Done
Only a few Sections

E. O. Ulrich

Mississippi Valley Sections, 1903, Pt. 1

Thebes and Cape Girardeau visit, 1907.

Nb.6, 1903, 1907.

U. S. GEOLOGICAL SURVEY

TRAVERSE BOOK

9–904

INDEX

in 60' bluff of massive gray-buff ls. 300 yds. below dam. Dip here and hence rapid ↓ down river.

100' above these layers similar rocks (? fossils) these show again in 60' bluff of massive yellow-gray ls. 300 yds. lower down. Dip here and hence rapid ↓ down river.

100' above these layers similar rocks (? fossils) these show again in 60' bluff of massive yellow-gray li. 300 yds. lower down. Dip here and hence rapid ↑ down river.

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Notes on Missouri side of Mississippi River section from St. Louis southward to Commerce. Taken from B. F. Shumard's rept. in Mo. Geol. Survey, vols 1 & 2 - 1855-6.

In Jefferson Co. at Rock Creek Sulphur Spring Hills, just above mouth of Rock Creek, about 170 ft. high exhibit following section:

I.

Similar sections occur below Rock Creek.

60' Quarry Encrinital ls. ? Burlington

30' to 15' Reddish argill. ls. of granular texture; many partings Cyathaxonia; O. multicostata etc

15' Slope-covered. ? Sandstone

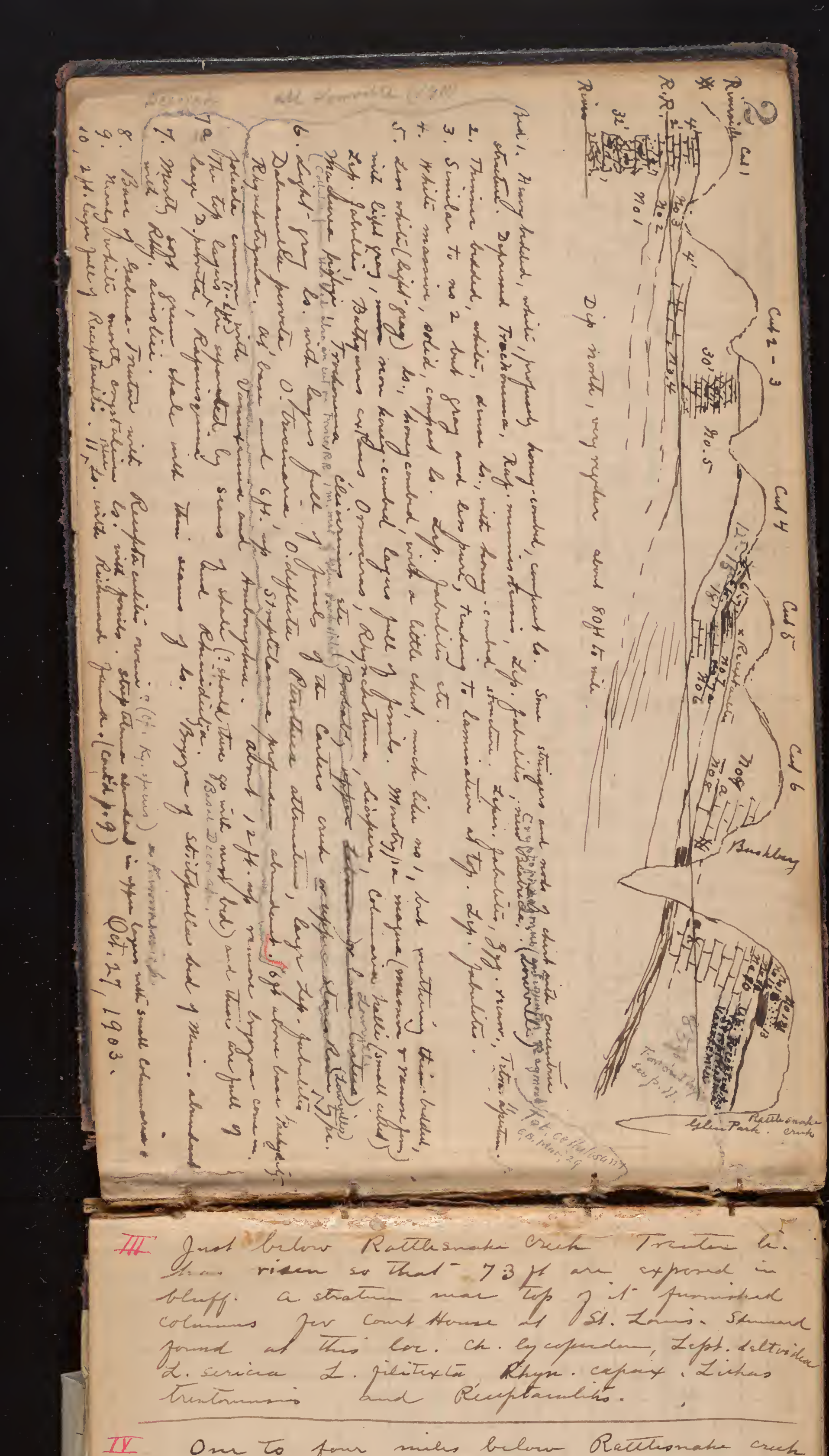
50' Perpendicular wall of heavy bedded yellowish & reddish Subcrystl. ls. with deep vertical fissures. Chonetes Lyoporina, Lept. Galeata, L. sericea, O. tetradactyla and Receptaculitis & Crow Encrinites at this locality.

Between this point & Selma the strata continue to rise until 1 m. below Hurricanemun where the Calciferous comes in. Between this point & Selma the Cal. rises till 150' are seen in hills 2 m. s. of Platten rock.

This section should be studied by means of row boat from mouth of Rock Creek To Selma. Probably this would be the best mode of studying the whole section from Rock Creek to Cape Girardeau & Thebes Ferry. — and cheapest too.

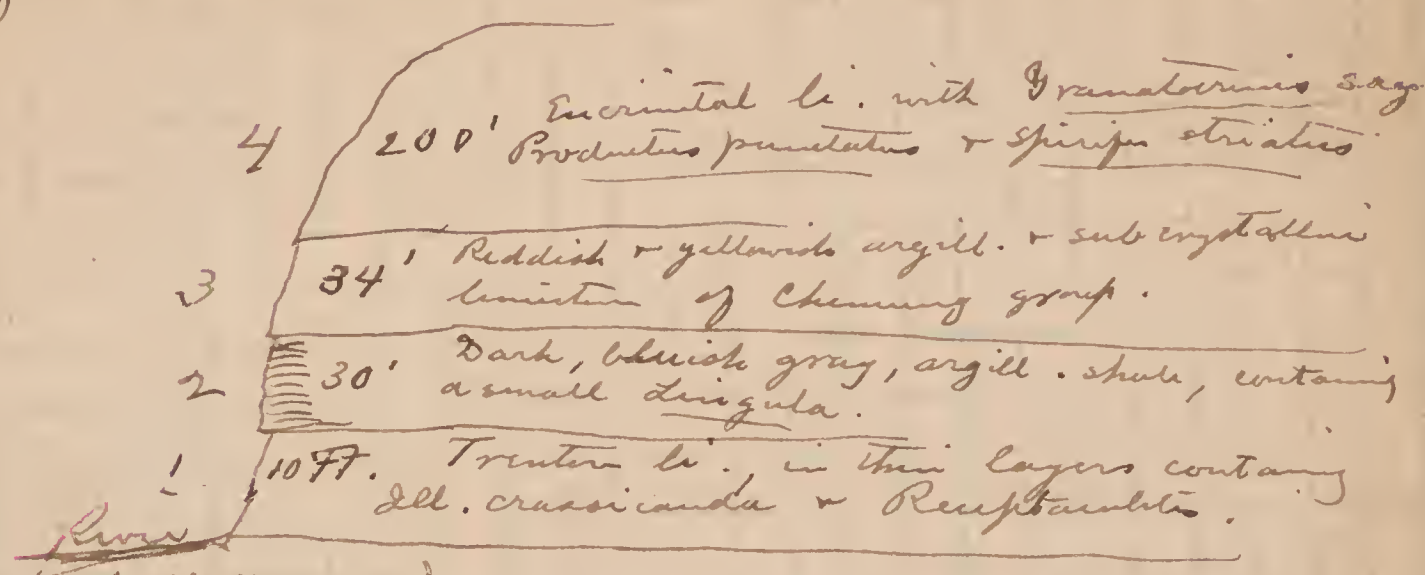
II. at Sulphur Spring the lower part of bluff contains 45 ft. of Crystalline (? Travertine) rock with Receptaculites. Over this come 7 ft. white & brown s.s. made up of moderately fine quartz grains loosely cemented. Then 8' compact yellow ls. & 25' red & white arenaceous compact ls. referred to Chemung. Total, 75 ft. Encrinital ls.

