Samples,

1. Sample clay from upper Utica, 120 ft below contorted layer of false Garrard SS. (Fairmount), about 100 yds up from Limestone creek, 1½ mi. S of Maysville, Ky, John Brodt

2. Sample, Limestone, just above clay of sample I.

3. Sample natural weathered false Garrard SS. 10-15 ft below contorted layer, about 100 yds S of John Brodt's house above R R level.

4. Sample unweathered, from same horizon as 3.

5. Nearest approach to sandy Garrard like rock in upper Utica. About 10 ft of this section, a short distance south of forks of road, 1¾ mi. S. of Maysville, Ky.

6. Contorted layer at base of Utica, 1 mi. NE of Carlisle.

.A A.

Maysville - Summit.

Continuation of section along Limestone creek, S. of Maysville, Ky.

complete $\sim$ + 13 ft.

5½ ft rise - 8 rails.
5½ ft rise - 8 rails.
2 ft rise 4 rails road crossing,
Lynx abundant above level of R R. track. = Typical lynx beds;
5½ ft rise 9 rails.
5½ ft rise 8 rails.
5½ ft rise 8 rails.
5½ ft measured in this stretch.
Lynx is abundant and only has lynx appearance. The top of this section is top of lynx beds, = S of W rise. At beginning of longest and deepest cut, Mt Auburn = 280

18 ft soft clay measured. with clay limestone layers between some fossiliferous
2 ft limestone,
½ ft Dalmanella zone abundant in this thickbedded limestone,
4 inches limestone, at top is Lynx,
1 ft limestone, more lynx.
1 ft limestone, more lynx,
10 in clay. Top of limestone, followed by clay which was at base back (Strophomena) zone at base of the Dalmanella zone. (clay here came from much higher zone)

(20 rails, 13½ ft up to Dalmanella
16½ ft to same bed at RR level =)
(20 rails in 3 ft = 10 rails to 1½ ft.)

Maysville - Summit.

(2 ft 3 in. base of Dal. [illegible] to base of next heavy limestone)
= 1 ft 7 in of softer clay [illegible] [illegible], weathering back.
3½ ft above base of the next series of limestones is Leptaena rhomboidalis in [illegible]. Leptaena abundant at this level and for 1 ft below at least.

Rhynch. dentata

8 ft. farther up was loose Strophomena [illegible]. Did it fall down or was it thrown up. See no good reason for the latter.

4½ ft to base of Strophomena-[illegible] layer. [illegible] common for 1½ ft. Associated with Dalmanella jugosa. Warren = 41 ft 3 in.

Carlisle - Millersburg.

1) NEast of Carlisle, about 2 miles, at Tunnel cut, Lower part of Utica I think.

2) NEast of Carlisle 1 mi. contorted layers of limestone with 6 good Clitambonites at various localities.

3) West of Carlisle. W. of bridge 93. Bryozoans collected. believed to be Lower Utica.

4) 1¼ W. of Carlisle. Quarry of heavy limestone beds, little clay, contorted layers. One Clitambonites collected in RR ballast. This ballast contains bryozoans, very heavy ballast just yet broken [illegible], believed to have come from quarry.

5) 1½ mi W. of Carlisle. Top of Cathey's. clay of rubble limestone. 10 ft below top is Orthorhynchula. Immediately above Cathey's is massive limestone belonging to Clitambonites zone I think but no search made for Clitambonites.

Carlisle - Millersburg

6) Paris 14 mi. E. = mi. W of Carlisle. East of post in cut is Hebertella maria

7) West of post P14 in cut is Ortho-rhynchula, associated with Hebertella [illegible] and [illegible] and same as 10 ft below top of Cathays 1½ mi W of Carlisle.

8) Millers station about 13½ mi. E of Paris. Both east and west Orthorhynchula + H. maria are found.

9) 12¼ mi. E of Paris. Orthorhynchula H. maria and Rafinesquina very [illegible].

10) 12 mi. E of Paris. Orthorhynchula [illegible] for [illegible]. Cyclonema varicosum.

11) W of 12 mi E of Paris is RR cut with cross bedded limestone forming upper part of section. What is this?

12) Boyd 11½ mi. E of Paris W of station at [illegible] 6 in [illegible] found immediately below cross bedded limestone.

13) Cut E of P11, Orthorhynchula about 10 ft above base of cross-bedded limestone, [illegible] above.

Millersburg — Million

14) Cut W. of P11. Stromatocerium.

15) E end of cut ½ mi E of Millersburg. Fine [illegible], [illegible]. Associated with H. maria + Orthorhynchula. Stromatocerium found here also.

16) According to Time Table, Millersburg is 9 mi. E of Paris. The first exposures east of Millersburg are strata of Cathays age.

Soil from Cathays used for hemp culture ½ mi E of Millersburg.

Million - Valley View.

1.) 7. Tyne Garrard SS, 4 mi. W of Richmond, ¼ mi. E of first road crossing on R.R. (87)

2) 8. Massive Tyne Garrard SS, at first RR crossing = 87. W of Richmond 4 mi.

Utica apparently upper. Bassler

3) [illegible] locality E of Mr. Geo. Million's House = 85.

3-4. Million Tunnel. upper Utica

4) Between Tunnel + bridge 5 3 [illegible] exactly ½ mi. W of Million Tunnel = 1.1 mi W of Million. [illegible] Utica middle or upper. Bassler

Millian-Valley View

Utica + Catheys 5) Between bridge 53 W of Millian + V 30 miles, Versailles. Post is at Whitlock Station, Here also is bridge 52.

Catheys 6) Between bridge 52 and 51 only 1/10 mi West of Whitlock Sta.

7) West of bridge 57 coarse limestone is seen. Not much exposed. Farther west there is considerable of Garrard sandstone like thin bedded ... rock with ... fossils and ... layers of ... [illegible] common.

Utica + Catheys

Catheys 8) S.W. of Antioch church. This is first place where lower part of section looks a little like Catheys. But I can not find Orthorhynchula or the Hebertella zone.

9) Farther W, 1/4 mi is post V 29 M.

10) (Robert) Bob Kelley = 1/2 mi. W.

Catheys 11) Between Robert Kelley + bridge 45. Rafinesquina common. No Orthorhynchula.

Millian-Valley View

12) 1/2 mi. E of Hayden's station, as far W. as the station the coarse massive limestone shows up, at least 10 ft. not measured. This resembles Clitambonites limestone but no Clitambonites was found. About 2 mi. E of Valley View.

Heterotrypa Catheys 13) Between Hayden's Station and 1/2 mi. West the coarse limestone appears to be in creek bed and above this level on N side of creek but at higher level near Haydens station on S side of creek. For almost entire distance the Utica like rock shows up in large exposures above the creek level.

Catheys 14) Post V 27 M. A few specimens Hebertella sinuata + a single very poor interior of ... which may have been Orthorhynchula but horizon is same as that since Haydens Station + further east.

Catheys 15) Between Eb Miller's grist mill Jeff Dard's store Bridge 40 is just beyond. At R.R. level ... same Utica like section as seen since + before Hayden's station. Below bridge level is coarse limestone seen at Haydens.

Williams - Valley View

16) West of Jeff Davis store fossils cease abruptly & the rock just as abruptly resembles much decayed Barrard sandstone, at R R crossing farther west the limestone is so thick above level of R R I think that a fault must exist in here.

17) Lexington limestone exposure 1 mi. E of Valley View, just W of cross roads mentioned above.

Base of Cutleys.

✓ Colby - Winchester

1) West of Colby, under overhead bridge Strophostylus [illegible] is common, also apparently 1 specimen of Orthorhynchula & many Constellaria of Colby type, as well as C. florida. By Colby type I mean with not elevated monticules. The Hebertella here is coarse ribbed, not the H. maria. The large Hebertella type also appears to occur.

2) About ¼ mi. E is point FM 629 without exposure between.

3) About ½ mi. E of Colby is top of first rise and with first exposure.

4) About 5/8 mi. E is second exposure with Columnaria and Rafinesquina declivis. No Orthorhynchula identified with confidence although one appeared to occur, specimens of one Hebertella maria.

5) 628 FM. point. Constellaria Colby type + Rafinesquina declivis.

6) No exposures for 3/8 mi. E of 628 FM.

7) At 2 points within ⅛ mi. W of 627 FM are two very poor exposures.

8) One good exposure 1/10 mi. E of 627 FM. At top is coarse grained limestone, [illegible] Orthorhynchula found a bit at R.R. level so that it is rare or possibly was carried.

Colby - Winchester

9) I hardly know which opinion to hold about the Orthorhynchula.

10) About ½ mi E of point 627 FM is Nelson station.

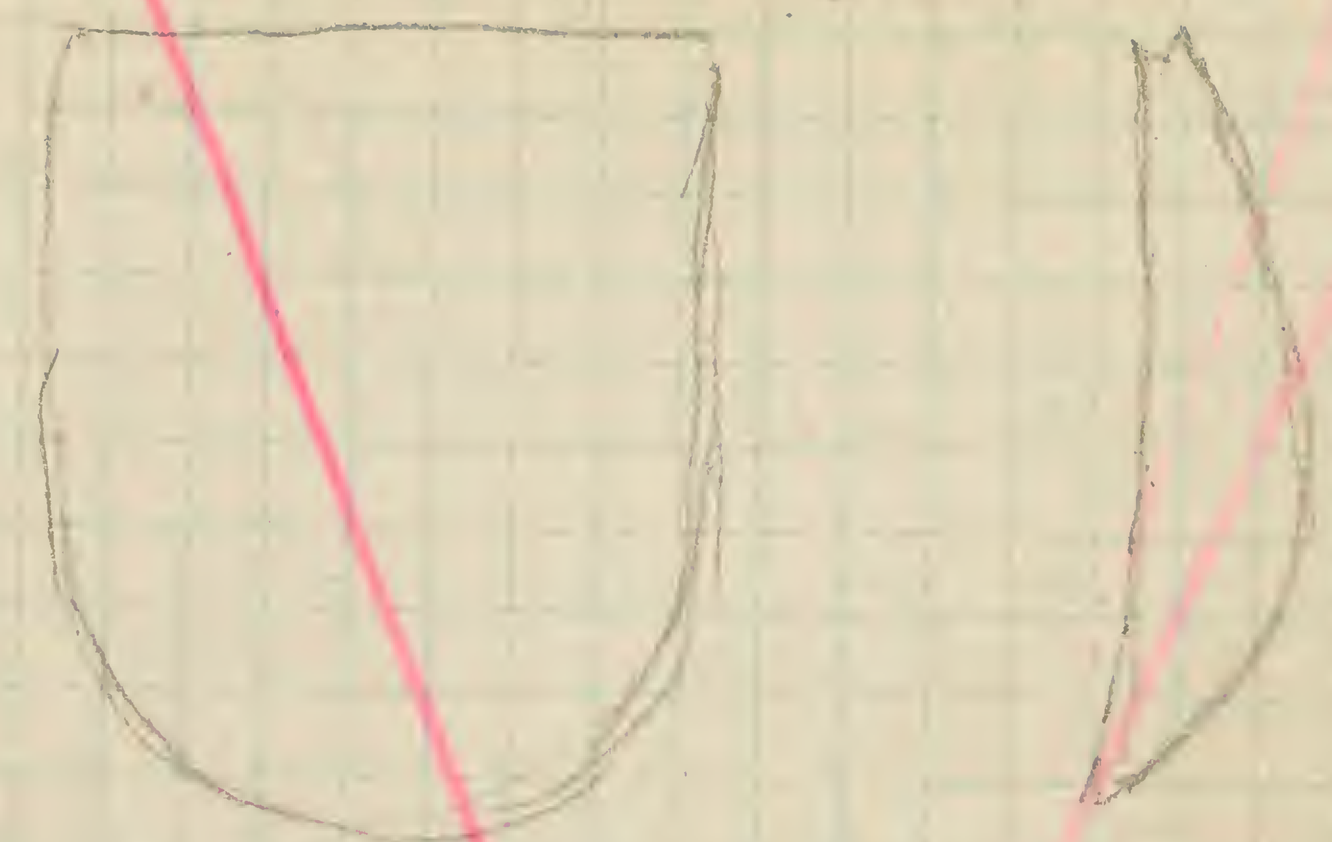
11) About ¼ mi farther east is fine exposure crossed by bridge a considerable distance above RR level. Rafinesquina declivis both forms of Constellaria. Not collected here because fossils are same as those seen farther west. Towards eastern end of exposure it is seen that the coarse limestone section is at least 15 ft thick, possibly 20 ft, but at different outcrops it weathers badly to a rough rubble.

12) A short distance E of east end of last exposure is point 626 FM.

13) About ½ mile E of point 626 FM and ½ mile W of Winchester is another exposure. This is believed to be the base of the Utica. Plectambonites + Dalmanella multisecta.

14) At W edge of town W of mile post 625 FM top of Catheys fm.

15) West of Winchester Catheys soil used for hemp land



Boyd

1) Trinucleus, Dalmanella multisecta in thin clayey limestone slab, loose at R.R. level; also a strophomenid interior of flat shell believed to a crushed Rafinesquina. Plectambonites occurs also, 81 ft from R.R. level to top of exposure where most bryozoans (in fact nearly all) were collected. Dalmanella common in loose limestone about 20 ft above R.R. Exact horizon at which it comes in is not known.

2) Leptaena gibbosa + Dal. emacerata begin a short distance above the coarse limestone in the steep cut 1/2 mi. N of station. 11 ft above top of coarse limestone believed to be Catheys. This part of section, etc

3) The total thickness of Catheys appears to be about 25 ft. Above this is soft clayey stuff with clay shale + a little thin limestone, total about 20 ft thick. In this section appears Dalmanella multisecta, Leptaena gibbosa. The Trinucleus and Rafinesquina declines appear to [illegible] here also. Above this is coarse grained limestone with Dalmanella multisecta + Plectambonites for 36 feet at least. This part of section does not resemble that of Cincinnati but that a bit east of Point Pleasant.

Boyd-Berry.

4) Bridge over river at Boyd, leading to Colemansville + Cynthiana. In the Catheys Cyclonema varicosum is rather common.

5) Catheys shows up well south of Boyd, where it has been extensively quarried.

6) 1 mi. S of Boyd, up road running beneath R.R., is strongly contorted limestone like that at Carlisle. Above this is fine grained thin bedded clay rock among clay and this rock contains bryozoans, Eastern forms as does the rock at Cincinnati. Section looks quite different from that at Boyd. Dalmanella farther up the hill side.
Some excellent lamellibranch slabs of contorted limestone series.
The contorted limestone belongs below the more regularly bedded limestone of Catheys age exposed N of Boyd.

7) Farther south, clay rock with Dalmanella + Plectambonites is at R.R. level for long distance. Trinucleus common. Hebertella resembling those of [illegible] from sections farther [illegible]

Boyd - Berry

8) As far as I can judge from observations made so far, the Catlep rises from the cut ¼ mi N of Boyd southward, and about ⅔ mi or 1 mi. south of Boyd exposes the strongly contorted beds which occur below the top of the Catlep about 20 feet. Farther south the Catlep dips southward and soon appears the Utica at RR level, for quite a distance, until a point less than 1 mile from Berry is reached. But about ½ mi N of Berry the Catlep rises again and the top is at least 20 feet above RR level.

9) At the Tunnel ½ mi S. of Berry the same hyperdeformed occurs that is seen at Cut ⅓ mi N of Berry, at the Tunnel there is a high exposure.

9) The contorted layer seen since ½ mile S of Boyd is here well seen about 7 ft above top of tunnel entrance.

11) Found Beyrichia, same as near upper part of hill believed to be Utica, east of rail road cut just ½ miles south of Boyd, but at Berry it occurs below Contorted layer 20 ft, and at ½ mi S of Boyd it occurs about 15 ft above contorted layer.

12) Southward the first exposure with vertical is ½ mi. N of Robinson, so that it is unnecessary to walk the tracks between Berry & Robinson.

13) Contorted layer ½ mi. S of Robinson ½.

14) Between Robinson and Poindexter apparently the following more massive limestones above the contorted layer show up.

15) Near Poindexter the bedded clays alternating with layers of limestone, same as near Berry, show up.

16) S of Poindexter ½ mile the contorted layer is seen about 10 feet above RR and the more massive limestone is at top of bluff, about 40 feet above RR. Observations taken from hammock, since Berry. Ky.

17) ½ mi N of Cynthiana, rock contains Dalmanella, rather large and flat but not fluted nor knotty. Has some appearance as rock but better considered of Catlep age.

18) At N edge of Cynthiana there is a fine exposure of Lexington quarried with Hebertella bridgei and Rhynchotrema Dalmanella

Mayerville - Summit.

Loc. A. Plat. lynx. Top of Mt Auburn.

Carlisle - Millersburg.

Loc. 10. Orthorhynchula. Platystrophia (12 mi E of Paris
Cyclonema. Hebertella maria, large
Rafinesquina small strongly curved
Rafinesquina large flat.
Base of bryozoan. Columnaria small.

Loc. 11. West of Port 12 mi E of Paris.
Orthorhynchula. Platystrophia
Cyclonema. Hebertella maria large.

