridea

- Actinostromatida
- Actinostroma
- Clathrodictyon
- Stylodictyon
- Fachia
- Stomatopora
- Stomatopora
- Stomatopora
- Paralithyris
- Syringostroma
- Idiosstroma
- Idiosstroma
- Stomatopora
- Stomatopora
- Stomatopora

L. Ohioensis, n. sp. p. 83,  
from the Cincinnati  
group of Ohio.

Fig 1. (Plate II) L. Ohioensis  
n. sp.; vertical section,  
enlarged 12 times. Cavities  
of the group, which were  
filled with concrete,  
out, and replaced by transparent

Bectra con

nodulosa, Fig 1. Com G. Man'ia  
(= undulata!) 2  
(not nodulosa) 3

nodulosa Hudson River Co.,  
West end of 1st house  
Anticasts  
coll by Richardson.  
Fig 4

coll by Webster  
5  
6  
7  
8

Popular Mechanics

15.3 4  
13.6 10  
17 9 2 4

39° 6'  
13° 6'  
26°

Penguin to Penn of Paddy  
Ford 2 1/2 mi West  
Charlesville

Dalmanella exceedingly common  
5 ft Ford not seen except top  
20 ft Approx. abundant  
8 in. abundant + yellow with  
Dalmanella in yellow limestone  
a clay section + Bygonia  
16 ft at a guess in the section is associated  
with a lot of clay, much  
much water. Both limestone  
elliptical with Dalmanella  
limestone without the Dalmanella  
with a perfect joint, following  
at distant level, associated  
Dalmanella in thin limestone  
3 ft Dalmanella in clay  
smaller quantity same as below  
50 Clay + clay limestone with  
Cybexa Mealya a common  
in bedded. by Dalmanella  
50 6" Clay with much less clay  
60 6" Nodular clay with Dalmanella  
An. nodulosa in yellow  
at top. com on down

from top in 1 in. limestone  
 4 ft 1 in. Si. gas bed, with Leptacma 4 in.  
 R 5 ft 6 in. clay with little thin  
 limestone.

Helvetia incepta lower  
 bed with wave marked  
 limestone at top and  
 several limestone layers  
 below.

Wave marked layer at top.

salcata

Str. mutans, mutans concens

neglecta

neglecta quadrata

neglecta vetusta

vetusta - Charles Wiltoni

vetusta

Leptacma rhomboidalis

Rhynchotrem - capax

dentatum.

Streptelasma

Lobelia

Tetradium

R. clays with few limestone  
 limestone with Pecten  
 sp. etc. + M. etc.

2 ft 4 in. chiefly clay + clay l.

8 in. Leptacma series, several  
 layers of l.

10 in. chiefly clay

8 in. Strept. planumbona - sub-  
 vent. common in several  
 layers of l. pl.

6 or 3 in. l. + clay, interbedded  
 l. + clay.

4 in. Helvet. incepta in 2 in. l. at

4 in. l. Helvet. incepta with  
 large pebbles from which large

(See next page)

4 in. l. with Str. neglecta B

1 or 4 in. clay

10 in. several l. with neglecta

3 in. to top of limestone with Str. neglecta

4 in. to top of layer full of planumbona

2 or 7 in. to top of layer forming  
 falls.

3 to 8 layers

6 in. R. etc. quite distinct

9 in. clay chiefly

5 in. solid limestone strong

2 in. D. etc.