— about 1 m. below Platten — hills 130 ft. high. River shows here magnesio-calc. ls. fine grained, gray to buff. Full of fossils - Lower Helderberg. 100' above these layers similar rocks (? fossils) these show again in 60' bluff of massive yellow-gray ls. 300 yds. lower down. Dip to west and hence rapid & down river.


Cut 2 - 3
Cut 4
Cut 5
Cut 6
Rumsey
R.R.
No 1
No 2
No 3
No 4
No 5
No 6
No 7
No 8
Buckberry
Rattlesnake Creek
Glen Park
Rattlesnake Creek
Dip north, very regular about 80ft to mile.
Bed 1. Heavy bedded, white, pure, nearly homogeneous limestone. Dyeria Trachoma, Raf. similis. Dyeria lineata, white, dense Ls., 2. Thinner bedded, white, dense Ls., 3. Similar to no 2 but gray and Ls., 4. White massive, oolitic, compact Ls. Dyer. fabulina etc.
5. Ten white (light gray) Ls., thinly cavernous with a little shale, much like no 1, but mottling thin bedded, with a little shale (massive & massive) Ls., heavy cavernous, light gray, non-magnesian Ls. Monotrypa Ramosa, Orbiculina, Rhynchotrema, Leiorhynchus, Columnaria halli (small silted) Dalmanella Punctulifera (Rockaway) Leptaena Rhomboidalis (Rockaway) Zygospira modesta, Platystrophia biforata (Rockaway) Orthis Flabellulites, Strophomena Planumbona, Plectambonites sericea, Orthis Tricenaria, Orthis Testudinaria, Dalmanella Punctata, Orthis Platitexta attenuata, Rhynchotrema capax, Orthis Tricenaria, Strophomena Planumbona, Plectambonites sericea

VI

About 4 miles above Salt Point, & soon after bluffs approach River again on No. side, elevation of hills is 274' & shows following section.



(? Chattanooga)

No. 2 ^ is exposed in a ravine a couple of hundred yds distant from river. Underlies Chemung and overlies Trenton in a low ledge scarcely above water level. The shale is seen again on Establishment Creek 200 yds. above its mouth in a ledge 3 ft. high.

Archimedes li. ^ outcrops in hills near river (180' high) 2½ m. S. of Establishment Creek. a mile below hills 100 ft. high consist of alternations of quartzose S.S. & chert. Lower down the Arch. li. appears in perpendicular walls, facing river, presenting peculiar fluted appearance. ½ m. still lower the hills are 180' high & consist of sub-crystalline li. of a moderately coarse texture and light gray & blue.

VII Two miles above St. Genevieve strata dip N.E. & just above town are seen in massive beds with a layer of oolite. I am later public. he calls the latter St. Louis.

The Ferruginous (Cypress, Big Vines) S.S. in bluffs below St. Genevieve (but back from river) about 3 miles.

The St. Genevieve li. outcrops beneath S.S. but begins already between a mile & two miles below town; Shumard calls it a 2nd Archimedes li. See about Rock. & probably & it's being Trenton instead of Prairie. S. says the St. G. is seen 2 m. on Dll. side about 4 miles above Prairie du Rocher, where it is said to be full of Sponge Spicules.

On North Gabouri creek ^ (+ south) 3 miles above mouth the St. L. is said to be succeeded by a third Archimedes li.

At oolitic li. quarries on the "Plank Road" about 2 m. west of St. Genevieve the following section of St. L. li.

Whole St. L. estimated 150'-200'
St. Genevieve li. " 50'.
Fer. S.S. " 80'

50' slope with chert & traces of Lith. canadensis
60' light gray, sandy textured li. cont. Lithost. canadense Syringopora, Meloniles & Archimedes
20' white oolitic li. with Lithost. Archaeocidaris & P. carbonifera.

Kaskaskia li. taking up whole interval bet. Fer. S.S. & Coal Mrs. given at 200 ft.

Fer. S.S. said to contain locally pebbles of quartz & jasper.

IX Kaskaskia li. outcrops bank of river just above St. Marys & on the Saline river near its mouth. Very fossiliferous here.

1 m. above St. Marys, just above water, 15 ft. quartzose S.S., in thin layers, passing into gritstone and coarse conglomerate. pebbles up to size of hens egg. Above these S.S. is a slope of 25 ft., covered, & then the Archimedes li. with usual fossils.

No exposures for 20-25 miles on No. side.

The first comes in half mile above Baileys Landing in Perry co. Here hills are 150 ft. high, consisting entirely of S.S. closely like saccharoidal.

Farther down, couple hundred yds above landing, a low ledge of thin bedded, blue siliceous li. sets in. These are overlaid by similar but thicker beds. all dip 15° N.E. Fossils few; poor, (Encrinites & Atrypa.)

X ¼ m. below landing is a bluff 150 ft. high, of heavy bedded, gray magnesian li., compact & fine grained. near top contains Rhynch., O. subargenta? and S. filitexta? Fossils poor. ? Trenton.

about 1 m. below Baileys landing, Sec. 11, T. 35, R. 12 E, hills 130 ft. high. River shows here magnesio-calc. shaly li. fine grained, gray to buff. Full of fossils - Lower Helderberg. 100' above these layers similar rocks (? fossils) these shown again in 60' bluff of massive yellow-gray li. 300 yds. lower down. Dip here and hence rapid & down river.

About 4 miles above Salt Point, & soon after bluffs approach River ass

VII

Good Chester fossil localities in hills 2-4 miles below B. Ldg. Hills 200 ft. high.
Strata horizontal, then (4 m.) dipping S. bringing S.S down till it makes up nearly whole hill.
(What S.S. is this?) (? syncline)
Chester Li. begins to rise again very soon, till they occupy whole hill. They continue with excellent fossil exposures to Brazos Bottom.

At Wittenburg, bluffs are 150' high. Lower 2/3 with ledges of gray, highly inclined, Li. containing Productus, Echinoderms and fish teeth occasionally. Strata resemble those just above St. Genevieve. Up. third of hills covered with soil & loose masses of SS.
Nearly opposite this is Devils Bake Oven (visit it for Dw.) A isolated
XII mass of rock, 60' high, with large hole on south face.
Opposite the oven, on No. side, bluffs 120', massive thin bedded magnesian calc. rock similar to Helderbergian at Bailey Ldg.

The Grand Tower a mass of rock dipping S.E. 25°, is supposed to be lower than Bake Oven (i.e. Helderberg)

About ½ m. below Tower, near middle of river is a huge mass of chert, rising a few feet above water level. What is this?