Loc 5. — 1½ mi W of Carlisle. Top of Cathays,
Platystrophia large.
Cyclonema.
Rafinesquina small. Hebertella what species?

Loc 8-9. — 12½ mi. E of Paris.
Orthorhynchula
Lamellibranchs, Hebertella maria

Loc. 5A. 1½ mi. W of Carlisle. 10 ft below top of Cathays.
Orthorhynchula Platystrophia
Ambonychia. Hebertella maria small.
Lamellibranchs.

Loc. 13. West of Bond, in cross bedded limestone.
Orthorhynchula.

Loc. 3. W. of Carlisle. W. of bridge 93.

Loc 2. 1 mi. E of Carlisle. Clitambonites.
Plectambonites sericea. Utica

Loc. 1. 2 mi. E of Carlisle. Strophomena hallie.
Buccania? Middle or Upper Utica

Millin-Valley View.

Loc. 3. Strophs. Hallie breadth, Loc. 85.
Utica upper Appalachy. 1 mi. E of Millin.
Subnubites

Loc 3-4. — One mile west of Millin at the Tunnel. West side dump.
Utica - Upper Strophomena hallie. Dalmanella
perradiata. Subnubites.
Cyclonema very acute. Asaphus.
Zygospira. Hebertella.
Large globular bryozoan.
Large Eschara species.

Loc. 4. Between Millin tunnel + bridge 53
going West. Orthoceras.
Rafinesquina very small.
Utica in the Middle upper Dalmanella multisecta
Plectambonites sericea.
Very flat gastropod.
Hebertella. Zygospira.

Loc. 5. Between bridge 53 and 30 mi. E of
Versailles. Calliopa nigellaroides. Communis
Utica Cattleys Rafinesquinea. Castellaria florida.
Cyclonema.
Lamellibranchs. → Eridotrypa biarens

Loc. 6. Between Whitlock Station and ¼ mi
Cattleys West of Whitlock.
Small Platystrophia.
Eridotrypa biarens

Loc. 7. West of bridge 54.
Mixture of Cattleys and Utica Plectambonites
Rock resembling Garnard ss. Collected.
Calliopa communis
Eridotrypa biarens

Millin-Valley View.

Loc. 8. S W of Antioch church. West of
Cattleys Whitlock Station.
Rafinesquinia, elongate Cattleys form.
Platystrophia. Lamellibranchs.

Loc 11. Between Bob Kelley + bridge 45.
Cattleys Cyclonema. Large Rafinesquina.
Large Hebertella sinuata.
Large bryozoans.

Loc. 13. Haydens station to ½ mi. West.
Cattleys Large bryozoans. Heterotrypa

Loc. 14. Wide part 2 mi E of Versailles.
Cattleys' Lamellibranch.

Loc 17. One mile E of Valley View.
Bassey Cattleys. Should be Lexington.

Colby-Winchester

Loc. 1. Cut W of Colby.
Platystrophia small. Hebertella.

Loc. 3. Cut ½ mi. E of Colby.
Very elongate Rafinesquina.

Loc. 4. About 5/8 mi. E of Colby.
Columnaria alveolata.
Rafinesquina very elongate.
Platystrophia.
Orthorhynchula.

Loc. 5. At Milepost 628 FM.
Hebertella rather large.
Platystrophia.
Rafinesquina. Nine ordinary.

Loc. 7. ⅛ mi. West of milepost 627 FM.

Loc. 8. ⅛ mi. E of Milepost 627. FM.
Orthorhynchula Cyclonema
Rafinesquina elongate & nine ordinary.
Platystrophia rather large.
Strophomena. genus not certain.
Hebertella large.

Loc. 13. ½ mi. W. of Winchester.
Raphistoma?
Amphigenia? Lamellibranchs.
Plectambonites
Dalmanella multisecta.

Loc. 14. West of milepost 625 FM.
Very elongate Rafinesquina.

Boyd-Cynthiana

Loc. 1. Base of Utica N. of Boyd.
Dalmanella multisecta.
Leptaena gibbosa
Raphistoma? Zygospira.

Loc 1+ Base of Utica. Found either
N or S of Boyd. Record last
as to direction from Boyd.

Loc. 1. Rafinesquina small, in
Trinucleus layer N of Boyd.
Calymmene dec.

Loc. 3. Cyclonema. North of Boyd.
=(Cathys) Rafinesquina.
Dalmanella multisecta.
Raphistoma. (Bucania?)

Loc. 6. 1 mi. S. of Boyd. Ostracoda.
Dalmanella multisecta.

Loc. 8A - 1 mi. N. of Berry S of milepost.
Bucania.

Loc. 8B. - ½ mi. N. of Berry.

Loc. 9. ½ mi. S. of Berry. Ostracods.
Orthoceras?

Loc. 17. ½ mi. N. of Cynthiana.
Gomphoceras? Bucania?
Raphistoma? Zygospira.

1) West of Tyrone is Lexington with Hebertella borealis + Rhynchotrema,

2) Top of Lexington east of culvert W 65.5. Base of Catheys west of W 65.5 culvert. Well exposed Well bedded clay + clay rock intercalated as in Cincinnatian strata. Near base is contorted layer, often looking like huge separate boulders with the bedding above and below undisturbed. Rafinesquina only fossil seen. No bryozoans found. Fossils therefore very scarce but no long search was made. Large distillery at W. end of cut.

3) W of W 65 post, the Lexington-Catheys contact is well shown. Top of Lexington with Hebertella borealis + small Platystrophia. The Catheys is well bedded clay + clay rock, nearly unfossiliferous except at very base. Post reads 1 mile from station = Tyrone.

4) About 25 feet above base of Catheys the clay rock is replaced by a limestone section, some of it crossbedded, with no clay between + therefore resembling the Lexington a little. Lower part strongly contorted in places. Well exposed E of bridge 64.4.

5) In the long railroad cut W of bridge 64.4 this Catheys limestone is well exposed and contains a few bryozoans, very scarce. Post at West end of cut reads 1 mi. from station = Lawrenceburg.

6) In the long cut East of yard limits the Catheys limestone continues to be well exposed. It resembles the Lexington but does not show the Lexington fossils, which are so common lower down. No exposure between this and Lawrenceburg.

7) W of Lawrenceburg is post 63 W.

8) At west end of Lawrenceburg, where the pike to Alton crosses the RR, Trinucleus, Plectambonites, and Utica bryozoans occur. This is the first Utica exposure seen. Dalmanella multisecta.

9) West of a post 1 mi. W of Lawrenceburg the top of the Catheys limestone is exposed again. This is down grade here.

10) The same limestone occurs east of bridge 61.7 W. = Catheys

11) E of bridge 61.0 = 2 mi. W. of Lawrenceburg. = Catheys? Some of the layers are contorted.

12) At greatest point of elevation 1/4 mile West of bridge 61 W the rock contains Dalmanella & Plectambonites, and is either near base of Utica or top of Cathays. Did not have time to examine. Exposure poor.

13) West of point 1 mile east of Alton station I collected bryozoans.
Cathays

14) Just east of Alton station I secured bryozoans. Plectambonites common in beds and the rock looks more like Utica but no Dalmanella seen, therefore at least scarce. Lower Utica.

15) A fine cut west of station not visited.

May 9. Bassler.
1. 2 Carlisle Millersburg.
3. Boyd. Berry. Cynthiana.
4. Colby.
5. 6. 7. Millvin. Ky.
8. Lawrenceburg.
9. 10. Harrodsburg.

2

South east of Harrodsburg about 1 1/2 miles is the beginning of a long R. R. cut made for the new line to Danville. Just before reaching it there is exposed a very fine grained limestone with vertical worm borings, resembling the Birdseye. This is probably the Upper Birdseye of Linney. Above this, forming the greater part of the cut, is limestone which I consider the Cathays. I did not examine it carefully. Near the top I collected what may be a young Orthis plicatella. It resembled a Rhynchotrema but the beak of the ventral valve was erect and the foramen was well exposed. Above the Cathays, forming the top of the cut was the Utica, estimated at 10 feet thick. It consisted of thin clay rock interbedded with clay. It contained Dalmanella more like emacerata than multisecta, and Triarthrus. Also ostracods. The bryozoans look like Utica forms. The rock is tilted southeast or south. The Cathays may be 40 feet thick. Apparently less. A short distance east of the cut limestone, rather coarse, is exposed. Is this Utica? Similar trouble in identification occurred west of Lawrenceburg.

2) About 1 mile east of the cut last mentioned, and about 2½ miles from Harrodsburg there is a second cut. West of this cut the fine grained rock with vertical worm borings is seen again. = Upper Birdseye of Lexington? Similar rock is seen at the cut.

3) About ½ mile east from the last cut the exposure shows rock similar to the Utica lithologically and the fossils appear similar to those the main cut 1½ mi E of Harrodsburg, but I found no Trinucleus or Dalmanella but I collected some fossils. Immediately above is coarse-grained limestone. The absence of Plectambonites at all of these cuts is noteworthy.

4) Farther east the rock exposed resembles that below the Cathey again. Not carefully examined.

Mason, Ky. Cut south of station
20 ft clayey section with thin limestone layers, but top in [illegible] more coarse grained, in several layers, roughly separated by clay. Dalmanella [illegible] at top. Collected clay. Platystrophia [illegible]

9½ ft clay both soft and shaly [illegible], [illegible]. Then coarse limestone 2½ ft thick. In the limestone occur Dalmanella [illegible] Constellaria florida
Stephanoceras [illegible]

At Plectorthis exposure 1 mile N of Mason Ky.

Plectorthis about 4 ft below heavy coarse grained l. with Rh. [illegible] lenses common.

Coarse grained l. section of 18 ft with rather massive beds, [illegible] by thin inner bedded layers.

Section from RR at W[illegible]town down to [illegible]
27½ ft [illegible]
9 ft rather coarse l. exposed.
8 ft to lowest l. with Rh. [illegible]
20 ft clay shale & clay rock [illegible] = [illegible]
20 ft [illegible] limestone [illegible]. Some of clay rock rather soft, weathering to soft clay.

Owingsville

Clinton

2° Belfast

24½° Greenish white clay } 4 1½° Upper Richmond

15° Occasional sandy l.

27½° sandy limest in sandy cl.

3½ ft { Rhynchotrema capax
Streptelasma.
Dinorthis subquadrata not rare } 32½° Middle Richmond

1½° Sandy l. Plectambonites + Leptaena

13° Chiefly clay

13 { Ctenodonta, Byssonychia
Zoophycus burdeni. Strophomena planumbona. Common a short distance above and below this

Hebertella 33° { 11° Chiefly Hebertella
Tetradium bed
8° Rubble clay rock, Hebertella at base. } 71½°
2½° Hebertella & rubble
½° Hebertella blue l. + Pr. hospitalis } Hospita
11° Hebertella + Pr. hospitalis clay rubble

25½ { 10° Clay rubble, Fossils scarce.
½° Heavy dense blue limestone.
5° Sandy clay.
10° Not exposed.

Creek exposure. Formerly obtained Leptaena rhomboidalis down this creek.

Williamstown. 948 – 44
Base of Strophomena mayvillensis 904

Falmouth 530.
Top of Cathaya
Top of Utica

Wyoming

Residual Clinton chert

36½°	10° whitish clay
	11° Brownish sandy clay
	16½° Sandy cl. with few sandy l. layers
33° Middle	33° Sandy clayey limestones in s. cl.

Fossils few in upper part of M. Richm. Between 10 – 13 ft above base Plectambonites + Bythopora gracilis ~~aae~~ delicatula common. Stroph. vetusta rare. About 3° above base are Stroph. vetusta, Rhynchotrema capax.

Base of Middle Richmond and top of Lower Richmond.
Dinorthis subquadrata from within 2 feet of this horizon?
Hebertella insculpta, good. H. sinuata.
Streptelasma. Pentarea vetusta.
Calapoecia. Rhynchotrema capax.
Stroph. planumbona.
Rafinesquina. Platystrophia.

7½° Sandy clay limestones with Hebertella insculpta rather common at top, and the rest of the fossils mentioned above in the remainder of the section below.

35° of exposures containing good limestone layers. Stroph. planumbona occurs 15° down = 23° below top of H. insculpta.
18° Below top of H. insculpta was found single Dalmanella jugosa.
26½° Below H. insculpta = Stroph. neglecta.
35° below H. insculpta = Catazyga headi.

Wyoming.

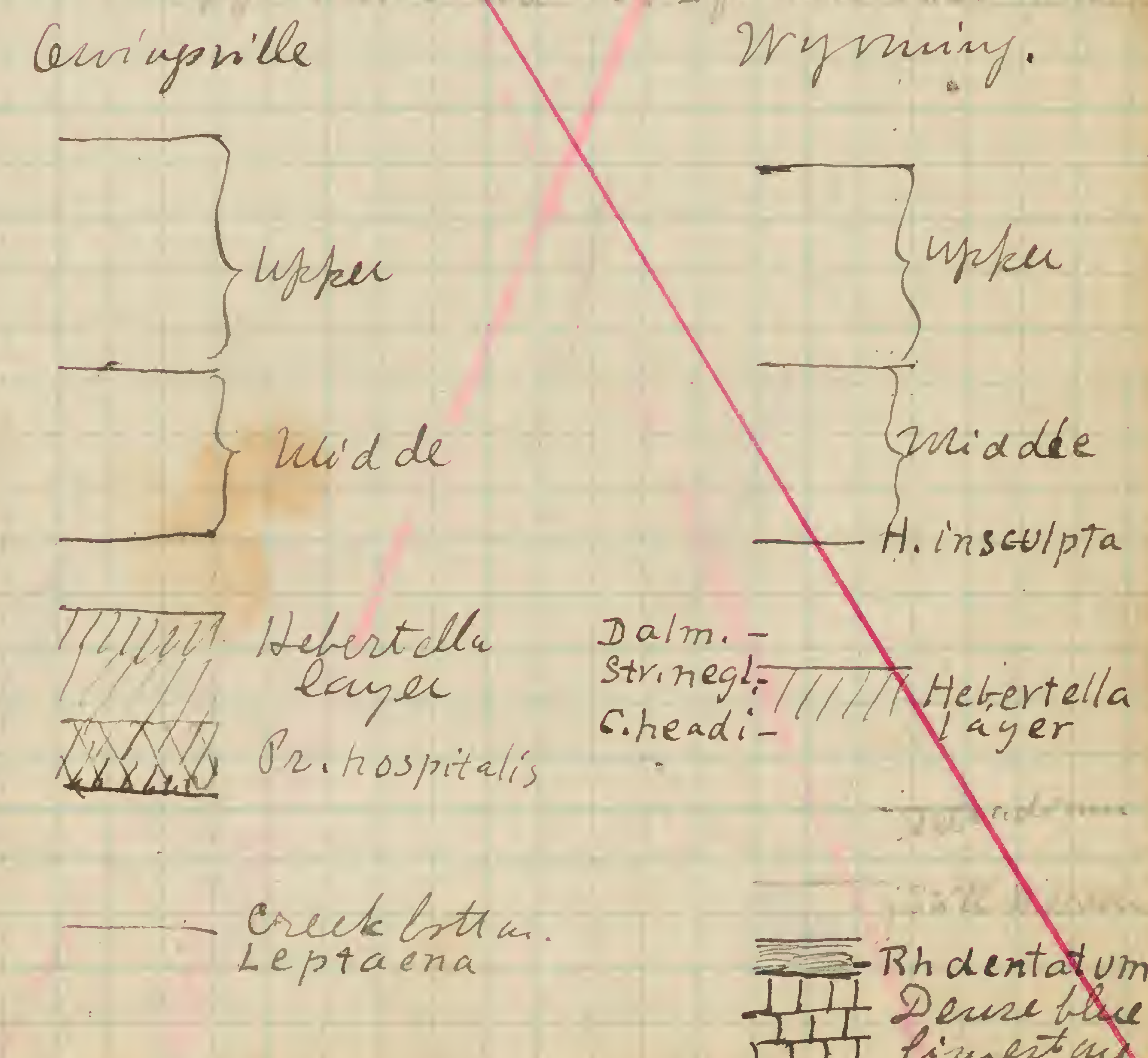
From 23 feet below H. insculpta Hebertella sinuata is chief fossil.

C. 76 – 81° Below H. insculpta – bryozoan layer with 5 Rhynchotrema dentatum ~~just above~~ and Leptaena rhomboidalis just above base of bryozoan layer. Immediately below is

B 18° Dense blue limestone.
Lynx limestones.

N3 = C. Batostomea varians. Hebertella [illegible] Monticulipora [illegible] [illegible] Strophomena [illegible].

For 16½ ft above B the same fossils (bryozoans) appear to occur = 69½ ft below H. insculpta.



Sunset - Day's Mill.

Mt. Sterling 930
Lexington 1010
[illegible] 810
[illegible] 760 barometer
[illegible] 741 correct. changed to the
[illegible]ville 1010

$$\begin{array}{r}1010\\740\\\hline 270\end{array}$$

[illegible]ville 1022 On [illegible]
2 ft layer 920 = Part [illegible] weathered [illegible] ?

Bridge across 770 Prickly Ash Creek. Layer beds for a [illegible] distance above that.