~~Verispa Salcata in some  
layer above Disturbed layer  
usual bed,~~

~~heavy layer,  
top of Robert insculpta~~

~~Interval 12 ft.  
Layer flat Petradium~~

~~limestone 2 in Robert insculpta~~

~~Interval 2 ft 3 in~~

~~Disturbed layer light sand~~

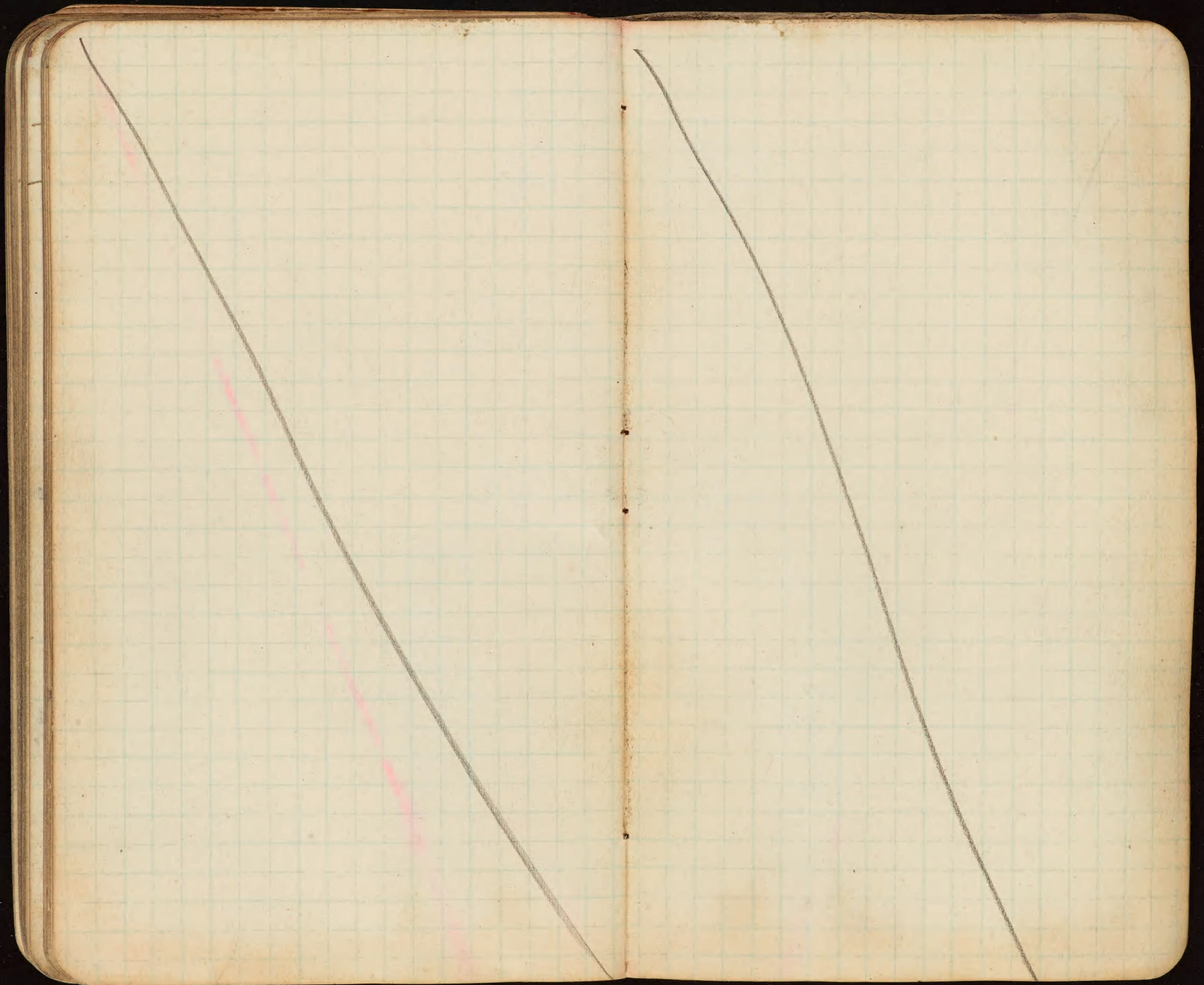
~~Interval 3 ft~~

~~to typical. Total = 1 ft.~~

~~Clay with 2 in <sup>at top</sup> shell, St. neglect~~

~~B. above this is~~

salcata comes in in some  
places within 3 ft of proben-  
ted, above the bed, and  
becomes rather common  
in 3 ft below lower in-  
sculpta.