The Chalk Bluffs are on hills 75-200 ft. high. Occasional
XIII exposures of white siliceous clay, filled with fragments of Up. Sil. chert. (? Residual)

From 2 m. above to 2 m. below Birmingham, Helderbergian expand at base of hills for 10'-50'.
XIV Li. cherty, chert nodular. Fossils said to be abundant only at Birmingham.
3½ miles below Bir. same rocks in perpendicular bluff 70' high. Lower pt. chert & li. chert in layers 1"-1 ft. Upper layers ? hydraulic and contain beautiful Conularia
Similar rocks continue to Bainbridge.
No exposures on No. side for 6 miles.

One & a half to 2 m. above Cape Girardeau the limestone of that name sets in. An exposure of
XV. 40 ft. occurs here. - Bluish-gray li., layers 2"-6" vertically jointed. Rock compact, conchoidal fracture. Weathered surface often covered with film of oxide of iron. In some portions of mass fossils very abundant.

Cyphaspis	Homocrinus	Atrypa
Acidaspis	Glyptocrinus	Leptaena
Proetus	Tentaculites incurvus	Orthis
Encrinurus	Protaster	Pleurotomaria
Chirurus	& other crinoids.	Turbo

At the Cape, Ordovician rocks again well exposed.

4	10'	Fine grained, argill. S.S., of light grey. brown color
3	60'	White & pinkish white, massive cryst. li., fine texture, containing fossils. Cape Girardeau marble.
2	35'	White cryst. li. in moderately heavy beds. Illan. crassicauda Lept. alternata. etc.
1	2'	Blue calciferous li. highly fossiliferous Full of ch. lycop. Lep. Juliensis & Orthis subaequata.

No 3 comes in quarries about ¾ m. from river & on river bank in front of convent.

Rocks form low ledges along river for ½ m. below town.

Then comes bottom land for 5 miles to a small creek.

Just below mouth of this creek Ordov. again expand in bold escarpments 55' high.
The lower (no 1) layer is 15 ft. thick & crowded
XVI with good fossils. They dip down river & out in 3 or 400 yds. In upper most layers of marble S. found Receptaculites and good specimens of sculptured crinoid (? Camarocrinites) (Are there Tertiary S.S. & clays over them here?)

Grand Chain XVII below Cairo.

Buckberg ss.

Glen Park ls.

Kittanning shale

Ferndale ls.

Basal Pratt sandstone

Kittanning shale ls.

70 ft.

(For finds under the Ferndale see p. 2)

Section at Bentz's Quarry
Glen Park, Pa. & Sulphur Springs, Pa.
Oct. 30, 1903.

Beds b c & d probably referred to Kittanning shales on account of the Fossiliferous ironstone a. When made greater by excavation generally of ironstone & coaly shale from the hard sandstone at St. Peter's ls. near by, was noticed; & (a) is more normal thickness of Kittanning shale that also does, when fossil, most generally. F shows the thickness of the Ferndale ls. & (b; F) is to be considered that generally in Tennessee & elsewhere.

Section at Bentz's Quarry Glen Park Station, Pa.
Oct. 30, 1903

Mixed fauna plastered on 2 layers or in a & b. more particularly in a.

Small bluish phosphatic pebbles occur in d, c & e. g. gray ones in a & b & c.

Study this page more carefully

About 4 miles above Salt Point, & soon after

8

Oct. 30/99

Section at Quarry Glen Park Cabin, Mo.

Bed 13

Bed 12

Bed 11

Bed 10

Mineral gumma plentiful in 2' layer or in a & b, more particularly in a.

Small bluish phosphatic pebbles occur in d, e & f & g, grey ones in a b c.

Fig. 3 Rich. b.

Study this page more carefully

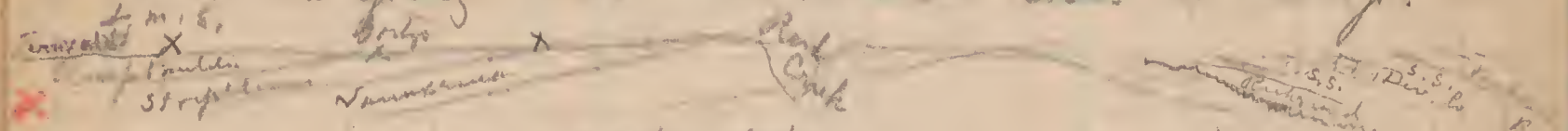
Rice Mc Clane / Sumpter Valley Mine

6

About 4 miles above Salt Point, & soon after

10

Following the section up river Richmond seems to continue to rest on Valmont-ian bed, until small cut just south of Rock Creek where I failed to recognize it. The contact is not a very obvious line until you examine closely when it is usually seen to be formed by a rusty, indurated clay (phosphatic?) seam 0 – 2 or 3 inches thick. The fossils mark the boundary sharply enough. It appears that in going north the Tranquille loses at the top.



At top of Quarry, ¼ mi S. of Glen Park, Richmond was just seen, it rests on a 2 ft. layer filled with Receptaculites. Then as mentioned at Glen Park quarries, the Shepherdiana layer, being at the top. 200 yds. further north, the Nanaimoensis layer is at the top and this continues there for ⅔ mile. At and just south of Rock Creek it was not recognized, nor was it seen in next 400 or 500 yds. further north, i.e. just no north edge of town Sulphur Springs. But a few inches of the Nanaimoensis bed was left just south of S. Spring station.

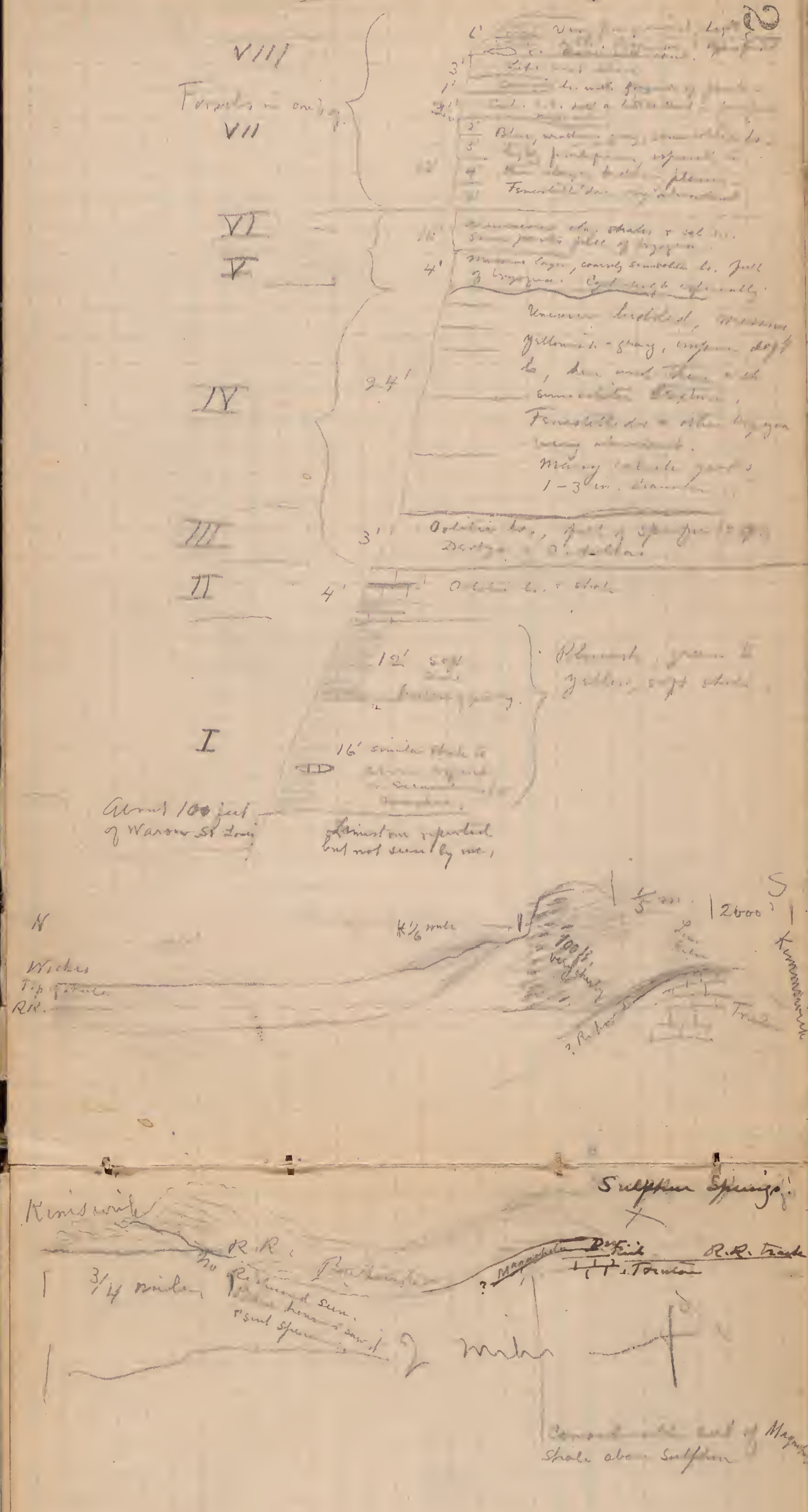
While neither Richmond nor Glen Park ls. was recognized just south of Rock creek, just north of Sulphur Springs both were seen. The Richmond there carries as 10'ft. and probably a little shale over it. The beds over the Richmond were disturbed and not clearly determined but probably are as in the section.