6½ ft to Cat[illegible] bed = [illegible]
21 ft to [illegible]
10 ft to heavy Tetradium bed. [illegible]
4 ft to large oak tree.
17½ ft about B to top of bed [illegible] [illegible]

57 ft [illegible]
81
24 ft [illegible] Hebertella insculpta

lit.
lit.
lit.
lit.
C
Mi.

Wyoming, Top part of section.
Dianthus [illegible] 2 ft above [illegible]

Hebertella insculpta large at top
7½ ft sandy limestone layer, H. sinuata
[illegible]
[illegible]
[illegible]
[illegible]

25 ft of exposures with [illegible] limestone layers
18 ft below H. insculpta is Dalm. [illegible]
23½ ft " " " is Str. planumbona
24 ½ " " " Cat[illegible]
24 ft " " " [illegible]
From here on down H. sinuata is very abundant & chief [illegible]
26½ ft below H. insculpta is Str. neglecta
30½ ft " " " is [illegible]
32¾ ft " " " base of section.
20 ft poor exposures clay [illegible] & then [illegible]
Tetradium bed [illegible] varians.
10 ft. clay and
large oak tree
4 ft poor interval clay rock.
16½ ft. Up to this level [illegible] are [illegible] and [illegible] same [illegible] as below [illegible]
Heavy [illegible] bed

H[illegible] 586 [illegible] over [illegible]

SW of Sunset

Top of old tree stump
2 ft below level of stump is shell
[illegible] with Calyptraea
[illegible]
15 ft interval
poorly exposed.

1 ft limestone.
5½ ft interval poorly exposed,
Top of [illegible] down [illegible]
[illegible] with the [illegible] layer,

SW of Sunset.

Hebertella insculpta
45 ft interval
Hebertella very abundant.
5½ ft with Rhynchotrema [illegible]
abundant, with [illegible]
Plaesiomys [illegible]
2 ft interval
[illegible]
[illegible] common, [illegible]
[illegible] Hebertella [illegible] common [illegible]
10 ft [illegible] rather common.
[illegible] not common
Callopora [illegible]
[illegible] of the road.
X Top of old tree stump [illegible]

SW of Sunset

Hebertella insculpta [illegible]
12½ ft [illegible]
[illegible] in thin limestone
and clay [illegible] fossils.

13½ ft [illegible]

[illegible]

4 ft rubble.

1 ft Limestone [illegible] Plaesiomys [illegible]

4 ft limestone & clay.
[illegible]
3 ft Limestone & clay
[illegible]?
2 ft [illegible] common.

8½ ft chiefly limestone and clay. [illegible]
[illegible] common. [illegible]
[illegible] 45 ft [illegible]
5½ ft chiefly clay rubble [illegible]
[illegible]
[illegible]
[illegible]
11 ft [illegible] rubble clay & few Hebertella [illegible]
[illegible]
upper half [illegible]
2 ft down to top of old large tree stump
at angle of road.

E of Days Mill.

SW of Pleasant Valley.
NE of crossing of Licking river.

60 ft down to river.

Days Mill.

100 ft { H. inzaneptæa. Abnt 5-8 ft. to gate at pike. A little above
Rubbly limestone with Pl. lynx.

69 ft Int Oval.

{ Bellerne
11 ft { rubble clay limest. Ampl. robusta at base
16½ dense blue clay rock
13 ft. dense blue clay limestones.
Fairmount. M. undata. Pl. lynx abundant
Heterospongia. Callispa dalei.
11 ft badly weathered l.
M. undata comes in here spiny sp.
7½ ft Some rubbly limestone. Pl. lynx common
5 ft. limestones. Heterospongia
Platy. lynx begins here spiny sp.
25 ft. chiefly l. in sandy clay.
Strph. maysvillensis.
18 ft sandy l. with Str. maysvillensis at different intervals.

76 ft Fairmount

SW of Sunset. Nickles.

Hebertella insculpta & Leptæna rhomboidalis.
12½ ft Rhyn. capax. Leptæna rhomboidalis
Strph. planumbona & elongata
thin l. in clay. fossils numerous.

10½ ft rubble. Fossils rather common.
Dalmanella jugosa
4 ft rubble.
1 ft. limest. with D. al. jugosa &
Strph. planumbona.

SW of Sunset Continued.

4 ft limest & clay.
Dalmanella jugosa
3 ft limest & clay
Strph. Cincinnatensis & elongata.
2 ft. At base is limest Streptelasma rusticum
8½ ft Chiefly l. & clay Heb. sinuata common
Syph. tropidophora & bowdeni.

5½ ft Praespira hospitalis becomes abundant
Associated with H. sinuata, L. bowdeni.
2 ft. Pseudospira abundant. Praespira hospitalis coming in. Callispira subrotunda.
Heterospongia Heb. sinuata here comes in abundant.
10 ft above tree stump. Byth. meeki common.
Bat. variatus not common.
Callispira subrotunda not common.
2 ft below top of large tree stump. Callispira subrotunda (Nickles) Lower Richmond.
5½ ft chiefly clay rock & some limestone with few H. sinuata & L. bowdeni. = rubble & rock
6 ft chiefly rough limestone weathering rubbly.
9 ft poorly exposed. Several limestone layers in clay.
2 ft dense d. l. like that at Cincinnati.
Three specimens of lynx in next lower bed at top.
11 ft dense clay l. dark blue. Fossils few.
In lower beds Syphospira is rather common.
14 ft Lynx beds Lynx is common.
Rhyn. dentatum here, probably dropped
11 ft dense l. near unfossiliferous, base not seen exposed on W side of valley

C + O [illegible]
775 [illegible]
765 [illegible]
860 [illegible]
915 [illegible] 895
858 [illegible]
[illegible] [illegible]
757 [illegible]
[illegible] [illegible]
808 [illegible]
811 [illegible]
[illegible] [illegible]
[illegible] [illegible]
825 [illegible]
[illegible] [illegible]
767 [illegible] 708 774
772 Joyce
785 [illegible]
772 [illegible] Park 45 Park
728 [illegible]
640 [illegible] 552
755 Tucker [illegible] 730 [illegible]
[illegible]
[illegible]
700 Jeffersontown 636 [illegible]
Bryan
Dear
605 Buechel or Stones 496 505 [illegible]
670 Bridge over Fern Creek
785 Fern Creek, 4 mi. S of [illegible]
787 Charles Riley's [illegible]
765 Fairmount, 6+ miles S of [illegible]
742 [illegible] 2/3 mi S of [illegible]
Falls
753 [illegible]

760 [illegible] = 1¼ mi S of Fairmount
(Hays Spring – [illegible] mi [illegible]
(Floyds Creek = 7/8 mi S of Hays Spring
740 [illegible] S of Hays Spring.
672 – [illegible]
675 top of [illegible] Madison
664 base of [illegible] Madison with Hemotrypa
[illegible]
and [illegible]
640 Floyds Creek bridge = [illegible]
640 [illegible] 478 USGS [illegible]
{[illegible] = 15 ft [illegible]
{[illegible]
{[illegible]

Hemotrypa [illegible]
below [illegible]
[illegible]

---

862 Versailles
770 Lawrenceburg
695 Shelbyville
422 Taylorsville
492 Christiansburg
899 Bagdad
693 [illegible]
560 [illegible]

[illegible]
[illegible] 500 [illegible]
[illegible]

2 ft [illegible]
5½ ft [illegible]
{ [illegible] at 10 ft
5½ ft [illegible]
5½ ft { [illegible]
[illegible]
{ [illegible]
[illegible] 20 ft
7½ ft [illegible]
[illegible]
[illegible]
[illegible]
[illegible] 10 ft
[illegible] 12 in [illegible]
[illegible] 2 in [illegible]
[illegible]
[illegible]
9½ ft [illegible]
[illegible]
5½ ft [illegible]
[illegible] at 8 ft
8 ft [illegible]
[illegible]
[illegible]
8 ft [illegible]
2 ft [illegible]
1 ft [illegible]
[illegible]

5½ ft [illegible]

 Mt Washington.

Mt Washington

3 ft. Same fossiliferous layer as at N. side of Floyds creek at base

F. C. Porter at head of small falls. Lepidocyclus [illegible] Top of [illegible] specimen occurred 5½ ft below top of fall where fence crosses the creek. [illegible] specimens occur just west of home of J. D. Stansbury.

S side of Floyd's creek,

Clinton.

34 ft Madison beds.

XV 5½ ft. Lower Madison bryozoans collected,

XIII 5½ ft Below base of Madison Stroph. retrorsa

XII 5½ ft Upper part of 5 ft [illegible], sandy clay, fossiliferous section

XI 5½ ft. Middle part of very fossiliferous section. Str. retrorsa very abundant at base. indurated clay rock

X IX 7½ ft Str. retrorsa 1 ft above base. indurated clay rock. Rhynchotrema quadricostata common at top of [illegible] also at base. Dinorthis subquadrata 1 ft above base. Columnaria alveolata. Str. planumbona at base

VIII 5½ ft Clayey, with lowest Str. planumbona at top. Base of good exhibition of section.

5½ ft. rubble limestone poorly exposed.

VII 8 ft. Streptelasma very broad at top. + Beatricea

VI at top of section. Prob. Col. alveolata at top. Heterospongia + Streptelasma at base.

V 6 ft Heterospongia and Streptelasma in upper half. Rubble limestone. Zyg. kentuckiensis at base

2 ft 6 in solid clay limestone.

IV 2 ft 3 in Rubble clay + Zyg. kentuckiensis. Bryozoans collected

15 ft Chiefly massive clay limestone. Plectambonites [illegible] Hemiphragma [illegible] species + H. [illegible] at base

III 25 ft chiefly massive clayey limestone with [illegible] rather common towards top.

12°–20° II 15 ft more clayey beds. [illegible] 478? Bythopora delicatula. Batostoma varians at top. (2 ft below top is Tetradium)

I 5 ft. Platystrophia [illegible] var. section.

N of Greenwell Ford section.

{ partly rubbly 72 ft above Warren
7½ ft { Tetradium in upper ½ ft. then clay rock.
5 ft blue clay rock, partly rubbly.
7 ft 3 in. blue clay rock upper part spalling,
5½ ft blue clay rock. massive
7½ ft to top of waterfalls. Indurated clay rock.
4 ft 4 in. blue clay indurated rock.
1 ft Hard, blue clay rock.
20 in. blue clay indurated rock. Brassfora
6½ ft { blue clay rock massive and spalling
{ in upper 2 ft.

5½ ft { blue clay rock indurated, upper 15 inches still harder.
Columnaria alveolata (spalling) at top.
others [illegible] about 2 ft from base.
others about 1½ ft from base

5½ ft { Columnaria at top = in upper one foot.
Brassfora and lamellibranches fairly
blue indurated clay rock. [illegible] and

5½ ft indurated blue clay rock. Clay b. Columnaria

3 ft 6 in { shale + blue few fossils, is softer
in upper one foot which is more like
in blue clay rubble with fossils common except
6 in. several l. layers.
4 ft with fossils common blue cl. l. rubble
7 in. limestone solid blue, few fossils
3½ ft. softer blue cl. l. rubble.
12 in. more indurated blue cl. l. Fossils plenty,
15 in. blue clay l. rubble fossils fairly plenty.
2 in. coarse l. with Ammonia? + [illegible]
2 ft blue clay rubble l. with Leptaena at base.

N of Greenwell continued.

Clinton,
25 Madison massive beds.
{ upper part not studied
{ middle = Liberty? Middle
{ bryozoans near base, and
21 ft { sandy clayey section. Some
{ Saluda, upper brown 1 ft below top
11 ft { clay blue indurated rubble with
at top
{ typical [illegible] Cornulites
2 ft. { blue clay rock. Good [illegible]
1 ft. blue clay rock. Columnaria [illegible] and
alveolata common.

Section N of High Grove
Bardstown.
14 mi. post about 1/8 mi S of 14 mi. [illegible] house on E side beyond church
at home of Will Lloyd first [illegible] of road. [illegible] Madison or Law[illegible]
66 ft to lowest Columnaria layer on [illegible] Nickles. = Richmond? [illegible],
7 1/2 ft [illegible] bryozoans collected [illegible] exposures [illegible] along road.
30 ft above cross-bedded [illegible]
(crossbedded [illegible] and below)
(Leptaena [illegible] between 0–5 1/2 ft above the)
[illegible] but [illegible] occur.
12 1/2 ft sandy coarse limestone [illegible] crossbedded
18 1/2 ft [illegible] Mt Auburn.
2 ft heavy coarse grained limestone bed, Corryville.
Hebertella [illegible] var. grandis.
[illegible] Calhouni [illegible].

Rhynchotrema dentatum found by Nickles among Mt Auburn material but this probably came from the Leptaena horizon.

Along road S of Smithville bridge N of [illegible] Christ. [illegible] 100 [illegible] Leptaena horizon.
[illegible]
(585) 65 ft [illegible]
At Smithville [illegible]
Mt Auburn.
2 ft [illegible] at [illegible]
42 ft from [illegible]
18 ft from [illegible] 440 [illegible]
[illegible]

632, Columnaria bed at 1st exposure S of Smithville bridge at J. W. Crisp's house,
x (568) Base of crossbedded layer at first exposure N of Hill Grove. Apparently a southward dip.
635 Columnaria bed at S. N. Abel, a [illegible]
W. L. [illegible] lives where [illegible] used to live.

698 Columnaria bed, with Calapoecia [illegible] + Columnaria [illegible] and Tetradium about 1 ft farther up about 500 feet north of cemetery ~~about~~ 9 miles [illegible] N of Bardstown.
685 at top of [illegible] of house S of 8 miles N of Bardstown.
(At Grinnell's ford the lower Columnaria alveolata bed is 47 feet below the upper Columnaria bed with Tetradium.)
(Here, 9 miles from town, the upper bed is about 50 ft above the lower bed near J. W. Crisp's house, about 14 miles from Bardstown, and at S N Abel's house about 11 miles from Bardstown.)
N of house about 600 ft, near 8 miles from Bardstown [illegible] [illegible] 11 ft [illegible] level of [illegible]
674 = 674 ft [illegible]
645 ft. Top of [illegible] section
Next page.

645. Top of very fossiliferous section. Lingula common. These are probably the top of Warren's [illegible] Leptaena very common, but Lingula common also. At least 11 ft of fossiliferous beds exposed. 7 1/4 mi N of Bardstown & 1/4 mi North of bridge across Cox's creek.

630. Bridge across Cox's creek.
730. Cox's Creek P.O. floor of building
760 Hill 5 mi from Bardstown exactly.

772 Where road comes in from west. [illegible] Calymene [illegible] In white clayey soil [illegible] Strophomena [illegible] common. Small [illegible]
790 after [illegible] & [illegible]. About 4 5/8 mi S of Bardstown

805 About 3 1/2 mi N of Bardstown.

810 In front of house 3 mi N of Bardstown
810. At entrance of Fair Grounds 2 mi N of Bardstown

790 Top of [illegible] [illegible] of gully west of road

815 In front of house [illegible] [illegible] [illegible]

800 In front of house 1 mile and a little over north of Bardstown
730 R R depot at Bardstown.

Fossil locality at bridge = 4 mi E of Bardstown
Needmore = 5 mi. E of Bardstown

[illegible] & [illegible] about 2 miles east of [illegible], where road turns off north & crosses the river. [illegible] good [illegible]. [illegible] [illegible] and [illegible] new variety [illegible] not much above river level = 20 feet?

Upper [illegible] [illegible] 3 mi [illegible] E [illegible] town. 35 ft below crest of hill where [illegible] further east.

5280
.144
21120
21120
5280
760,320

Loc. 7. Lebanon, Ky

Devonian apparently 10½ ft [illegible] Bryozoan [illegible] Batostoma [illegible] probably Batostoma [illegible] Columnaria [illegible] about 5 ft from top of Devonian. The [illegible] [illegible] further up.

35 ft {from Devl. down to top of bryozoan layer
Columnaria layer not seen here

11 ft down from top of bryozoan layer to where top of [illegible] [illegible]

15 ft [illegible] [illegible] top of [illegible] [illegible] to where the top bryozoan of the section 2 miles SE of [illegible] [illegible] occurs

8 ft down from top bryozoan to creek level. = Batostoma?

S = 725 bryozoan [illegible] between Loc 2 + 3 SE of Lebanon, Ky

Loc 3. About 3 mi SE of Lebanon [illegible] at Geo Raley's. Strophodonta certain, Pinnell, Lindstroemia Canadensis

T Richard Murrell on Casey Creek about 1½ mi above the bridge. Stroph. [illegible] in front of house and thence south and up [illegible] [illegible] [illegible] yards, associated with [illegible] = Upper Fairmount? [illegible] [illegible] [illegible] stream ½ mi [illegible] top of [illegible] Hope, about 15 ft [illegible] [illegible] Stroph.

at Level of Fairmount.

Corryville — neglecta (dichotoma?) / jamesi.

Bellevue

Fairmount — plicatella, triplicatella; rectostriata, ella

Mt Hope — fissicosta

E.O.U. May 15. '05.