*Staph. curvatus deformis*. Rowley  
near Big Creek P.O., Big Creek.  
Ceylon.

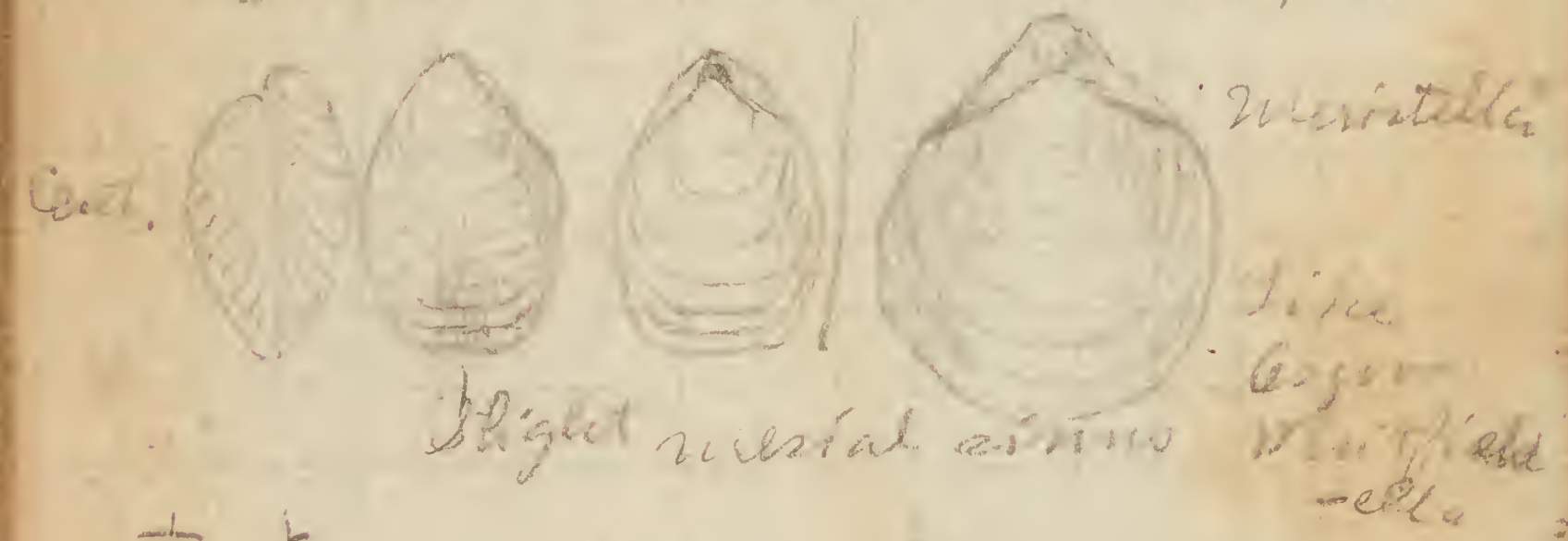
*Staph. quinquepartitus*. Rowley  
near Big Creek P.O.  
G. R. Greene  
127 W. Market St.

- From  
 Dark grey limestone. Thales Alex Co. Ill.  
 Dufrenoyia Danae M + W  
 Compare with Tennessee live  
 specimen at Glenkirk St,  
 Alton Ill.  
 Tall spire.