The Dev. (Miss. Glen Park ls.) orbicular zone could be traced and a record fossil carefully searched. It is interesting to note the change in little over a mile of the Dev. ls. from a blue ls. at Selby to a white, fine oolite at Sulphur Springs.

(Bassberg)
a bed of ls. in mid-Devonian, 2' in thickness, 5-6 m. thick at the point

A shale higher bed, with Archaeocrinus, and 8-10 ft. ls. & Separated from the underlying Richmond - Receptaculites zone by an unseen breadth, occurs at Cape Verde (see p. 13) and Nanoose. It is unrecognizable anywhere by the 20 ft. bed of limestone.

About 4 miles above Salt Point, & soon after



Noticed from car window, Memphis & St. L. branch of Frisco, Traj St. Louis & St. Genevieve.

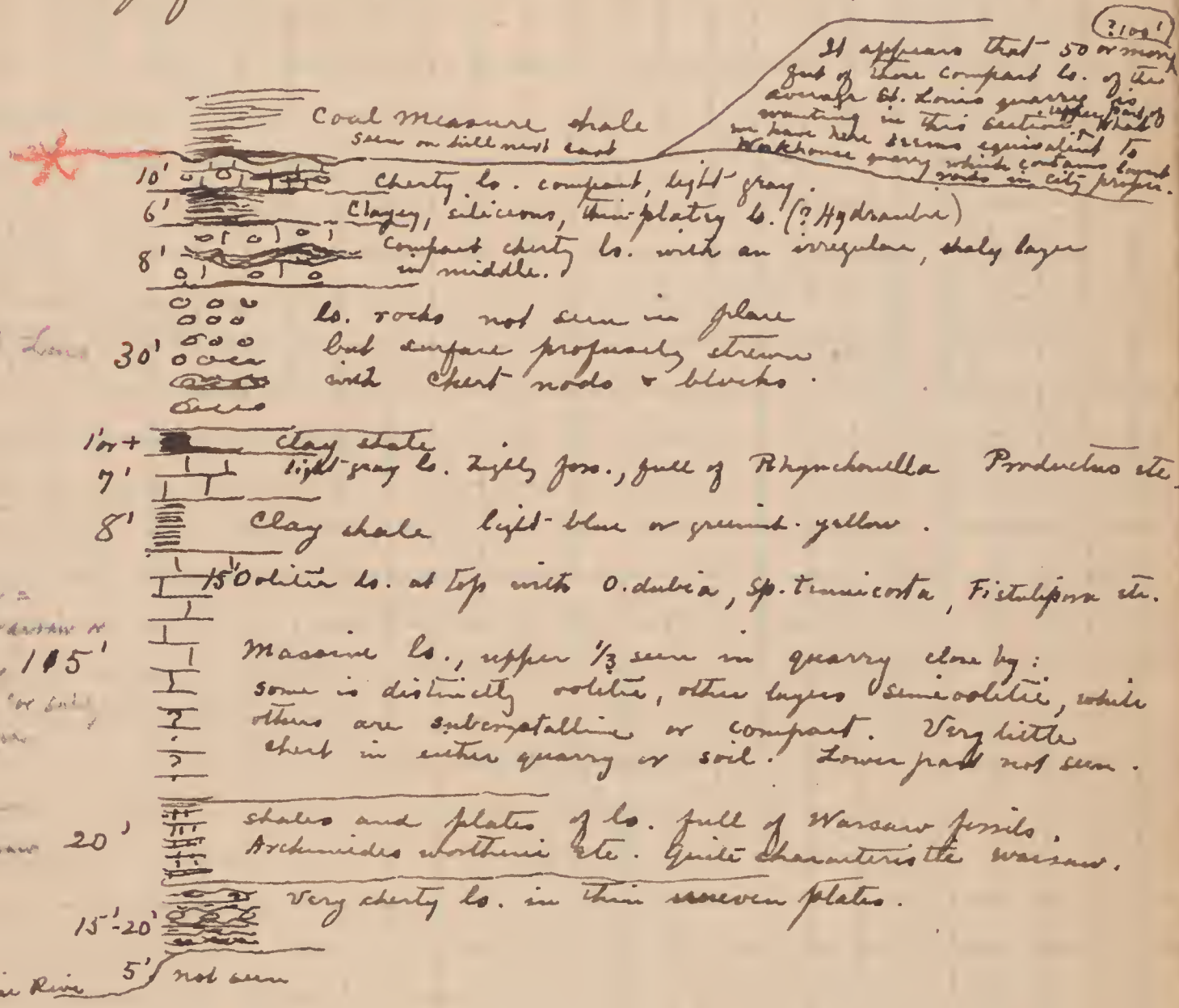
Red shaly beds (Fern Glen) at base of Missouri well shown at number of points between Brickey (where Kenosha outcrops) and Establishment (Creek) Especially well shown in bluff of creek, but not, apparently easily accessible.

South of Establishment long cuts along bluff with Niagara shaly rocks beneath St. Louis. There may be Warsaw & Wicker and Columbia Ill. type.

About 4 miles above Salt Point, r soon after

Approximate (in part) section at Meramac Highlands

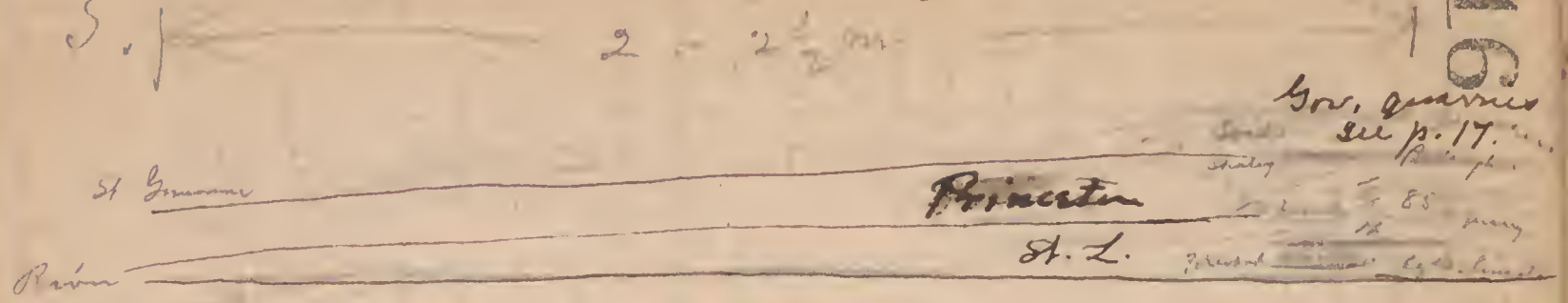
Top of hill to Meramac River.