Ky

Cincinnatian — Eden { Richmond / Covington / Eden { Garrard ss / Eden shales }

Mohawkian — Nashville or Trenton { Winchester (restricted) / Flanagan / Lexington { Phosphatic shales / Curdsville } }; Stones River { Tyrone / Oregon / Nelson }

Ohio.

Cincinnatian

Richmond { Madison / Whitewater / Versailles { Liberty / Waynesville } / Fernvaille [Warren] } unconformity.

Covington { McMillan { Mt Auburn / Corryville / Bellevue } slight unconformity / Newport { Fairmount / Mt Hope } slight unconformity / Eden { McMicken / Southgate / Economy } }

Utica — Utica — Fulton

Mohawkian { Trenton or Nashville — Pt Pleasant / Bromley shale }

Wit.

Lit.

Lit.

Ut

Ut

C

Mi.

Maysville

Mt Auburn
Callopora sumnerensis
Coelocleme oweni
Hemiphragma pulchra.

Corryville lower part of section SE of M 3 miles
Lower part below the more massive limestone section in the more clay partly beds with
Pl lynx
Ampleximagna elongata
Callopora nicklesi Mss.
Bythopora gracilis.

Bellevue top
In the roadside just north east of home of John Reetz on property of Bill Griffith, in first cut N of cattle guard

Bill Ward

Cincinnati — Ludlow.
Pl. d-amboniti scale!
Many layer base 10 ft below top of
2 ft. heavy l. at top of Trenton
11 feet below = Ple d amboniti
10½ feet below = Plect amboni to 13/16" wide.
13½ ft below = Pl d amboniti.

Trinucleus common!
15 ft down Trinucleus.

Fig 4 B and C are represented by Trenton at Ludlow, I specif examples then also. This form ~~is here too nearly~~ appears to be represented by certain small specimens but I add, seem larger both the character behind him is larger and been like 4 B and 7/8 in wide

Acidaspis ceralepta. Ohio Pal. Vol. 1. pl. XIV. fig. 8 = Ceraurus according to Miller (= Ceraurus pleurexanthemus according to him)

Parcedus Darwini.

Fragments and ppr specimens are rare in hills back of Cincinnati. about 400 feet up. = ~~Bellevue or base of Corryville~~ Corryville, rather near top. Good specimens = 2 mi SE of Maysville, in a layer of marl 2 feet thick, between harder stratified rocks. = base of Bellevue. = Fig. 1 A B of plate 1 of mine.

Parcedus claudei. Miller. Diameter ½ to ¾ in. Diameter of depressions = about 1/30 inch.

Parcedus is placed by Hindle under sponges.

Plate I.

Parcedus darwini. (Sponge perhaps)
~~Types~~ From two foot clay layer at base Corryville, about two miles south of Maysville, Ky in railroad cut. Depressed globular bodies, probably originally nearly spherical, with depressions, chiefly hexagonal, originally filled by plates which were a little convex on the outer surface. Fragments and ppr specimens are rare in hills back of Cincinnati, at 400 ft (= Corryville?) At mouth top of section at 425 ft.

Parcedus claudei. Miller. ½ to ¾" diam of specimens, 1/30 in = diameter of depressions. Found associated with P. darwini at Maysville (= Base of Bellevue) but not at Cincinnati.

Dalmanella cycla is less robust shell than multisecta, valves very thin, hence the ventral valve appears nearly flat in most specimens except near the beak and along the slight medial ridge, due to pressure? flattening. Radiating striae said to be prominent and rather coarse, less fine than those of multisecta, but this is not true of the types in the James collection.

Plat cyclia James differs from larger specimens of crassa, it is more gibbous, has a more profound and lengthy sinus, greater length of hinge line and finer and more numerous costae.

Plat. crassa ~~Meek~~ James, said by James to occur 300-400 ft up = Fairmount to Corryville.
Differs from laticosta in having generally but 1 plication in sinus and 2 on fold. Lateral plications 5 or 6. Lateral slopes always abrupt. And much less compressed from ~~valve~~ valve to valve than in laticosta.

Acidaspis crosotus. back of Plainville. Columbia ave. 160 ft up.

Acidaspis ceralepta Miller describes Fig 9 of pl. 14 of Ohio Pal. and not fig 8.

Acidaspis cincinnatiensis. figs 3, 4, 6. & 7. of plate 14. Ohio are all here included. Meek.
Miller describes specimen from Dr. H. H. Hill. in Eden Park, less than 200 feet above low water.
Fig 6 & 7 Come from 15-20 feet above low water from Jameses Collection
This may be ~~marrvillensis~~.

Trematis dyeri. Dorsal valve Shell marked by 2 or more distinctly elevated regular concentric lamellae giving the valve a rough appearance. No punctations have been observed in this valve. Ventral valve puncta.

Lingula vanhorni. Miller. Elongate ovate. Length 3/4 in.

Crania dyeri. Miller. Diam. .20 1/5 inch convexity .07 inch. Shell small, circular. dorsal valve. prominent, conical. apex central. Surface with 6 or 7 fine, sharply elevated concentric ridges or lamellae lines of growth.

Heliophyllum stelliforme.
Spongiae.
Brachiospongia tuberculata & laevis.

Heterospongia aspera	6-7	
knotti	6-7	5-7 = Rich.
subramosa	4-7.	3-5 = Lor.

Dystactospongia insolens.
Coelenterata.
Stromatoporidea.
Beatricea nodulosa.
undulata.
Labechia ohioensis. Nicholson. 5-7.
Stromatocerium pustulosum ~~?~~ 7

Dal. emacerata. Length + width as 5 to 7, hinge line nearly equalling the width of shell. Dorsal valve flat with a slight depression down the centre. Ventral valve depressed convex, an undefined elevation extending from umbo towards the front, + sometimes quite to the margin of the shell. ~~Shell~~ thin.

Rhynchotrema dentatum. Published as a Trenton species from Turin N.Y. But the types are referred by Whitfield + Hovey to Cin. O.

The typical specimens are quite common at the quarries in Hamilton Butler Co Ohio. It has not been found associated with O emacerata, ~~but begins~~ and, as far as known, has a range commencing about 50 feet above the latter, and extending to nearly the top of the exposure of the Lower Silurian rocks. The largest specimens that I have seen were found near Oxford, in Butler Co. Ohio. (= Fig. 6A ?)

Costtis meeki.
It may be readily distinguished from O. emacerata, for which it has been mistaken, by the following characters, to wit, It is smaller, striae not so fine, (2) mesial sinus in the dorsal valve and mesial ridge in the ventral valve more distinct and better defined, greatest convexity of the ventral valve more central.

12 mp.

Platystrophia dentata From 250 to top of hills back of Cin.

Raf. alternistriata. Striae more uniform in size + finer. Shell has a shining lustre as in L. sericea. Its range seems to be about as great as that of alternata. Mill. This range must be Maysv.

ventral valve Coxilyptis
alternistriata. Hall. Striae of unequal size, a large + small fine. From alternata by regularity. Dorsal valve with nearly equal striae. Lin. Maysville. Madison.

dichotoma
radii more numerous than in fissicosta but in shell less robust in habit. radii rounder. Radii distinctly crenulated by concentric striae

fissicosta
Angular costae, bifid trifid.

Rocks. — June 26.

1. West of bridge 51, west of Millin. Rock resembles Garrard SS. at base of Utica, where it is common.

2. (No 7) True Garrard SS. 4 mi. W. of Richmond. Ky. Weathered.

3. Loc. 87. Four miles W. of Richmond. True Garrard, but fresh.

4. Clinton. 4 ft below top. at bridge E end of Bardstown. Ky.

5. Butland bed, 19½ ft below top of Clinton. bridge east end of Bardstown. Nelson Co. Ky.

6. Massive Madison bed below thin bedded layer. 1 mi. West of Bardstown, at distillery on east side of creek.

7. 1 ft above base of Butland bed, 4 mi. E of Bardstown. Ky. on Springfield pike. = Main Richmond exposure.

8. South end of Mt Washington. Madison. Near base of Upper third.

9. South of Mt Washington. The great clay rock section of the Lower Richmond.

10.) 12 ft. bel. the top of Clinton at
E end of Bardstown. Ky.

11. 20 ft of clay rock a short distance bel. the lowest Strophomena maysvillensis. Takes place of Garrard SS. just west of depot at Williamstown. Ky.

Wyoming.

Din. subquadrata
Pl. sericeus
III. pebbles.
H. insculpta
halli alveolata
Calapoecia
St. nutans. neglecta
Zyg. kentuck — Rh. dentatum
— H. insculpta

Catazyga.
— Dal. jugosa
selecta — Orthoceras.
Tetradium
— clayrock.

— Din. subquadrata
2 — H. insculpta
7½ streptelasma Pr. vetusta
Calopoecia Rh. capax
18½
— D. jugosa
5 Str. planumbona
1 — C. headi. Zyg. kentuckiensis
— Str. neglecta?
— Pr. hospitalis
— Tetradium
— clayrock.
— Heavy unfos. bed.

Acidaspis.

1. Species having occipital ring

a. Smooth or with a central tubercle = Odontopleura. andrewsi

b. With a single large straight median spine = Acidaspis. crossota Lock, onealli = incorrect,

Position unknown = Ceratocephala ceralepta. Anthony,

C. cincinnatiensis. Meek,

Ceratocephala goniata Warder abundant Springfield. associated with phlyctainoides

Calymenella = C. retracta C. marantha

Acidaspis o'nealli, Not far from the northern bank of Todd's Fork, about 1 mi. very nearly part of Morrow. in Salem Township.

Sold to Low Simonton. grain elevator.

Glyptocrinus o'nealli, bought Wachsmuth, Iowa

Found in Griffith's creek, in Virginia.

Orthis occidentalis.

Dalmanites breviceps. Found by Mr. Kelley O'neall

From lower part of Lebanon beds, at lower part of strata containing from just below Orthis occidentalis.

Simonton. Lives in Broadway, 3rd house after you pass Warren on east side of street.

Dr. Cowden at Morrow

Paracatus - genus.
Beatricea - genus. - Nich. Report.
third species?
Heterospongia - genus - Cincinnati M.
~~Heterospongia ... Genus~~
~~Species~~
Dystactospongia insolens Genus
species.
Pasceolus petrosta Genus, species.
" French species.
Stromatocerium canadense
Brachiospongia tuberculata.
Stromatocerium richmondense
canadense.
Columnaria alveolata.
Calapoecia cribriformis.
Leptobolus insignis.
S.
Streptelasma cincinnatiensis
Schizambon dodecus
Trematis millepunctata
~~" guinensis ...~~
Philhedra ... cincinnatiensis.
Schizocrania filosa
Crania scabiosa
Crania ... albersi
Crania laelia
Rafinesquina ulrichi
alternata
fracta
nasuta
loxorhytis
alternistriata

Figs. 5. 6 A. B. Plate II. Sizes + publication
Figs 1 B. III.

Fig 1. 2A. 2B. 3. 4. 5. 6A.
6B. 7. 8. 9. 10. 11. 12. 13.
14. 15. 16 17. Plate V.

Figs 2A. 2B. Plate VI
Figs 1F 8A. 8B VII
Figs 2C D. E Plate IX
Figs 8 XIV.

Types.

Stroph. planoconvexa.
sinuata.
sulcata.
Leptaena tenuistriata
Plectambonites sericeus.
Stroph. nutans ?
planumbona
subtenta
neglecta
approximata
Plectorthis jamesi
ella
aequivalvis
plicatella
triplicatella
fissicosta
dichotoma
Dalmanella multisecta
emacerata
bellula
jugosa.
Hebertella occidentalis
sinuata ?
insculpta

Washington.

[illegible]. Not figured

Hindia parva

Leptopterium mammiforme

Dystactospongia minima

Heterospongia aspera

Pattersonia difficilis

Pattersonia ulrichi, Rauff. Pal. XL. '94

Dr. [illegible] address.

Lingula modesta

What about [illegible] plesiotypes.

Trematis obliqua

Orbiculoidea tenuistriata

Crania pacannata.
scabiosa.
parallela

Plectambonites plicatellus

Orthis jamesi. Which types?

Plectorthis plicatella

Where is Carley collection

Plectorthis et Strophomena ...

Orthis ... English forms

Orthis kankakensis McChesney

Which types

Crania type

Zygospira cincinnatiensis.

Isotelus

Eldridge.

Garfield car to Meridian St.
walk one square south.
Meridian and Merrill St.

Hindia parva. Ulrich. types =
= Minn. specimens are the types.

Clinospangia faberi = probably the
same as Leptoptérium mam-
miferum.

Physics. 3rd Year, or 4th Year.

Elect either Chem or Phys. Must may elect both.
Must elect 1 yr. of history
Bot. Zool. Physiol. + Physiography.

Physics 1 = Mechanics + Sound,
Physics 2 = Light heat electricity.

In High School no uniform texts & methods of procedure are required by law in different cities.

History is chosen as the map study. Must come in extra 3x a week for reference work in order to make this leave a study.

N.Y. allowed to substitute drawing or shop work for science, Nothing can be substituted for science.

Physics I 8 30 — 20 pupils
9 boys 11 girls

Physics I 10, Or — 32 pupils
14 boys 18 girls

Physics 2 1 PM — 23 pupils
11 boys 12 girls

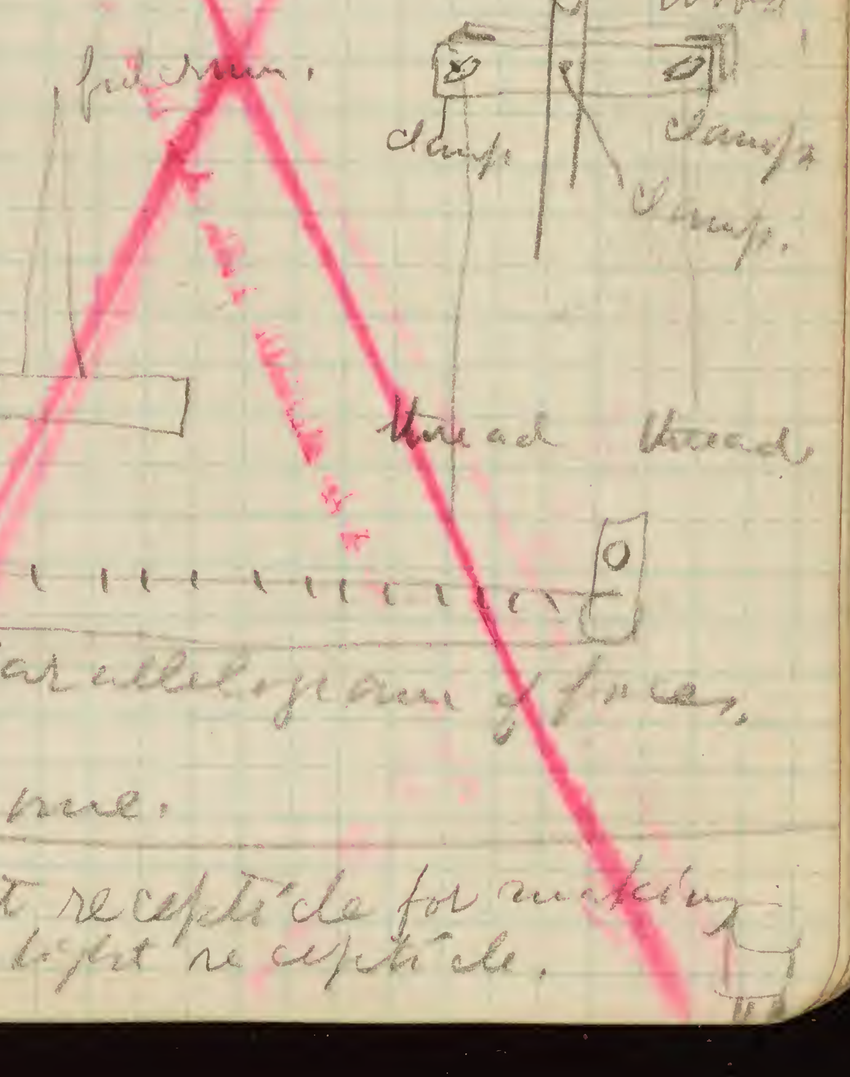
Forty lessons in Physics.
Lynn McMillan.
Henry Holt + Co. 1906.

Assistant get $20.00 a month.
25 —
30 —

Working library in laboratory.

Physics I, 18 experiments
2, 23 "

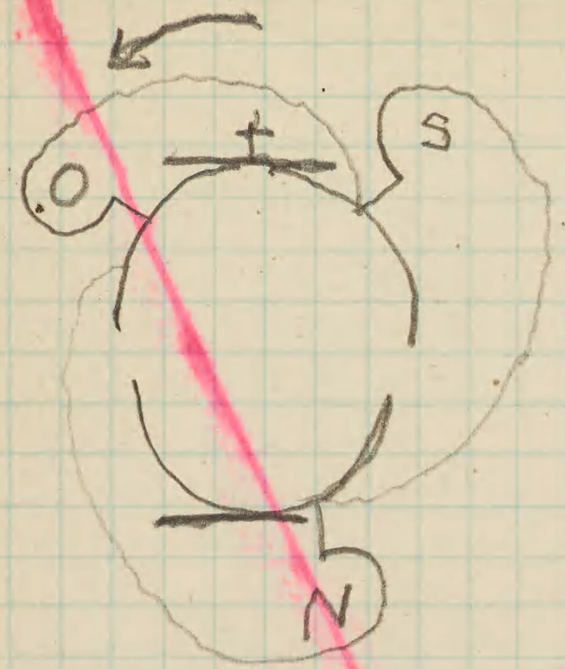
Pendulum support



Parallelogram of forces.