Pterinea Thales Alex Co. Ill.  
 Meristella?  
 Centronella Billingsiana  
 Strophomena subplanus

Largest Centronella Billingsiana  
 length .63 breadth .50 convexity .34



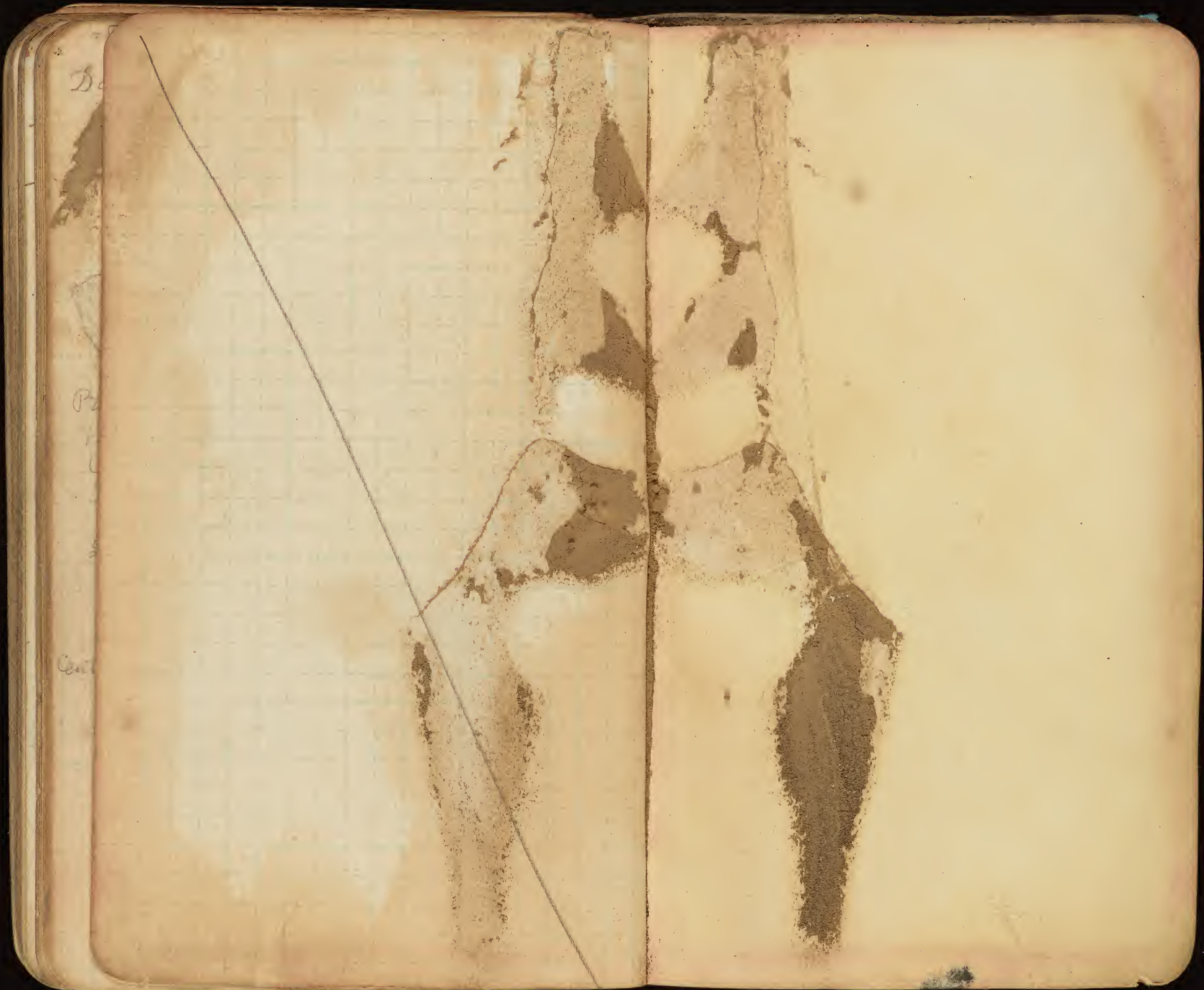
+ +  
 + +

~~Ewington 37 L  
 St. George 41 L  
 Porton 46 L  
 Olympia 49  
 Salt Creek 54~~

C. H. Graves  
 Olympia  
 Ill.

None

St. George Hotel  
 Winchester, Ill.



De

Pa

Cent

Prof. Porter. Kentucky May