The quarry is a large one and formerly ~~sawed~~ dressed the ls but is not now in operation. Machinery is being used to generate electricity for Meramac Highlands park.

About 4 miles above Salt Point & soon after
Vicinity of Ste. Genevieve, Mo.

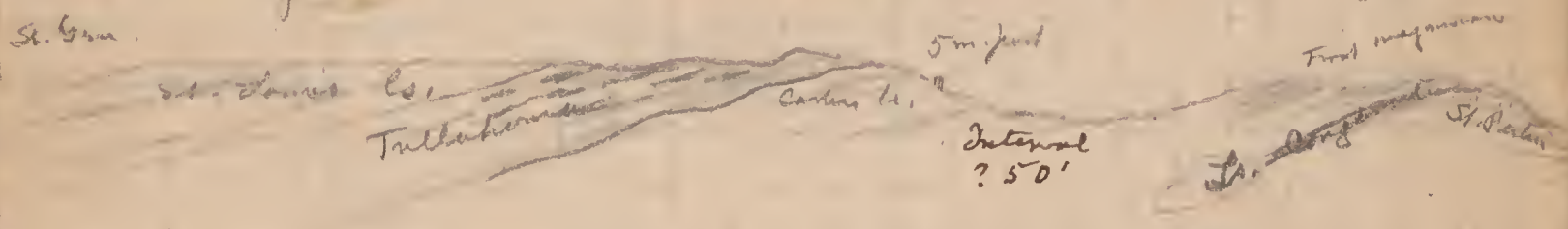
16



2 m. West of town (to Ste Gen) at lower falls on Plench Road about 42 ft of Dolomite Ls., the lower 20ft very white the upper slightly gray-Very little chert Unsatisfactory fossils, chiefly Lith. canadense, the latter especially upper part. above dolomite cherty Ls. to top of hill. Same section Outcrops — Rocks rise westward northward from Ste Gen.

Nov. 3 -

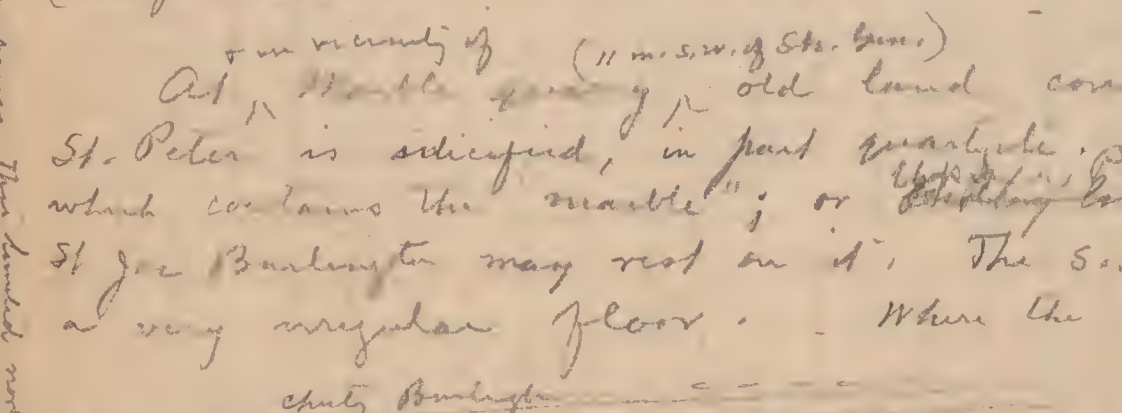
Going S.W. from St. Genevieve on Fredericktown Road, first 3 miles is all St. Louis. There some of finer cherty beds at top which may be Tullahoma. These continue To top of hill 100 yds east of 5th mile post, where they give - abruptly - place to upper Cotton Ls. which continues to base of hill. After crossing creek ½ m. upper Ls. mag. set in



and a mile or more further St. Peter Ls. is first seen Base of 1st mag. in a Ls. complex. St. Peter as over 50 ft. thick, 1st mag. in a thin-bedded rock, apparently not over 50 ft. It may be equivalent to Manufacturers Ls. (No fossils seen) but included in (lower) Joint system + bedding with St. Peter Sandstone.

At quarry (1½ m. S.W. of Ste. Gen.)

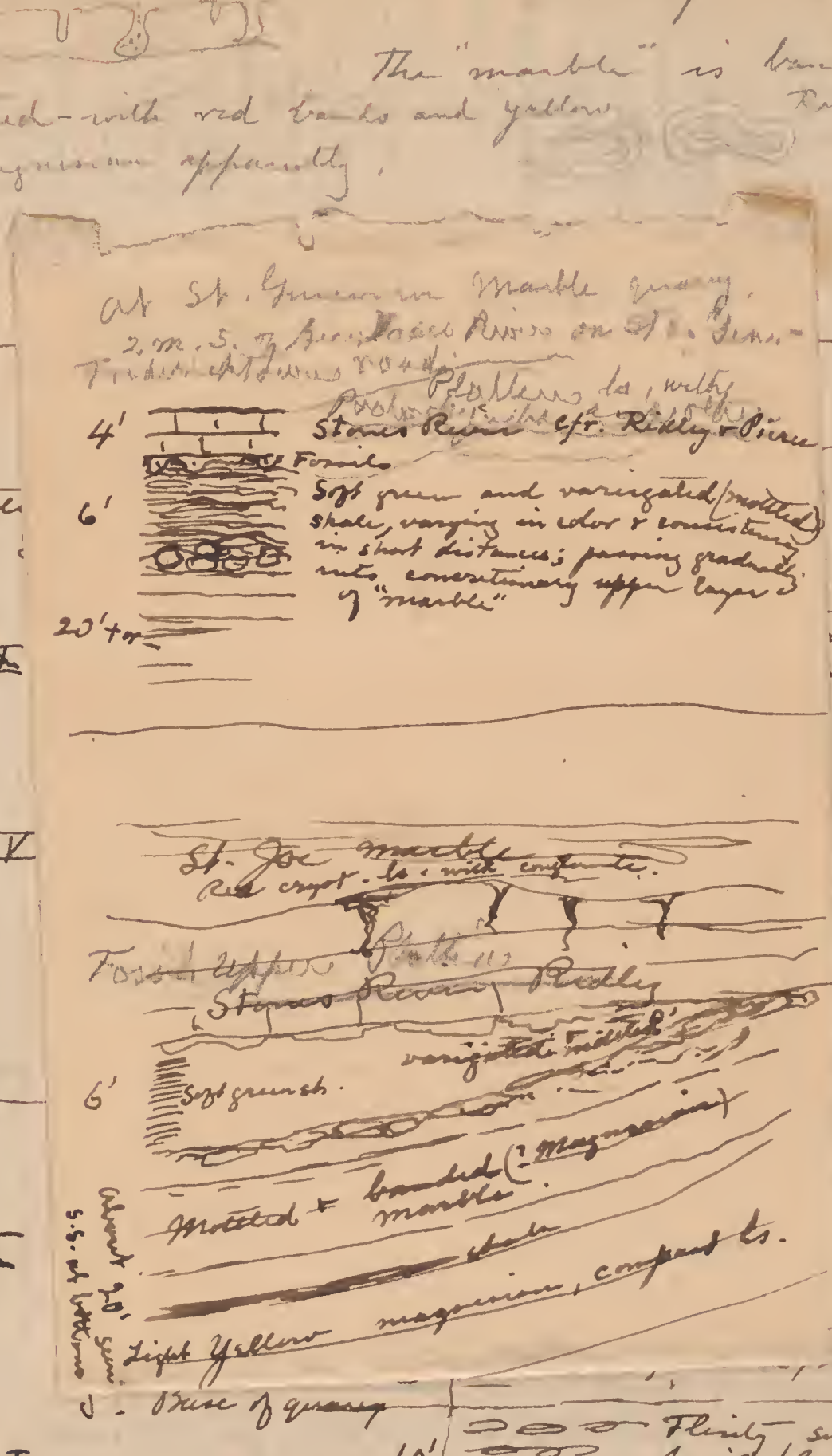
At Marble quarry old tunnel conditions are nearly shown St. Peter is subjacent, in part quarried. Over it is 1st mag. which contains the marble"; or [illegible] Ls. (1st mag.) Ridley or St Joe Burlington may rest on it. The S.S. normally formed a very irregular floor. Where the St Joe rests on marble