Metronome.

Midget receptacle for metal electric light receptacle.


+
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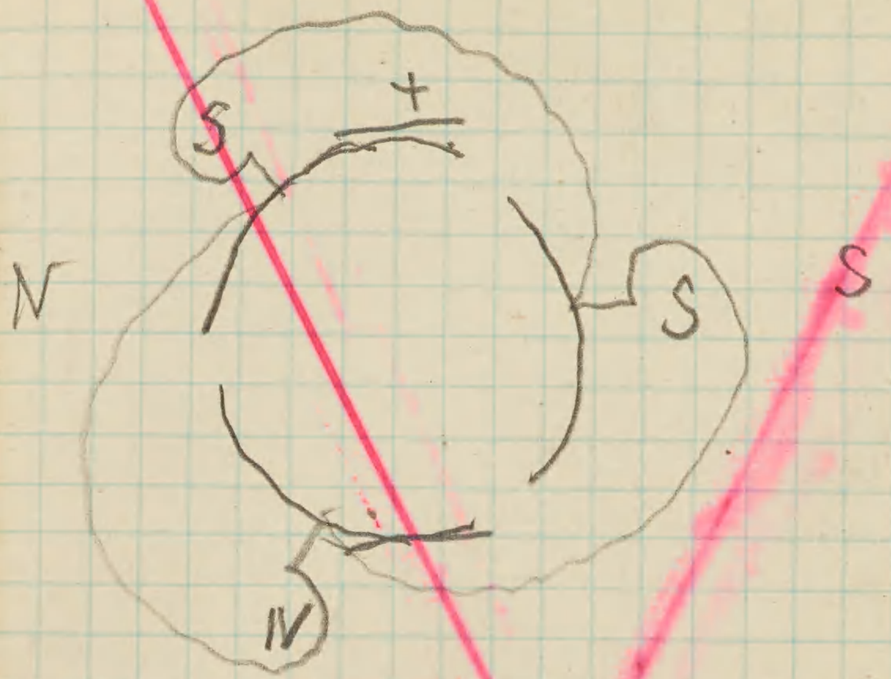
N
S


+
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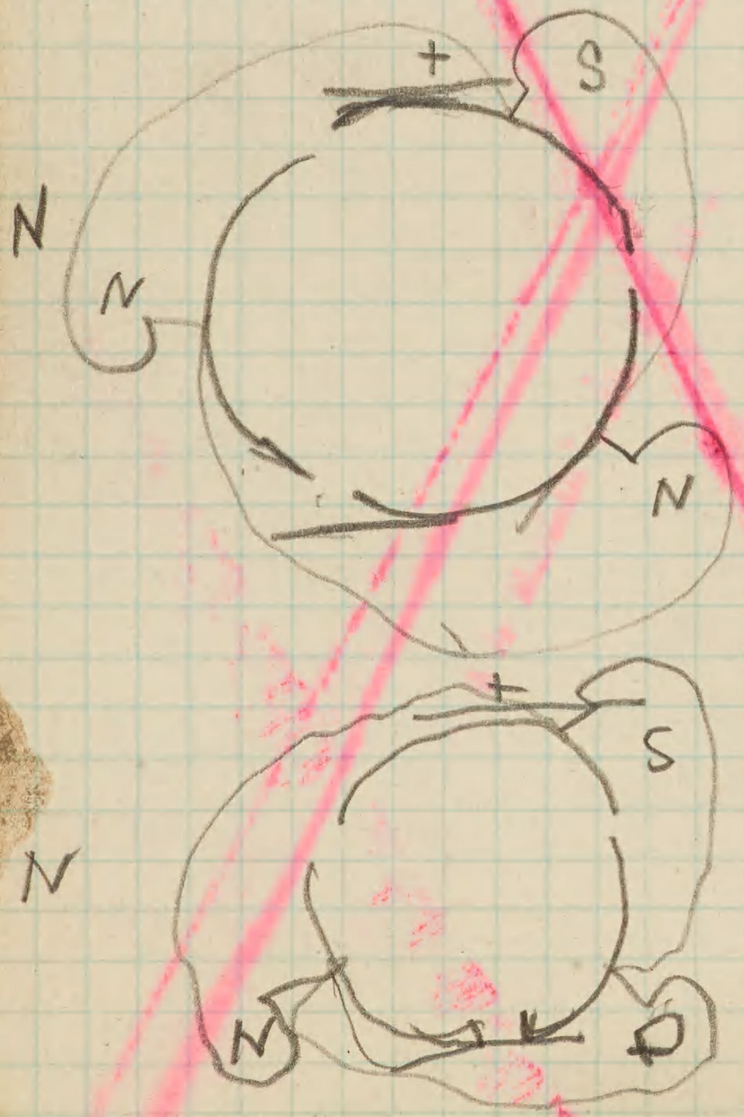
IV
S


+
S
N
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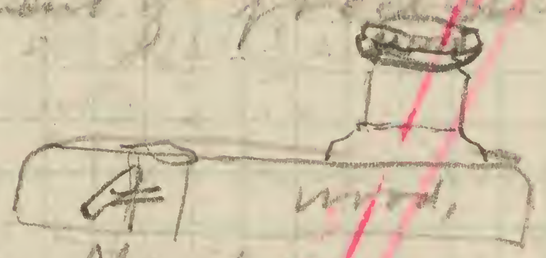
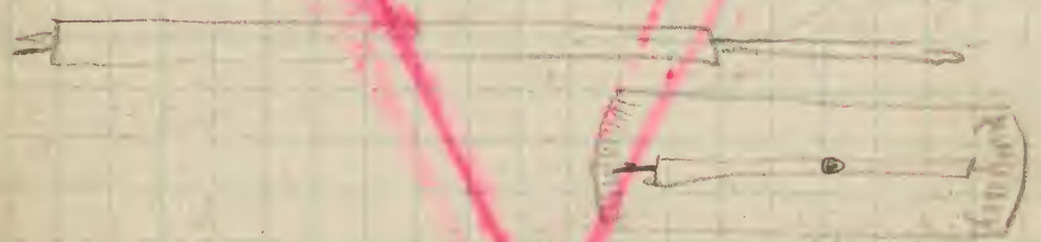
N
S

+
S
N
N
O
S

for clamps in connection with measurement of resistances.





Galvanometer used for volumeter readings in resistance coil, for ammeter reading through #16 wire, short length.

Red glass bulbs for spectrum work.

$ 3.50

Watson, W.
A Text book of Physics.
Longmans Green & Co, 1904
NY,

Practical Measurements in Magnetism & Electricity
George A Hoadley
Am Book Co, 1904,
111 pages

The Rational Arithmetic
Grammar School, Myers & Brooks

William H. Pierce.
Boston
282 Washington St

Miss Rhoades, = 1.50
W. Monis Hunt = 1.25

---

3 hrs Roman Hist.
2 hr Greek
5 hrs Modern
5 hrs American
2 hrs English Robert
3 hrs English. Miss Cox

Elements of Physics
Sanford
Henry Holt, Publishers

Physics Lab Manual
Trues & Preston,
Industrial Training School,
Indianapolis

History of Physics
Florian Cajori,
Macmillan Co.

Physics 1 Mechanics & Sound
2 Heat Light & Elect.
Carhart & Chute

Laboratory Course
3 Mechanics & Sound
4 Electric & Light.

Cardinorama

Wilbur Defenbaugh [illegible]

Charley Driggs –

[illegible],
20 inches heavy bedded fossil[illegible]
bedded,
1–2 in chert, ostracods [illegible]
26 inches fossiliferous thin bedded
1–2 inches darker,
10 in thin bedded.
about 12 inches above [illegible]
thin bedded, most of them
14 inches [illegible]
9 inches thin bedded
2–3 in Darker.

William Beachler
Decatur, Ind.

Will Gibbs, at the Leech quarry, knows about the [illegible],

---

Old Geo. W. Hawker quarry.
Viss Gunn owns the quarry now. About 10 ft down from the top = [illegible].

Chaffin quarry, [illegible] very scarce. They occur very [illegible] here. 20 – feet down at least,
Another [illegible] told me that they occur below water level about 2 ft at bottom of quarry,

---

Mc Reynolds. = Interurban quarry = [illegible] not found here,

---

Leech quarry, occur

3 to 3.5 ft = [illegible].
3 ft
bottom of quarry –

~~Hindia sphaeroidalis gregaria~~ Miller & Dyer — ~~Cin. Jour. I. p. 37. 1878,~~

~~Hindia parva Ulrich.~~ — ~~Am. Geol. III. p. 244. 1889,~~

~~Lepidolites dickhauti, Ulrich,~~ — ~~Cin. Jour. 2. p. 21. 1879,~~

~~elongatus Ulrich~~ — ~~2 p. 22~~

~~Anomaloides reticulata Ulrich~~ — ~~I, p. 92, 1878,~~

Lelechia [illegible] Ulrich.

Tetradium fibratum — Am. J. Sci. Vol 22, p. 236, 1856.

Thomas C Brown, 3/4 mile
s[outh] of Lynn Sta,
John Devire at Wabunk Sta,

Menzies station.

N. of De Moraville, = excellent
chance,

S. of Morning View good enough
ravine.

---

11 miles from Circumvate,

Landscape in History

Archibald Geikie.
MacMillan 1905.

Age of the Earth
W. J. Sollas,
T. Fisher Unwin
Paternoster Square
London 1905,

The Nature of Ore Deposits,
Dr Richard Beck
+ W. H. Weed.
Engineering + Mining Journal,
New York,

Ore Deposits of the U.S,
J. F. Kemp,
Engineering + Mining Jo.
261 Broadway N.Y.

Geology of S Africa
F H Hatch +
G S Corstorphine,
Macmillan 1905

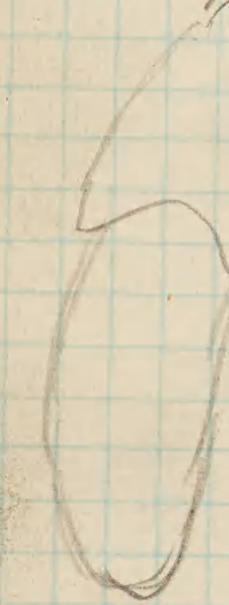
Economic Geology of U.S,
Heinrich Ries,
MacMillan 1905

Introduction to Rare Elements
Philip E Browning
John Wiley
New York,

Experiments with Plants,
MacMillan Co 1905,

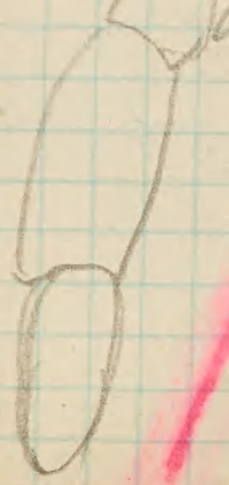
Eurypterus newlini. Clarke
Am. Geol. Vol. VI. pp. 258.
Associated with Eurypterus
prob. lacustris and
Ceratiocaris.

C. E. Newlin. Rokomo. Ind.
3 specimens = types.

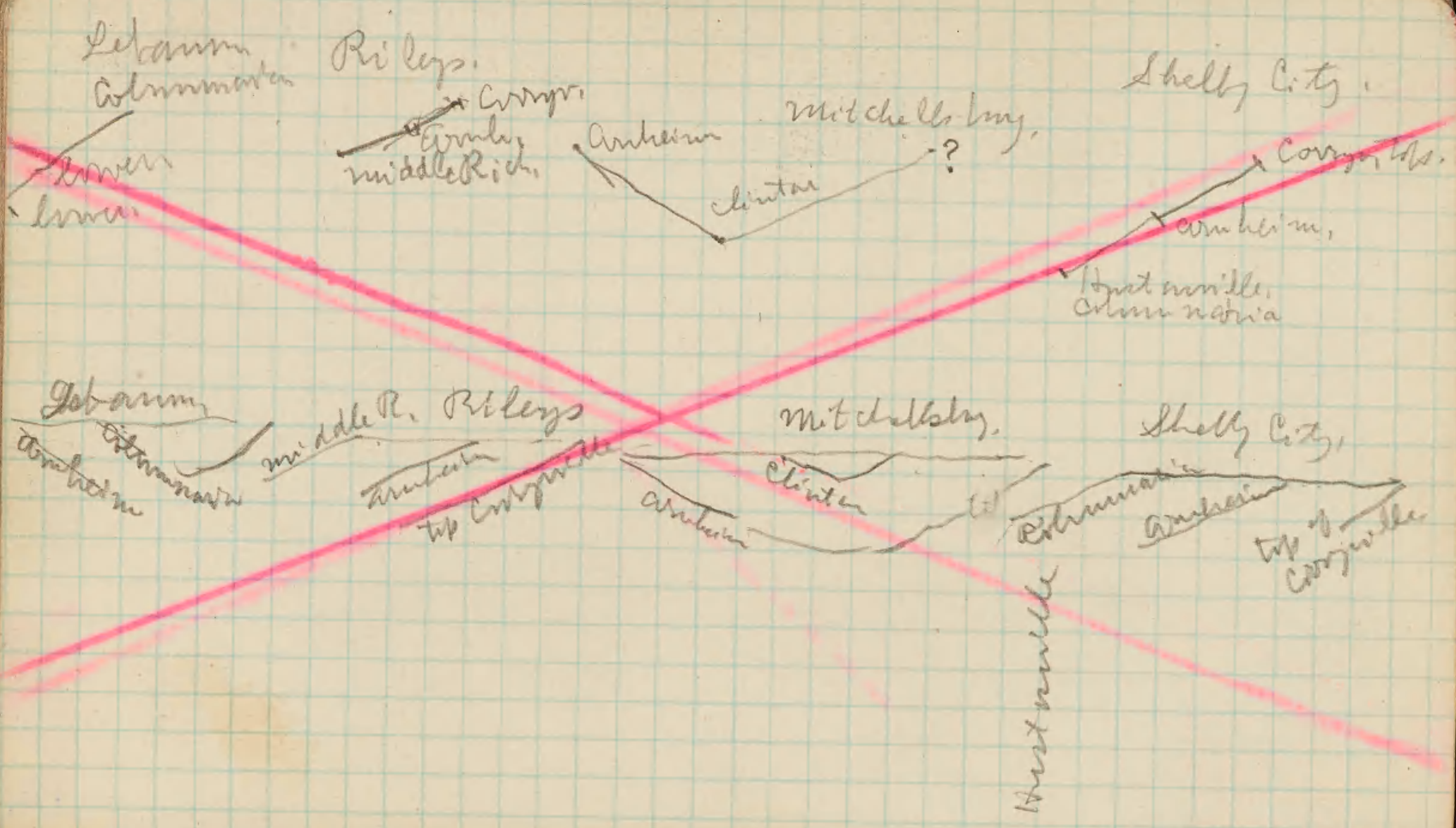


south fjords
as in
paddle. Meyalograp-
tus with
chelate spines lying
pointing upwards.

Carcinosoma insigne. Clarke,
Am. Geol. XIII. page 77
Charles Smith. Akron Ohio.
Pair both ♂ Rokomo.
Chelate appendages short
and fewer.



Eusarcus Grote & Pitt
Bull. Soc of Nat Sciences. Vol
III. No 1.



Lebanon
Columnaria
lower
lower
Rileys.
Corryv.
middle Rich.
Arnheim
Mitchells lmy.
Clinton
?
Shelby City.
Corryville
Arnheim,
Hustonville,
Columnaria
Lebanon
Columnaria
Arnheim
middle R.
Rileys
top Corryville
Mitchells lmy.
Clinton
Arnheim
Columnaria
Arnheim
Shelby City,
top of Corryville
Hustonville

Hindia parva.

Sponges free, globular in form, with an even rounded surface. Specimens vary between 5 and 10 mm. in diameter, but in a large proportion of the specimens seen the diameter varies but little from 7 or 8 mm.

The radiating canals are a little smaller than in the common H. sphaeroidalis, Duncan, of the Niagara, being, as a rule, not over 0.27 mm. in diameter. H. inaequalis Wright, from the lower or sponge beds of the Trenton limestone at Dixon, Illinois, is larger and has, as its name may indicate, radiating canals of very unequal size.

This species (H. parva) has been known to me for nearly ten years as one of the most persistent fossils of the Trenton group in the western states. I met with it first at several localities in central Kentucky and since have found it, holding about the same horizon in Tennessee, Minnesota and Wisconsin. Though a common fossil, good specimens are rare.

Occasionally we meet with specimens of this or a closely related species in the middle beds of the Cincinnati group. These are a little larger than the Trenton form, the specimens averaging about 10 mm. in diameter. This supposed variety of H. parva has been found on the hills about Cincinnati, Ohio, at Colby and McKinney's in central Kentucky, and at Savannah, Ill. Formerly I supposed it might be identical with Miller and Dyer's Microspongia gregaria (Jour. Cin. Soc. Nat. Hist. vol. I, p. 37, 1878) but its internal structure is clearly the same as that of Hindia. These authors say of their species that its structure is "fibrous or minutely porous, and very compact", and that at sections "needle-shaped bodies" supposed by them to be spicules. From this it is evident that in this they are mistaken in their diagnosis or they had a very different sponge before them.

I have seen specimens of another supposed variety of H. parva were collected from the upper beds of the Cincinnati group near Middletown,

chies. These have the same internal structure but are uncommonly small, the diameters of the smallest and largest specimens being respectively 3 and 5 mm.

Microspongia gregaria. p 37.

This is a small gregarious, globular, calcareous sponge, free and having no epitheca. Its structure is porous or minutely porous, and very compact. Weather-worn specimens show the porous structure, which is well illustrated in the figure. Microscopic sections, prepared by Dr. J. H. Hunt, reveal what we suppose to be spicules. They are minute needle-shaped bodies. This species is sometimes found in clusters, though it is by no means a common fossil. Specimens collected vary in diameter, from less than one eighth to more than one half an inch, and have been found at Cincinnati, and in the upper part of the Group. The specimen illustrated is from the collection of C. B. Dyer.

p. 92.

Dictyophyton reticulatus. Ulrich.

The thirty five fragments before me were found in a spot about two feet square, and it may be possible that they all belong to one individual, but that seems scarcely probable. They are all hollow, and the envelope is composed of an aggregation of sub-cylindrical or rather club-shaped stems which are placed parallel with each other, and perpendicular to the surface; their inner ends are acutely pointed, while that end which shows on the exterior surface is rounded, and with a minute pit on the top, for the articulation of two very fine and small spines. The distribution of these club-shaped plates is very regular, being arranged in curved or flexuous transverse, and diagonally intersecting lines; and on account of their cylindrical form, there are a great number of interstices which may be referable to pores, analogous to those in the Asteroidea.

Two of the specimens are compressed, conical in form, one is two inches in length, and the greatest breadth is three-fourths of an inch; its two edges run ~~parallel~~ nearly parallel for about one and one-fourth of an inch, from where it tapers regularly to a point. These specimens may represent rays. Another specimen appears to be part of a disk, and judging from it's form it seems possible that it was possible that it was supplied with three such rays as those described. Another fragment were observed, in which some small specimens of Bellerophon bilobatus were found within the envelope of the plates.

Locality and Position.—From the Cincinnati Group at Covington, Ky., at an elevation of about 275 feet above low water mark in the Ohio River, found by Mr. H. Dickhaut and the author.

Lepidocites dickhauti, Ulrich.

All the specimens of this species examined are exceedingly flattened, but their original form undoubtedly was either sub-spherical or sub-pyriform with the lower portion considerably indented. The envelope of scale-like plates is very thin, being little more than one-hundredth part of an inch in thickness, and appears to have been slightly flexible. The plates imbricate with the exposed marginal rounded, and arranged in concentric lines crossing each other in a quincuncial manner; they are much smaller about the indented portion, at a distance becoming larger as the rows approach the upper portion. The appearance presented by a specimen that is flattened vertically, is very like that style of ornamental work on watch-cases called "engine turning". In the largest plates observed, the exposed portion has a diameter that is not more than one thirty-second of an

in L. Detached plates have a length that is equal to about three times the greatest breadth, and are somewhat cuneiform in outline the widest end being that one which is exposed on the exterior of the rack. When the exceedingly delicate integument lining the interior of the rack, and to the outside of which the plates are attached is removed, the lower ends of the plates are exposed; this side of the plates is provided with a slightly defined, longitudinal furrow.

Specimens of this species usually contain iron, which effectually destroys their minute characters. Fortunately, the author found some fragments that were entirely free of this matter and must and from these the details of the above description were obtained.

Named in honor of the energetic collector Mr. H. E. Dedeland.

Formation and locality; the specimens were found in the shales of the lower part of the Hudson River group at Covington, Ky. Elevation about one hundred and fifty feet above low water mark in the Ohio River.

Lepidodictyon elongatum. Ulrich.

This species differs from the type of the genus mainly in its different form. The form of L. dedelandi is subcylindrical, while that of the species under consideration is subcylindrical, with the ends usually somewhat truncated. The length is generally equal to about three and a half times the diameter or transverse measurement. The specimens are incrusted with iron, and for that reason I was unable to ascertain whether the plates differ from those of the type species. Their arrangement is very much the same.

This species seems to have attained a larger size than L. dedelandi. The largest specimen found, the upper extremity is broken off, is flattened cylindrical and nearly two inches in length by three fourths of an inch in width.

Formation, locality and collectors: same as the last.

Lepidocyclina [illegible] multifera, Ulrich.
Contributions to Am. Pal.
pl. 33. Kind. Riv. Ga.

N of De Mossville.
R R to 55 ft up to top of limestone
with clay inclusions.
40 ft. down to Licking, intermediate, common,
5 ft = probably rise of river
due to rains.
Possible that at top of Lexington
might show up at low water
along branch immediately
NW of station.

N of mile post 23

53 ft R R to top of Winchester,
52 ft down to Licking,
5 ft probably [illegible] of river

Bryants Ford, [illegible] ½ mile
N of Water tank.
20½ mi from Cincinnati,

2 ft 9 in = Fulton. Clay [illegible] large
near middle.
57½ ft down to R. R.
50 ft down to Licking at low water
at least.
intermedia found about 10 ft below
top.

Station 31, culvert. 3 mi. from Coney island.
35 ft above low water collected,
30 ft above low water. Utica,
Rest covered by river if not [illegible].

Station 32 Rockcliffe + Station 33 Dunker's
Nothing above 30 ft up.

Station 34 = Stockton road 1⅓ mile W of
=2⅔ mi E of Water works.
8 mi. creek

Station 35, Creek + road on west, short [illegible]
steep creek.
over 45 ft of thin clay with little
thin limestone
36½ ft from top of thick fermont [illegible]
interbedded with clay to river
= at least 35-40 ft of limestones
with few [illegible] at base of Utica
River up 30 ft

Stations 36-37 flood plain narrow on
north side of river, = 200 yds.
8 mile post office.

Station 39, Creek = 8 mile creek.
Bridge [illegible] Deep wide valley
with creek + road west of creek, many
Same limestone exposures as at
35 but no good vertical section
[illegible] at hand.

Station 40 Cooley [illegible] Fishing camp.
A gully in the north, above track
level.

Between 40 + 41 are several good gullies
above [illegible] level. 6 M to N on R
9 Miles to [illegible]

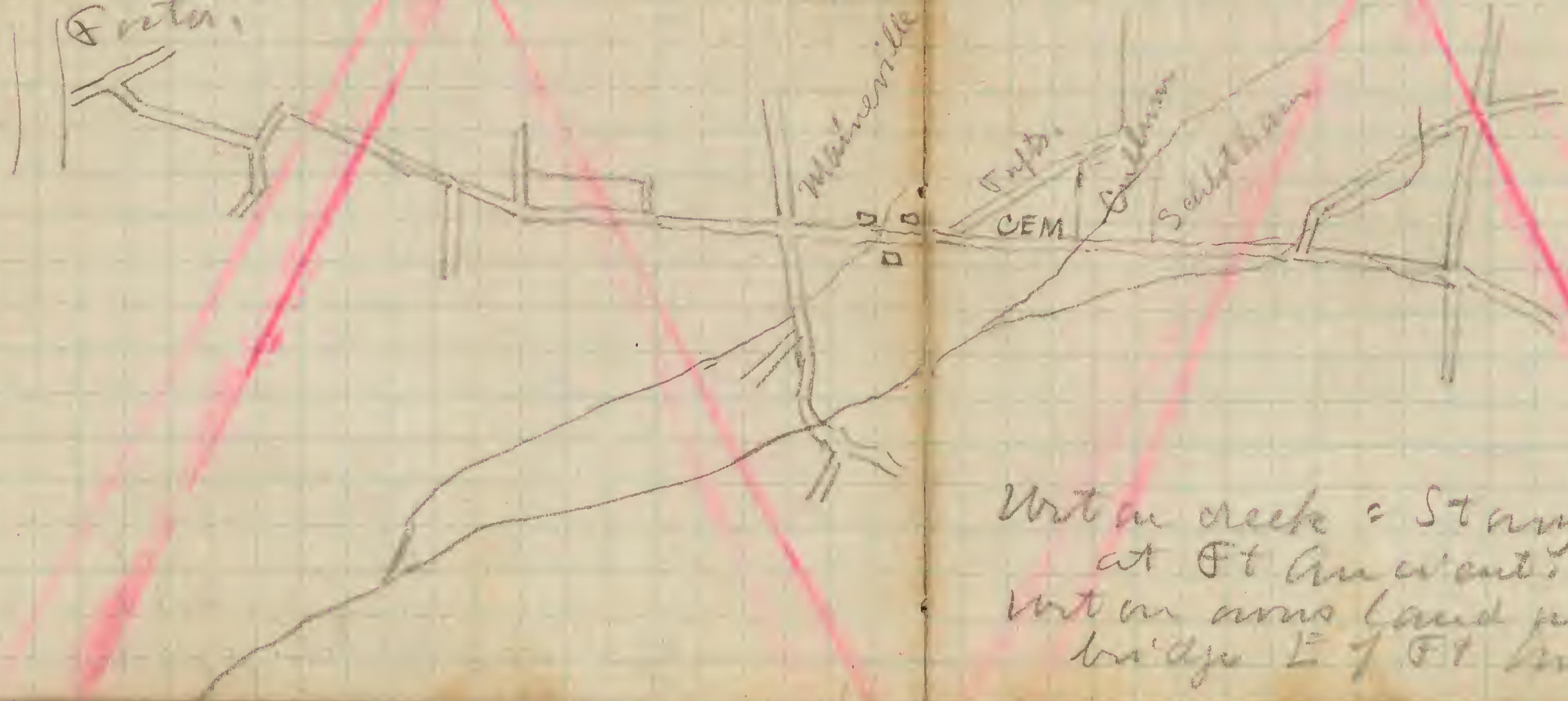
Station 42 = Nine Mile Station,
large valley with bridge of road on E
west side of creek. Exposure
up the creek, Broadest valley,

Station 44 apparently a good gully
exposure, Track level = 66 feet,

Station 46 another gully, on west,

Station 47. The broadest valley,
E of School house No 1.
Palestine
about 4 miles to New Richmond

Station 48 E of creek [illegible] road to
Palestine [illegible]



C T M, Williams,
William Lewellyn
A C Brennan = Newtown
on Ft Ancient road.

Nicholson run = creek 2 miles
West of Blanchester

Second creek at Blanchester,

Wet on creek = Stony Hollow
at Ft Ancient.
Wet on [illegible] land [illegible] N side of
bridge E of Ft Ancient.

Lexington.
Along Belt line.

12 ft Winchester exposure along return section of railroad, Partial exposure of same beds in cut giving section.

Apparently contact of Winchester and Lexington in quarry immediately this side.

Collected from supposed Winchester base at this quarry.

Mount Vernon. Fork up.
Fire clay directly above coal,

Dr. A. G. Lovell.

Sand-stone just below Mount Vernon sandstone. Pine Hill.
L. & N. R.R.

½ mi. West of Givens station to bridge up creek, and up road toward pike southeastward.

47 ft up to top of Duffin rock.

{5 ft dense, gray crinoids common. Top dugg.
{5 ft dense massive limestone exposed
{60½ ft creek under bridge up to
5½ ft down creek down to
Givensville common at level reached at base of Bellevue.
The pseudo-Cynthiana top of Fairmount next below. Then massive limestone with Orthis, Lyn[illegible] rather [illegible] common.
{Then thinner limestone with Orthis [illegible] [illegible] Hillsboro like  bed !?
in Fairmount, Strophomena [illegible]
= ½ mile E of Givens Station)

---

1 mi. S of road south of Shelby City, where Leptaena was [illegible] to be found. Incorrect I think now.

Dry limestone.
[illegible] layer - 5 ft down.
Strophomena [illegible] like form [illegible] down about 5-10 ft.
Collected also SE of bridge on hillside.

West of
Pitt Brasure, 1 mi. N. of
Parksville, Ky,

Dev. chert thickness unknown,
1 ft 6 in. crinoidal, Dev. ?
4 ft. [illegible] massive clay rock.
clay rock, soft, shaly, Platylynx & [illegible] collected.

In front of Jim Jackson Edwards.

5 ft Dev. limestone, massive, one cherty layer 1 ft below top. Corals few not numerous, brownish. (top 1 ft = Duffin)
6 in. conglomerate, pebbles chiefly ½ to ¼ inch. Largest pebbles 1–4 inches.
Not [illegible] + slip for some distance NE [illegible]

Up stream from J J Edwards [illegible]
Duffin layer [illegible] strongly conglomeratic or brecciated = 1 ft above,
Beneath this is massive Dev. limestone,
fossils few. This section of Devonian limestone only estimated at 2 ft to 3 feet probably.

⅛ mi. SW of Jim J. Edwards, 1

Black shale.
2 ft 6 in Dev. limest. Corals few, Dev. Hindia sphaeroidalis.
5 in. cherty layer.
1 ft Clinton.
large crinoid heads.
Whitfieldella + Strickland [illegible]
14 ft 6 in Clinton, with Lyellia? about 2 ft above base of exposure
base of Clinton.

Farther down stream Pl. lynx on left of creek = east, at 55 ft below limestone like Clinton + D[illegible] not examined.

Better section on W side of stream
Black shale
1 ft massive, cherty, fossils, Duffin layer.
2 ft massive, little chert [illegible] farther down
7 ft thin bedded chert, Dev.
3 ft 3 in. massive as west of Parks, Edwards
44 ft interval. Clay weathering soft shaly.
Platylynx loose

Rileys

Will Isaac, 1/4 mile N of Riley

Fairmount with Streph. maysvillensis NE of house along west bank of small stream, 33 feet below Dev. limestone exposure near Riley station, = immediately south of station.

Dip strongly southward hence this part of Fairmount is probably at least 66 ft below Devonian if not more.

Immediately below Devonian dense blue clay limestone as south east of Givens station, up the road from the bridge.

Near cave 1 mi W of Rileys

Plaesiopora fauna in nodular limestone in clay rock, like nodules at base of Richmond at SE of Lebanon. Here at 10 ft below Dev. l.
Columnaria alveolata! occurred 5 ft lower than Plaesiopora loose, but not above

Devonian l. along road going South SW of cave 5 at least ... ft thick.

Farther north ... a Columnaria was found loose above base of 83 Black shale. Hence doubt ... lastly.

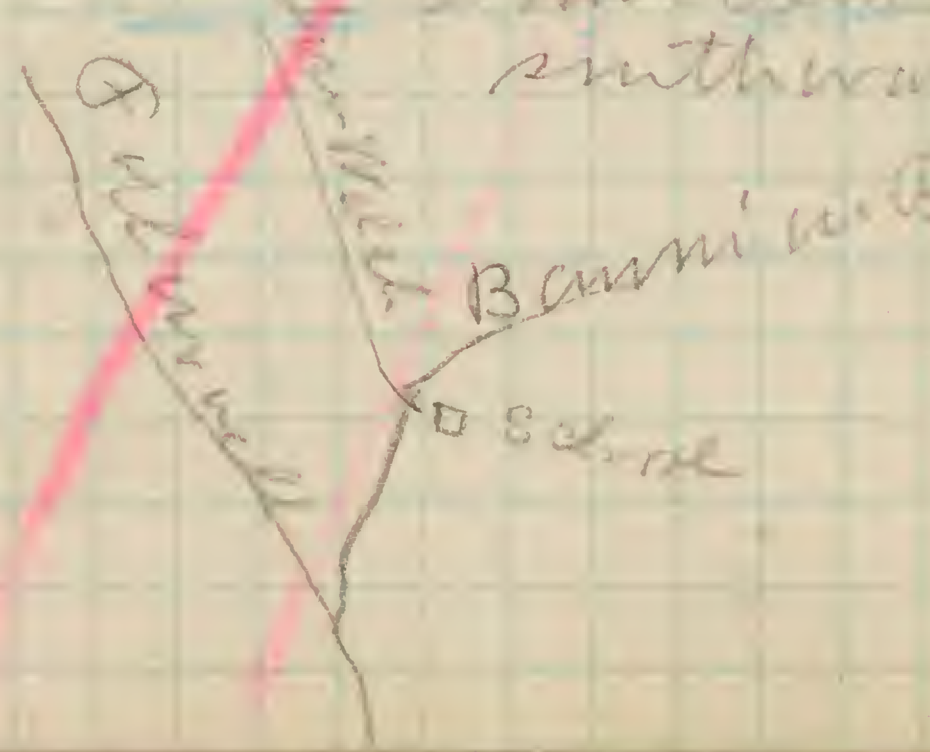
The strong south dip carries the Black shale below the road going south as far as beyond the first house which is on west side of road, 1 mi from R.R.