it is fissured and the fissures filled with coarse, red Plattin Ls., & the surface flabbered with same material. The

also is similarly eroded & fissured.

The "marble" is banded commonly — or mottled — with red Ls and yellow Rather compact and magnesian apparently.



Section of government quarry
Little Rock Landing
above Ste. Genevieve, Mo.

17

About 4 miles al. . S.11 R. .
Vicinity of Ste. Genevieve, Mo.

S. | 2 m. N. 1½° E.

Ste. Genevieve — see p. 17.

St Genevieve — Princeton — St. L.

Rivière

2 m. West of town (N. Ste. Gen.) at lime kilns on Plank Road about 42 ft. of Dolomite ls., the lower 20 ft. very white the upper slightly gray. Unidentified fossils, chiefly Lith. ramulosus, the latter especially in upper part. Above dolomite cherty ls. to top of hill. Strata seen in section — Rocks rise westward from St Gen.

Nov. 3 -

Going S.W. from St Genevieve on Fredericktown Road, first 3 miles is all St. Louis. Then some of former, chiefly kinds at last which may be Tullahoma. These continue To top of hill 100 yds east of 5 mile post, where they give - abruptly - place to upper Cariou ls. which continues to base of hill. After crossing creek ½ m. up, 1st. mag. ledge on N. side.

St Gen.

St. Louis ls. — Tullahoma — Cariou ls. — 5m. post — Fred. Magnesian — St. Peter — Interval ? 50'

and a mile or more further St. Peter is in first ledge seen. Base of 1st mag. is a ls. conglo. St. Peter is over 50 ft. thick, 1st mag. is a thin-bedded rock, apparently not over 50 ft. It may be connected to Manufacture ls. (No fossils seen) but studied it 'lower,) : Joints in + building with St. Peter stone.

At Marble quarry (1½ m. S.W. of Ste. Gen.) old lime conditions are nearly those St. Peter is siliceous, in part quartzite. Over it is 1st mag. which contains the "marble"; or Stones River ls. (Stones River or St Joe Burlington may rest on it. The S.S. naturally formed a very irregular floor. Where the St Joe rests on marble

St. Joe ls. — Chaty Burlington — St. Joe ls. — Ridley 1st mag. — St. Peter

it is fissured and the fissures filled with compact red Plattin ls., & the surface glaciated with same material. The Plattin also is similarly eroded & fissured.

The "marble" is banded commercially — or mottled — with red bands and yellow and magnesian apparently. Rather compact

At St. Genevieve Marble quarry.
2 m. S. of Ste. Gen. on road to Fredericktown road.

Plattin ls. with Stones River cf. Ridley + Pierre Fossils

4'
6' Soft green and variegated (mottled) shale, varying in color & consistency in short distances; passing gradually into conventionary upper layer of "marble"
20' + or -

St. Joe marble
Red crypt. ls. with encrusts.
Fossil Upper Stones River Ridley
Bed III
6' Soft grunch.
variegated mottled
Bed II
mottled + banded (? Magnesian) marble.
Light Yellow magnesian, compact ls.
Bed I
St. Peter S.S.

Almost S.S. at bottom with lime

Simple structure shown by all kinds of lime of excavation - Limby material dipping slope by all kinds of lime of excavation -

Sec. 2 T. 35 N. R. 2 E. 4th P.M.
Bed IV
Bed III
Bed II
Bed I

2 m. N.
...ds textured with Bellefont...
...rich gray, sandy d ls. with a considerably part. ...ver 16 ft. having ...oolitic structure. ...ls practically ...ntaining.
...+ nearly solid ls. quarries.
...fine grained ...gray ls., ...black. With ...ls.
...ed, gray ls.
...cryst. + compact

17

Abov. 11

Vicinity of St. Genevieve, Mo.

S. [illegible] 2 - 2½ m.

Gov. quarries
see p. 17.

St Genevieve

Princeton

Rève

St. L.

2 m. West of town (St Gen) at limekilns on Plank Road about 42 ft above Dolitic ls., the lower 20 ft very white while the upper slightly gray - ^ Unsatisfactory fossils, chiefly Lith. canadense, the latter especially upper part. Above dolitic cherty ls. to top of hill. Section — Rocks rise westward northward from St Gen.

Nov. 3 -

Going S.W. from St. Genevieve, on Trudeichtown Road, first 3 miles is all St. Louis. There some of these cherty beds at top which may be Tullahoma. These continue To top of hill 100 yds east of 5th mile post, where they give - abruptly - place to upper Carters ls. which continues to brow of hill. After crossing creek ½ m. up, 1st. mag. sets on St. Gen.

St. Louis ls.

5 m. first

Tullahoma

Carters ls.

Interval ? 50'

First magnesian

St. Peter

and a mile or more further St. Peter ls. is first seen. Base of 1st mag. is a ls. conglo. St. Peter is over 50 ft. thick, thin-bedded rock, apparently not over 5 [illegible] (No fossils)

St. Peter S.S.

At 11 m. St. Peter ls. which contains St Jos Barite in a very [illegible]

Rolla 1st Mag St. P.

it is ls.) & the

— or mottled and mag

Section at Government Quarry 2 m. N. of St. Genevieve, Mo.

Loess.

Bed V — 5' — Slightly sandy textured shaly ls. with Bellerophon

Bed IV — 30' — Yellowish gray, sandy textured ls. with a [illegible] considerably part of lower 16 ft. having semi oolitic structure. Fossils practically wanting.

16'

Bed III — 2'-5' — Argil. ls. & shaly s. & nearly solid ls. [illegible] mass of quarries.

6 — Subcryst. ls.

Bed II — 20'-22' — Flinty, fine grained, bluish-gray ls., chert black. With fossils.

6' — Heavy bedded, hard, gray ls.

Base of quarry

Bed I — 10' — Flinty subcryst. & compact fossil. ls.

Rolla Limestone

? Princeton or St. Genevieve ? St. Louis

Section of Government quarry Little Rock Landing about 2 m. S. of St. Genevieve, Mo.

17

1903 — [illegible]

[illegible] edge [illegible] may be known at times but more often are [illegible]. They consist of [illegible] ft. [illegible] supplied by [illegible] Fossils are [illegible] that may be [illegible].