Streptelasma just below Dev. l. cincinnatiensis, Canadensis

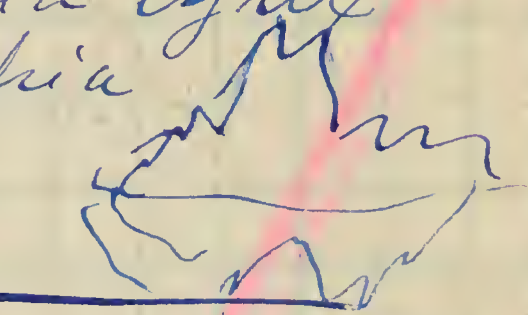
11 ft below Black shale farther down creek is top of Columnaria alveolata! layer 2 ft thick. Columnaria abundant, evidently the source of loose specimens.
Streptelasma canadensis immediately below Columnaria level, in fossiliferous strata 3 ft thick, guessed at, since amount of southward dip is not known.
Then Tetradium many large and Calapoecia.
Streptelasma canadensis + Columnaria halli! possibly along alveolata but this not certain, in layers at least 2 ft thick.
The Tetradium in layers 1 ft thick very large specimens 2 ft across.
100 yds farther S is school at mouth of branch.
Dip of rock is gently southward.
Next exposure then for 1/8 mile where rocks dip very gently northward. Here is Plaesiopora in clay rock.
50 ft exact measurement above point where branch enters from west is Columnaria bed loc. exposed SW up hill.
Follow well R.T. ... Valley View.

Nodular limestone as at Cave
with Prasopora abundant seen
about 10 ft lower.
All of section but upper Columnaria [illegible]
+ nodular layers not
fossiliferous = pseudo-Madison.

1 ft Nodules abundant
14 in. Nodules + Prasopora hospitalis
abundant,
2 ft fossiliferous with Platystrophia
but not lynx, Hebertella.
9 ft not fossiliferous pseudo Madison
clay like.
5 ft Platy lynx abundant,
14 ft to 14 ft interval with lynx rare
less common, at least not seen,
but branching bryozoans, etc, seen
large and but moderate in number
2 ft then lynx, large Prasopora,
large bryozoan, and [illegible]
branches, Plectambonites,
Section with fossils ends 3 ft,
J. W. Isaacs, Pleasant View,
5 ft Plat. lynx, Hebert. + C not
abundant to where road turns
from creek at J. T. Crews,
Down creek rock slopes gently
southward.


Bannister B. + mud.

Moreland pike. 1 mi. S of
Shelby city. Prasopora hospitalis
Platystrophia lynx
Platystrophia

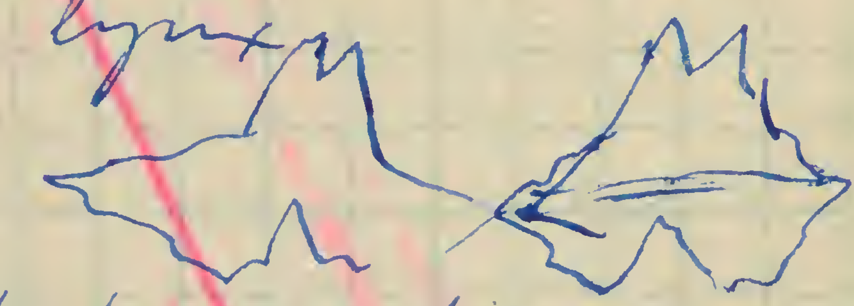


Cave. 1 mi. W from Riley's.
Prasopora hospitalis
Batostoma varians.
nodular limestone in clay

½ mi. NE of Jim Lamb
½ mi. SW of J. J. Edwards.

Robt. G. Edwards.

10–30 ft below massive clay rock
below Dev. limestone.
Prasopora hospitalis
Batostoma varians.
Plat. lynx
Plat.



Heterotrypa frondosa?

March 21 Indian Fields

Photo. 1. 2. Upper Richmond, W of Indian Fields. Cut.

Track level, Strophomena sulcata
Raf. alternata.
Hebert. insculpta,
Strept. cincinnatiensis
Hel. occidentalis.
Byssonychia [illegible]

Collected,

Upper Richmond from 8 ft below Clinton down to 4 ft above R R level at the Hornback curve.

Collected clay + limestone separately from 4 ft above RR track at Hornback curve to base of first cut west of Hornback curve. At east end of this cut, the path leads down to John Hornbacks house.

Collected from limestone layers, 3 ft above R R level, at 2nd big cut west of Hornback curve, Photographed formerly. This is [illegible] limestone, such as forms the thick layers, 6–10 inches thick, interbedded with [illegible] clay in lower half of Middle Richmond = lower half of this cut, where at least 20 ft are exposed.

Also collected clay of preceding cut: 2nd large cut west of Hornback curve. Photographed
= 3 formerly, + [illegible] of [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

March 21. Indian Fields

Collected, lower Richmond. Upper half, Indurated clay, No interbedded limestone, Section collected from [illegible] limestone at base of Middle Richmond to [illegible] [illegible] large cut east of Tom McL Lawrence?; Name forgotten. Section fully 20 ft.

At first large cut west of [illegible] [illegible] there is [illegible] [illegible] of the lower 40 feet of the lower [illegible] [illegible], [illegible] indurated clay, with no interbedded limestone. Photographed formerly.

At McL Lawrence's Plat lying large overlying [illegible] [illegible] clay layers [illegible] [illegible] and [illegible] [illegible] 30 [illegible] rubble limestones in considerable [illegible]

Photo 4+5 [illegible] Winchester, about [illegible] E of Gordon Station. [illegible] [illegible] [illegible] [illegible], chiefly indurated clay [illegible] here.

Richmond [illegible] from cut at Winchester, just west of depot, [illegible] [illegible] [illegible], chiefly limestone.

1

Meek

Rafinesquina fracta Strophomena
Rafinesquina loxorhytis. Strophomena
Plectambonites rugosa Leptaena
Strophomena sinuata
Strophomena nutans
Strophomena plicata
Plectorthis triplicatella Orthis
Dalmanella multisecta Orthis
Dalmanella bellula Orthis
Platystrophia profundo-sulcata Orthis
Platystrophia laticosta Orthis
Platystrophia crassa ? Orthis
Retzia granulifera. Dyer
Zygospira cincinnatiensis
Proetus spurlocki Dyer
Acidaspis cincinnatiensis
Dalmanites carleyi

March 22. 1907. Richmond

Newland station 300 ft west of station
is the abundand zone in
a sandy layer in upper Fair-
xxx mount.
Photo 1. Directly east of [illegible] in
middle [illegible].
Photo 2. Garrard St. ½ mi east of
Foster flag station.
Maysville 3? miles.
of [illegible] Foster.
to W. H. Parker.
At Foster top of Mt Hope
At W. H. Parker's east of road along
R.R. is [illegible] at top
of Fairmount. At Newland pl
a sandy layer of Fairmount
[illegible]
[illegible]
[illegible]
[illegible]
[illegible] small types,
[illegible]
[illegible]
[illegible] Meek.
[illegible]

Emmons

Strophomena alternistriata 1855

Strophomena nasuta 1842. p. 403

Strophomena sinuata.

Orthis crispata. —

Orthis striatula 1842 p. 392

Calymmene callicephala —

Trinucleus Caractaci

Shaler

Rafinesquina alternicostriensis.
= Leptaena.

Leptaena quadrilatera

Platystrophia regularis

Clitambonites diversus

Safford

Tetradium fibratum

Tetradium minus.

Cyathophyllum Loveni.
30 large + 30 small septa, bearing numerous strong marginal denticulations. breadth 4 or 5 lines.

Wenlock Shale near Dudley and in Gothland.

British Stromatoporoids,
H. A. Nicholson, 1886.
Contains Labechia & Labechia Canadensis
Labechia ohioensis, Pl II
Waynesville Ohio, fig 1.

Orthis inflata Salter.
Coniston Limestone, Westmoreland, looks like orthis retrorsa in fig 18 in plate 31 of Davidson's Brit. Brach. ...
Salter ~~Quart. Jr. Geol. Soc.~~
Mem. G. Sol. Survey, vol II, p. 372 and var β retrorsa p. 373 pl. XXVII figs. 3.4. 1848.

Orthis anticostiensis Shaler should be retrorsa according to Davidson but he throws so many species together

Dyer Coll.

Heliophyzonis stelliforme Miller & Dyer.

Hindia gregaria — Miller & Dyer.

Leptobolus lepis. Hall.

Trematis dyeri. Miller.

Trematis quincuncialis Mill & Dy.

Crania dyeri. Miller.

Ragia granulifera. Meek.

Proetus spurlocki. Meek.

Dalmanites carleyi. Meek.

Acidaspis Cincinnatiensis, Miller.

Dystactospongia insolens. Miller.

Ortonia diffractis Miller

Ed R Quick

Trematis reticularis. Miller.

Brachiospongia occurs in fine cherty nodular limestone above Cettia breccia, which is immediately the top of Trenton (at Cedar Run.) Near Bridgeport Franklin Co. 3 miles above Benson Stat. on Benson creek. near base of Winchester

2½ mis of Bridgeport

Strobilospongia aurita
tuberosa

Hindia Parva.
Beyrichia chambersi

Strobilospongia Tuberosa.
Turner's Station.

Under the name Trichites typicalis Ulrich has catalogued similar bundles of spicules from the tops of the hills at Cincinnati. Ohio.

7

James

[illegible] SE of McRees Ferry,
Eden with Leptaena & D. [illegible]
40 ft [illegible] Winchester.
[illegible]
7 ft [illegible] of Perryville [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
6 ft [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

[illegible]
Hebertella [illegible]
—124
[illegible]
[illegible]
[illegible]
[illegible]
Winchester?

- [illegible] beds.

- [illegible]
- H. [illegible] & Strophomena [illegible]

([illegible] fauna,

- Rh. [illegible] & H. [illegible]

Green Creek,
Winchester. 40 ft.

Perryville. 10 ft.

124
64
188

Paris [illegible] beds
[illegible] 149 ft above [illegible]
124 ft [illegible]
Stroph. 42–49 ft [illegible]
[illegible] ledge 5 to 23 ft [illegible] fauna,
[illegible]
[illegible] 91 ft. [illegible]
[illegible]
[illegible]

[illegible]
[illegible] 28 ft. [illegible]
[illegible] 10 ft. [illegible]
[illegible]
[illegible] 20 ft [illegible]
[illegible]
[illegible]
[illegible]
[illegible] ft above [illegible] creek.
[illegible] 30 ft.

[illegible] NW of [illegible]
[illegible]

120 ft [illegible]
[illegible]
36 ft [illegible]
26 ft [illegible] Stroph.
Rh. [illegible]

Am Mus.

Parcelius albers.

Sholidops Cincinnatiensis

Conrad

Strophomena tenui lineata, 1842

" nasuta Rome Trenton

Platystrophia acutilirata.

Atrypa capax Calym. senaria

Lyceum

Isotelus gigas. DeKay

Calymmene callicephala Green ?

Albany

Schizograma schuchertr Hall + Cl.

Sholidops cincinnatiensis Hall

Am Mus.

Mus. number of Calymm. senaria,
fig. 3 L, plate 64,
scarcely nasute at all = 843-1.
Stropheodonta tuberosa Beecher,

Parastrophia reticulata Hall. Intermediate dorts.

Rept 2nd Dist. 1842.

Plectorthis fissicosta
Compare with my types, &c

Orthis jamesi.
Compare with my types

1

Schuchert

Leptopterinum mammiferum. Ulrich,
Strobilospongia tuberosa Beecher.
Sinpula proctero Ulrich
modesta "
whitfieldi "
bisulcata "
elderi Whitfield. ?
Schizambon bockii W + Sch.
Trematis fragilis Ulrich
crassipunctata "
oblata "
umbonata "
Dizoma terministriata "
Crania percarinata "
parallela "
soralis "
Leptaena plicatella "

Plectorthis sedostriata Ulrich
Zygospira concentrica "
Glassia schuchertana "

Chicago.

Chirospongia faberi. Miller.

Pattersonia difficilis. Miller

Alveolites granulosa James

Streptelasma richmondensis Miller

Stromatopora papillata James

Stromatopora scabra James

Rominger,

Calapoecia huronensis Rominger.

Columnaria herzeri Rominger.

G. K. Greene

Labechia montifera. Ulrich.

McChesney

Dinorthis kennicotti

" kankakensis

Trematis punctostriata Hall
23rd Rept State Cab. p. 243. Pl Fig
Not listed but marked by green label.

Plectorthis fissicosta. Hall.
4490. Type is a triplicata and not my fissicosta.

15

Nat Museum

Trochobolites typicalis.

Heterospongia aspera. Winch.

Anthony

Acidaspis ceraleptea.

Locke

Isotelus maximus. Locke

megistos "

Acidaspis cristata "

Wetherill Coll.

Isotelus stegops

17

Paris

Pertarea verneuili Edw. & Haime
Columnaria multiradiata Castelnau
Orthis lavernensis Castelnau
Orthis ja ... Castelnau
Orthis alternans Castelnau
Strophomena sulcata Verneuil
Strophomena rugosa Blainville
Platystrophia biforata Schlotheim
Spirifer sheppardi Castelnau
Terebratula ... Castelnau

Bonn

Columnaria alveolata Goldfuss
Platystrophia biforata Schlotheim
Leptaena rhomboidalis Wilckens
Delthyris von Buch

Rauff's address

England

Plectambonites sericea Sowerby.
Leptaena transversalis Sowerby
Dinorthis inflata.
Dinorthis retrorsa Salter.
Isotelus platycephalus. Stokes.

Sweden

Dalmanella testudinaria. Dalman
Leptaena rhomboidalis. Wilckens.

Russia

Platystrophia lynx Eichwald,

Agnes Crane's Address

Nicholson

Zaphrentis dirvensis. Nicholson Date
Palaeophyllum divaricans
Calapoecia cribriformis.
Columnaria calicina
Columnaria halli

Bean Coll.

Strophomena? scabra, Jones,

Billings

Hebertella borealis
Ceraurus Icarus.

Maryland survey reports.
near Hampshire Co. W.Va.

Wilckens.

Lhwyd.

Von Buch.

Ferd. Schmidt
? Russia

Lindstrom
Sweden

? Boule
Paris. France

H. C. Cleland
Williams Mass

Albany		9
Am. Mus.		9
Anthony		15
Bean		21
Billings		21
Bonn	address	17
Chicago		13
Conrad		9
— Dyer		5
England	address	19
Emmons		3
Greene G.K.		13
James		7
— Lyceum		9
Locke		15
Meek		1
Miller		5
McChesney		13
Nat Mus.		15
Nicholson	address	21
Paris	— address	17
Quick		5
— Roemer		13
Russia	— Address	19
Safford		3
— Shelby		3
— Schuchert		11
Wetherill to Phila.		

5,30 at 101 Graham

Figures for photography,
Am Mus,

Hebertella occidentalis
sinuata
subjugata
Plectorthis sordida
aequivalvis.

Rhynchotrema kentuckensis
Zygospira modesta.

Platystrophia, ...

Pauciplicate form occurs in lower beds at Versailles with Dekayella ulrichi &c related to dentata and laticosta.

laticosta dentata Meek dentata Pander
crassa James
costata Pander
chama Eichwald
1 in sinus . 2 in sinus 3

Ohio Naturalist,
James S, Hine,
Columbus. O.

Academy of Science.
W. C. Mills.
Page Hall.
Columbus. O,

Fred. Schmidt

Sundstrom,
Sweden.

J. J. Sarle
Socorro. New Mex,
with Tight

Hartnagle
Albany NY,
Salam
Continued Medina question
Medina – Shawangunk form
Richmond

Boule
Paris,
Mus Republic spec

Señor Jose Aguillera
Pres. Intern. Geol. Congress
City of Mexico
$4.00

Syntrophia multicosta.
Syntrophia's Hall & Clarke's genus,
looks exactly like Clitambonites
See Bull. 80, 1905, N York Sur,
pl. 5,

Paleozoic Appalachia
Md Geol Surv. Vol IV. 1902

Physical Features of Md. 1906. Rept,

39 & Broadway, 1412 No,
N.Y. Electric Music Co,

Dr, Jackson
Inst of Dyer.

Carl Rominger,
Ann Arbor.

Hobbs at Ann Arbor.

Winchell's Coll,
Alma. Mich,

F. A. Bather
British Museum
Brachiopods

S.S. Buckman.
$ Brachiopoda
in plate all my ant in a half.

Plectorthis aequivalvis Hall,

Hebertella occidentalis

sinuata Hall

subjugata Hall

Dalmanella macerata.

Salina shales, In this my
west an Rockmart marine
equivalent of aerial Salina.
Or is Rockmart Cobbleskill

Pasceolus Alber,

Say
*Zygospira modesta Hall Type.

Is not the Richmond modesta but the Cincinnatian Utica form + suggests cincinnati ensis Rather distinct sinus with fairly isolated median plication.

Syntrophia multicosta.
Syntrophia Hall + Clarke's genus, looks exactly like Clitambonites See Bull. 80. 1905, N York Surv, pl. 5,

Paleozoic Appalachia
Ma Geol Surv Vol IV. 1902

* Plectorthis fissicosta = my fig 9E at least near it.