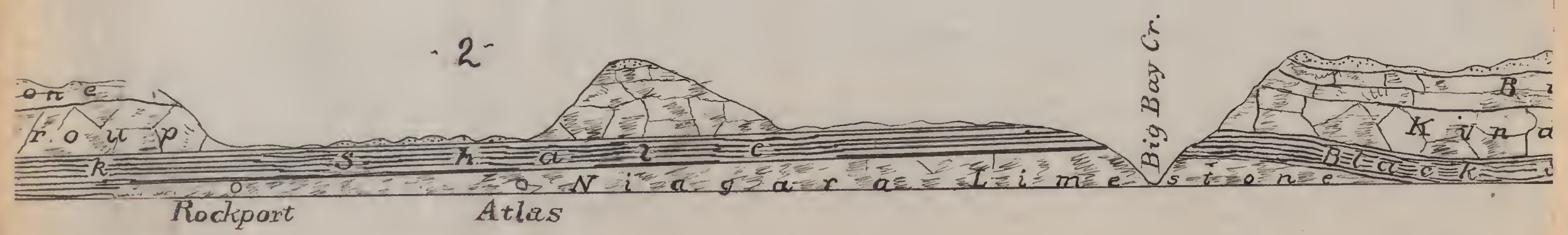
From base [illegible] m. s. To 3½ m. s. Lo. bluff [illegible] oolitic rather than bedded and mostly obscure [illegible] lo. over somewhat shaly, sometimes massive, rather compact lo. that contains numerous Sp. Lendyi in bedding planes. Contact between upper & lower bed generally somewhat uneven. The Oolite contains abundance of Sphaeroma fossa and doubtless equals lower part of Pronville. At 2½ m. sandstone caps oolite but the outcrop was not satisfactory. It may be lower part of Cypress s.s. Somewhat farther s. however, (and ½ mile) a strongly calcareous s.s. comes in over the oolite. This doubtless represents the calcareous s.s. of Pronville. It is at least 25 ft. thick and in lower part contains layers calcareous enough to be full of fossils. Appears at first merges into oolites below but exposures not satisfactory at this point. Over cal. s.s. a few boulders of chert. Lo was observed but did not see the layer in place. It is not known whether Lo. of Ky.

The oolite is 25 or 30 ft. thick. The measures lie nearly horizontal with a slight dip s, which at first carries s. towards Cypress s.s. to level of road. Lower part of Cypress not seen - all sand at Richardson's quarry, which penetrated rather

See p. 19.

for Ewds bridge at St L. 32 ft. - with 5 ft. above hills and 27 ft. measure - as shown in Quarry (Kinnaird) Probably as much more below and decomposed sand above [illegible] may give a [illegible] thickness of 100 ft.


-1-
McDonald's Cr.
Mountain
Kinderhook Group
Kinderhook

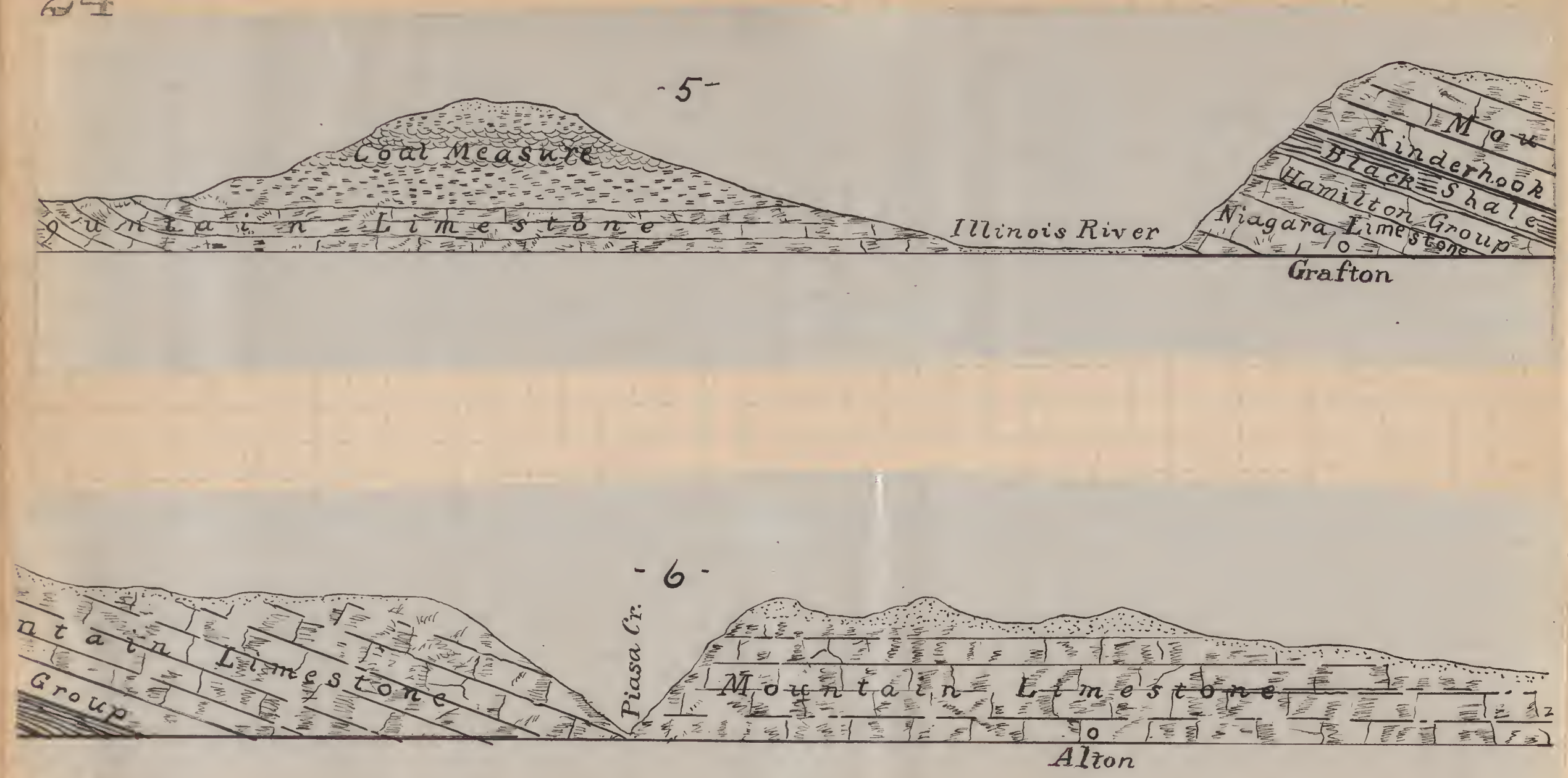

-2-
Big Bay Cr.
Rockport
Atlas

- 3 -

Hamburg

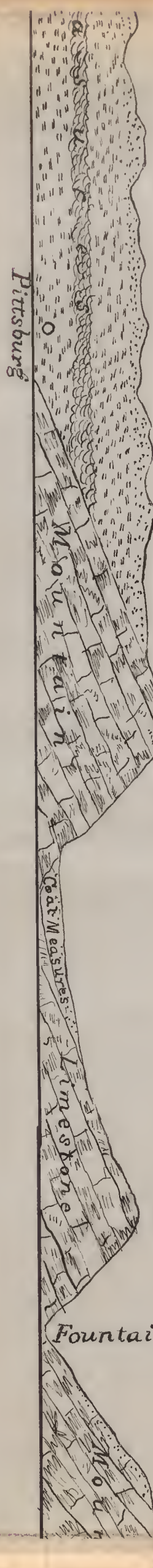
- 4 -

Gilead

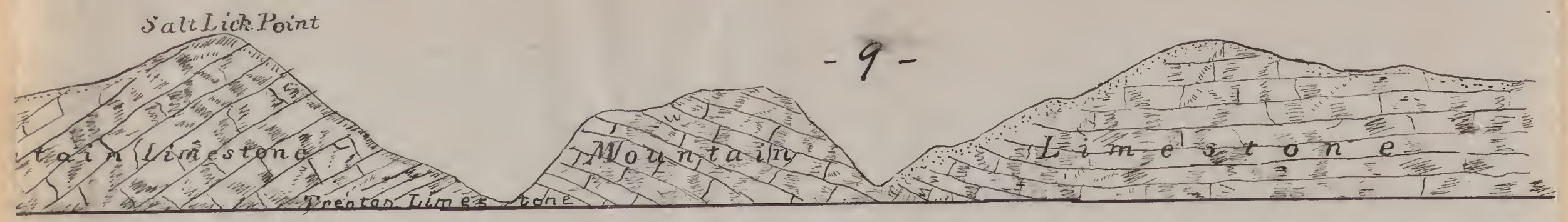

-5-
Coal Measure
Illinois River
Mo
Kinderhook
Black Shale
Hamilton Group
Niagara Limestone
Grafton
-6-
Piasa Cr.
Mountain Limestone
Group
Alton