Plectorthis kankakensis.
Secondary plications few. added usually nearer the margin than the middle. Usually added antero-laterally rather than anteriorly or laterally. Scope upvalves.

"Ann Arbor.

Hobbs at Ann Arbor.

Leptaena ponderosa Hall.

Orthis costata. Hall,

Plectorthis dichotoma, lost?

Plectorthis jamesi. Hall, Plications triplicate along anterior half.

Plectorthis aequivalvis Hall,

Hebertella occidentalis

sinuata Hall

subjugata Hall

Dalmanella emacerata.

Rhynchotrema dentata. ~~[illegible]~~
J J Crooks Coll.

Platystrophia [illegible] Pl. 64 Fig 36. What number?

Rhynchotrema dentata

Pseudorthis Albers,

My species is not an Cenophyllum but a Ptychophyllum expansa, practically identical with Ptychophyllum patellatum, Schl.

What is Lepidophyllum lovenii Edw & Haime. Nicholson & Etheridge = my Polyorophe?

4 end. 0 ups. Heb. sinuata
Heb. occidentalis. 5B?
Heb. subjugata = 16 5A?
Raf. fimbrata.
1 ups Plect. jamesi.
Pl. nudida.
Orth. costata.
Pl. aequivalvis = middle of group in 4490.
Zyg. modesta.
Rhyn. dentatum

W. A. Parks - University of Toronto.

Librarian.
Legislative Library
Toronto.

Schuchert says
Rokomo = Bertie division of the Salina of N.Y.

Williams Brown & Earle
Reflectoscope
Philadelphia Pa.

Tully quadrangle.
Buffalo quadrangle.

Sp. vanuxemi — Manlius — Manlius Group

Fossils at Syracuse at Top Rock. Waterlime looks like Sandy shale & weathered app. thin bedded almost laminated layers in Manlius, near top, and scattered at lower levels; upper 1/3 Blue and black (carbonaceous) layers in lower 2/3

Leperditia scal. — Water lime at Round Lake. Round Lake argillaceous shales, magnesian grey dolomites

Sp. scalaris — Fossils toward the east. Cobbleskill, full of holes where corals were once. limestone grey dolomite.

Fossils toward west. Bertie similar lithology ideally without the holes

Salina

Lep. scalaris. Spirifer. — Leperditia in lower Spirifer. Camillus shales. gypsum 40-60 ft. thick. 25-40 ft thin bedded dolomitic limestone. 1/4 in to 2 in in thickness.

Syracuse salt group argillaceous shales. salt bed; grey to olive green shale.

Vernon shales red.

53-1 Porambonites uncella Dalman.
244-1 Stricklandinia uncella, Dalman. Middle Silurian, Pulkova. Near St Petersburg, Russia. Looks like Catazyga close to headi.

223-2 Atrypa imbricata Sowerby. Middle Sil. Stora-Carlsö, Sweden = like n. sp. of Nettelroth which is foundation of Cosgrove limest. = marginalis.

165-2. Dalmanella elegantula. Dalm. Distinctly more finely striated than Silurian D. testudinaria. Also very evenly striated.

134-2 Lepidophyllum lovenii. Edw. & Haime, Middle Sil. Wisby Gothland. Cylindrical.

134-1. Lepidophyllum lovenii Edw & Haime Wisby Gottland. Widely spreading Not even similar to 134-2

126-1 Ptychophyllum patellatum.

86-1 Halysites catenularia? confertus. Ed & H.

Cyathophyllum helianthoides, G.
441-1 One specimen crateriform
as in my Sil. & Dev. species.

41-1 Orthis elegantula, Dalm.
Lower Sil. Pulkowa St Petersb.
Should be Dal. testudinaria
Perhaps these different species.

34-1 and 2 Echinosphaerites
aurantium. Could this be
the Paracystis halli?

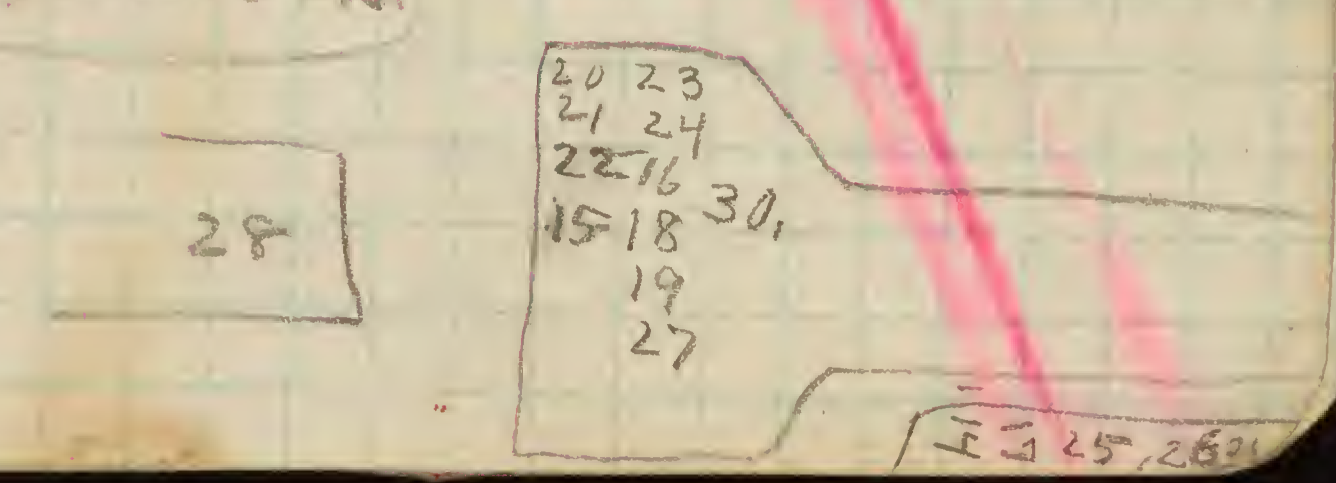
642-1. Protarca vetusta, type.
bottom of case.

11 = 843/7 Calymene callicephala Green
Middleville N.Y.
Strongly Nasute form well marked
Why is this not callicephala.
Borrow this specimen later
to find out.

12. = 693/1 Platystrophia biforata,
Only upper left hand speci-
men with 6 plications as a
fold is wanted.

13 = 697/17 Ref. alternata = nasuta
nasuta trimmed Pal. N.Y. Vol 1. Pl. 79. fig. 2a
& C. 4. alternata. Hall. Pulaski N.Y. Cypr. ornatus.
14. = 1350 Leptaena alternistriata. Hall.
Pl. 31B. fig 1 b.c.

+ Catazyga erratica
in museum from
Wayne & Monroe Co.



15 = 597-18. Septaena ponderosa. Pl. 31, fig. 11. bottom of case.

---

16 = 4441 Orthis costata.

---

17 = 4490 Plectorthis fissicosta.

---

18 = 4489 = Plectorthis jamesi.

---

19 = 4490 = Plectorthis aequivalvis = only the middle specimen of this group.

---

20 = 1342-1 Exterior others only unnoticed
21 " " Hebertella sinuata
22 " " occidentalis subjugata

---

23 Plect. sordida 1354
24 Plect. ella 1056-3

---

25 Dal. emacerata. 1339-2

---

26 Orthis [illegible] - not type

---

27 Rhy. dentata. 1358-1
28. Rhy. dentata J. J. Crooke Coll. Trav.

---

29. Zygos. recurvirostra. Hall Trenton.

30 Zyg. modesta Hall. 1356-1 = type.

---

31 Zyg modesta. Hall. 1356-1 Not type = 2000's

---

32 Same case as 31. - Catazyga headi. Opp. Three Rivers Canada = both headi and borealis = 1122-3.

---

very important.

Calymmene senaria
Hudson river group at Turin
Pal. N.Y. Vol 1. p. 238. pl 64.
843.13.
also 843.a 12. Pulaski, N.Y.
= Calymmene [illegible] almost certainly.

Stromatopora indianensis, n. sp.
Cin. Soc. of Nat. History, XV. p. 92.
There is a second specimen of Stromatopora in the U.S. National Museum, also without a name. This is a massive species, about 8 inches long, 6 inches wide and 5 inches high. The monticules are very numerous and quite large and prominent. The internal structure can not be ascertained, because of the presence of calcite in a crystallized form, but at one point the characteristic layers of Stromatopora can be observed. For this specimen the name S. indianensis is proposed, inasmuch as it seems to be undescribed. In its protuberant monticules it bears considerable resemblance to S. tuberculata, Nicholson, but that species is parasitic, while the present one is massive. Locality. — Near Connersville, Indiana, in the upper layers of the Cincinnati group. Associated with Beatricea nodulosa and Bellerophon bilobatus. Collected by A. C. Benedict.

Rhynchotrema capax. Type figured
= very obese form =

Goldfuss Petrefacta, Pterinea carinata. Vol. II. pg. 136. pl. 119, fig 8.

Haldemann's Hill S of West Alexandria

Hertzmann's hill in Millville pike from Hamilton to Lebanon fossils.

Four mile east of Oxford - across

Kemp's run near Middletown St.

Ley's Hill to Twin creek

Pleurotomaria bilix.

---

31 W. 8th Street.
Flat 4. Tunnel Drug Store

between
6-7. Sound in Race
between Canal & 12th

Dr. Nicholson description of Labechia huronensis, Ann & Mag. Nat. Hist. p. 145. 1886. p. 13,

Labechia montifera plainly precedes this description but not the

Mon Brit. Stromatoporoids p 32 first note, + pl. II figs 1 & 2. 1885

Museum of Geol. Surv. Labechia huronensis, Billings, 1865,

Cape Smyth, Lake Huron, Dr. R Bell collected 1859. Described 1865.

There is a specimen of this Labechia in the U.S. National Museum, also without a name. This is a massive species, about 8 inches long, 6 inches wide and 5 inches high. The monticules are very numerous and quite large and prominent. The internal structure can not be ascertained, because of the presence of calcite in a crystallized form, but at one point the characteristic layers of Stromatopora can be observed. In this

Lower arm Bunson, near [illegible] upper, near Bright's mill.

Scyphia digitata described here, for first time.

Geol. position not far above Character ty Lyopora abundant, since the latter are common further down stream

= 70 ft below Orth. aligned? for Character Lycopora.

Top of Eden here

Stony Point. Typical [illegible] at base of [illegible] Str. [illegible] in lower [illegible] of [illegible] common.

Clyffe Side = top of Middle Eden.

1 mi. above Woodville on Stony Lick

Lower H. insculpta with Calyptograptus in upper part, 1 mi. N. of Woodville, + crossing of pike over Stony Lick = Raf. loxolepta at base of Waynesville.

Edenton + Xenia road station,

a very good Dinorthis retrorsa.

Burnetts Mills Trochonema baeri
Rhynch. dentata,

= Near Camden.

Haldemann's Mill S of West Alexand

Hertsmann hill in Millville pike from Hamilton = Lebanon fossils.

Furnmile [illegible] of Oxford - retrorsa

Kemp's [illegible] near Middletown [illegible]

Ley's [illegible] Twin creek

1 mi. N of Collinsville on E side of creek
2 in up - Pl. lynx.
1 ft 10 in above creek - Leptaena rhomb.
2 ft above creek = Platystrophia lynx.
A = 3 ft above ck. = Pl. lynx
5 ft up. = Leptaena rhomboidalis.

2 ft. Nodular clay limestone ?
11 ft 6 in. interval. Bythopora + Raf. inaequivalva common.
Top of Dalmanella as far as exposure shows, but exp. is rather scanty here.
3½ ft interval. base, Din. retrorsa. excellent specimens. Hebertella insculpta but above this.

Top of wave marked limestone.
7 ft. 4 in. interval.
6 ft 8 in. interval with Dalmanella common.
6 ft 9 in interval.

Mt Auburn type of rock but not the real Auburn bed.
4 ft 6 in. interval.
Top of Pl. lynx.
9 in. interval.
Pl. lynx abundant. = A
For about 3 ft Pl. lynx and Leptaena rhomboidalis are associated.
The Arnheim section except an abbreviated.

lynx
A

Excellent exposure ¼ mi S of Collinsville, E side of 7 mile creek.

1 mi W. McGonigles
Plectambonites sericeus abundant
8 ft interval poorly exposed. Plectamb. ?
Leptaena rhomboidalis common.
½ ft. interval.
3½ ft. Hebertella insculpta + Rhy. perlamellosa and Rhyn. capax.
4 ft H. insculpta + Lept. rhomboidalis down to base.
11 ft interval
Raf. inaequivalva very abundant.
3 ft Slab with Dalmanella abundant at base. with Leptaena rhomb.
8 ft interval.
22 ft interval.
clay rock with Leptaena rhomboidalis + Dalm. jugosa.
15 ft interval.
11 ft interval.
Coarse limestone Dalmanella abundant = Waynesville still. 7–8 ft below insculpta. = + + ab.
5 ft Coarse limestone more or less marl above.
15 ft interval Din. retrorsa at about this level opposite large glacial boulder E of stream.
Retrorsa abundant but good specimens are rare.

Solomon's Run W of Philip Brown
Runs in Indian Creek 3½ mi farther on.

Summit

Waynesville base. Dalm. & Stroph.
Arnheim, Lept. & Rhy. capax (Platy.
26 ft at least, probably 30 ft limestone sect.
13 ft argillaceous limestone, lower
Arnheim
Fort Ancient, lynx at top &c.

Morrow.
Dalmanella [illegible] in species.
Zygospira [illegible] large.
Platystrophia lynx
Rafinesquina [illegible]
Plectorthis aequivalvis - [illegible]
[illegible] [illegible]
Dalmanites
Illaenus sp. 3/4 in. long
Bellerophon [illegible]

Heterospongia subramosa.
Canal apertures about 5 in 5 mm.
No oscula. Marion & Lindenberg.

Heterospongia Krausii.
Canal apertures 6 to 8 in 5 mm.
Oscula scarcely circular, 1.5 mm. at intervals of 8 to 20 mm. surrounded by radiating channels.
Lebanon. Ky.

Heterospongia aspera.
Very irregular growth, strongly undulated, lobate or subramose elongate masses, several inches in length.
Canal apertures often subquadrate about 7.- 8 in 5 mm. Pores regularly arranged and of more nearly equal size than in preceding species.
Mouths of canals in some areas frequently disposed in a radial manner, but no oscula in center. Marion & Lindenberg.

Hindia parva. Colby. McKinney.

Streptospongia labyrinthica.

Labyrinthically intertwining vertical lamellae, .3 m.m. thick, separated by tortuous, almost linear interspaces, with here & there an open space 1 m.m. in length. Vertical fracture shows that intertwining is produced by connecting processes on sides of laminae. Pores usually rounded in cross section are of very unequal size, and occur at frequent but irregular intervals. Numerous small punctures.
Lebanon. Ky.

1 pt of water
1 teaspoon soda
½ " salt
teaspoon glycerine or listerine
use warm

once a day,

Edward D Adams
71 Broadway,
N.Y.,

W. H. Beverly   County Surveyor
Mason Ky.

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C. alveolata
Str. rugosum

Birdseye fauna of New York — Birdseye limestone of Mohawk Valley

Calciferous

R P Whitfield. Bull. Am. Mus. N.H. (1891?) Vol. 3. p. 27.

So far as I can ascertain there is no New York locality known where the so-called Birdseye limestone beds are found in connection with beds containing Maclurea magna in such a condition as to prove satisfactorily that the Birdseye of the Mohawk Valley and the Black River region belongs stratigraphically above the true Chazy limestone; and one may ask if the limestones called Birdseye in the Mohawk Valley do not represent all the limestones on Lake Champlain which occur between those holding Ophileta complanata and those bearing the Stromatocerium rugosum and Columnaria alveolata, and recognized as equivalents of the Black River limestones, and if the Birdseye fauna, what there may be of it, does not properly belong below the Maclurea magna beds of Lake Champlain?

Black River. Columnaria alveolata. Stromatocerium rugosum
Birdseye.
Chazy   Maclurea magna.

Fort Cassin. Many cephalopods & gasteropods. = Quebec of Billings in large part!

Calciferous. Ophileta complanata typical

Potsdam

Ores. E. Brainard +
Prof. H. M. Seely,
Middlebury College, Vt.

J. C. C. Mayo
Paintsville, Ky,
Photo of coal vein.

0	Maysville
4.3	Summit
8.2	Marshall
11.1	Mill Creek
12.7	Helena (18)
15.5	Johnson
18.1	Kept. in (293)
19.6	Berring (365)
21.8	Curran (544)
24.9	Pleas. Vall.
27.4	Myers (42)
33.0	Carlisle (1450)
40.5	Hamilton (860)
42.6	Point
46.2	New Forest
49.5	Paris

Prof Kentucky State College 1012
A. M. Miller

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From 694 Broadway E & E R.

Carnegie Hall
Authors Club.
Chess "
between 56 + 57 th St.
56th St entrance.

Cyathophyllum lovenii, = my
Polyaxophe.

Tom Cummins
Street
1 Block E. Old P. O.