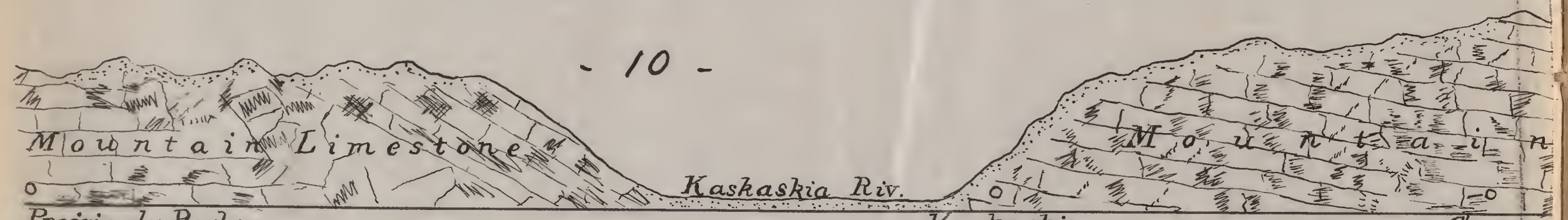

Alton
Mountain Limestone
Wood Cr.
Coal Measures
Kahokia Cr.
Caseyville
Mo.

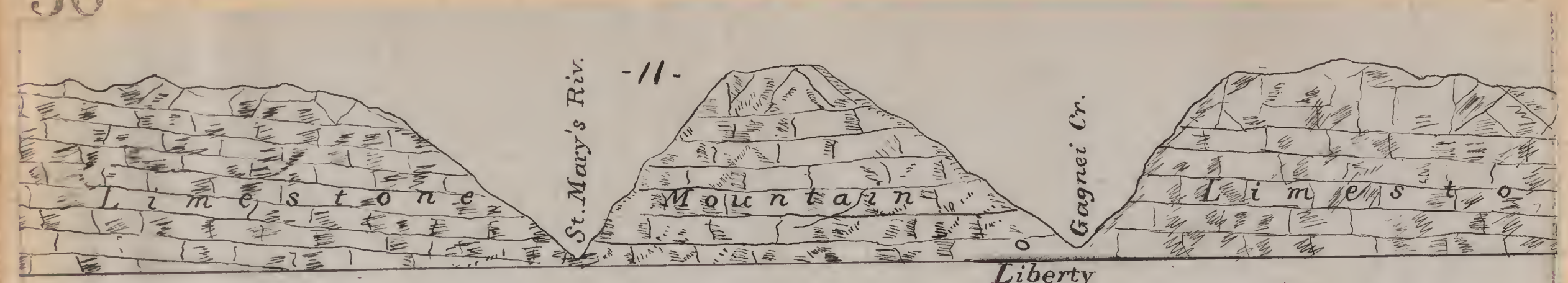
- 7 -


Pittsburg
Mountain Limestone
Coal Measures
Limestone
Fountain Cr.
Mo.

- 8 -


Salt Lick Point
- 9 -
Mountain Limestone
Mountain
Limestone
Prenton Limestone

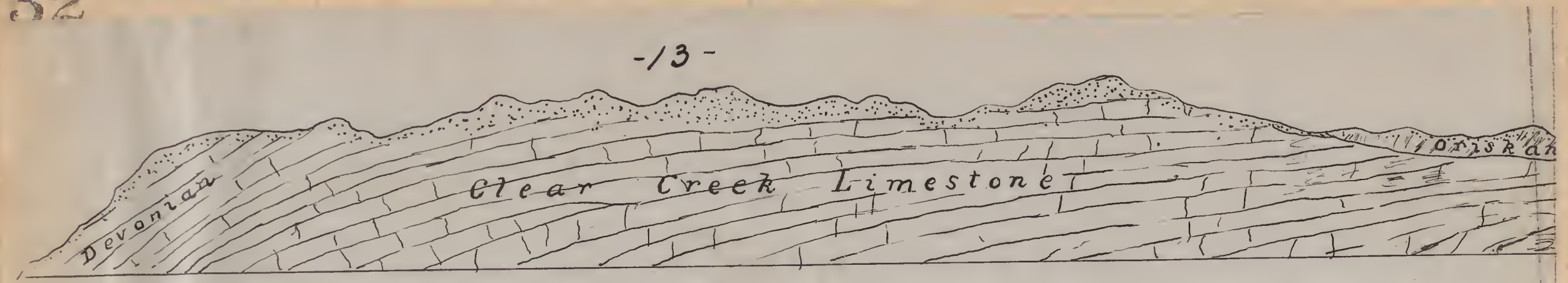

- 10 -
Mountain Limestone
Kaskaskia Riv.
Mountain
Prairie du Rocher
Kaskaskia
Chester



XII

1 inch = 3 miles.

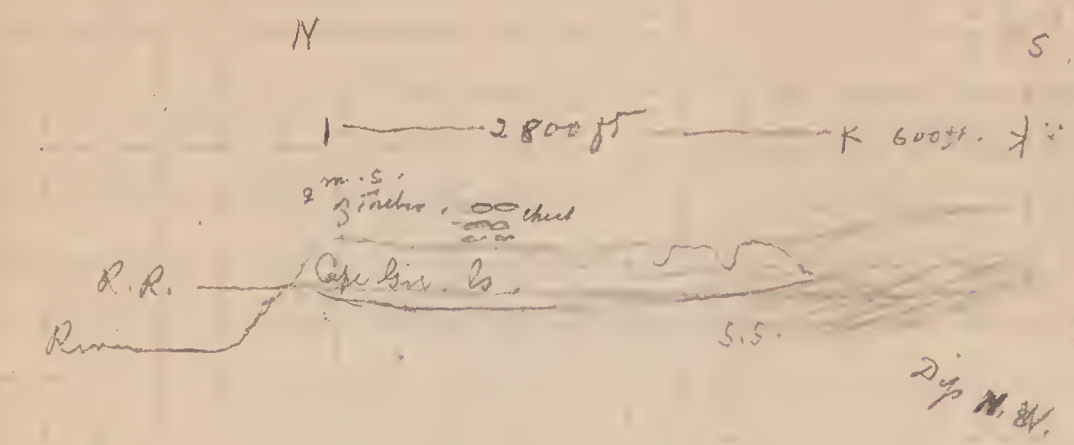
-13-



-14-

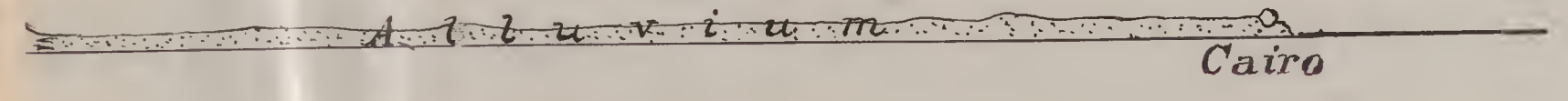
See p. 44

Beginning
2 m. South of Thebes & Thence 3400 ft.



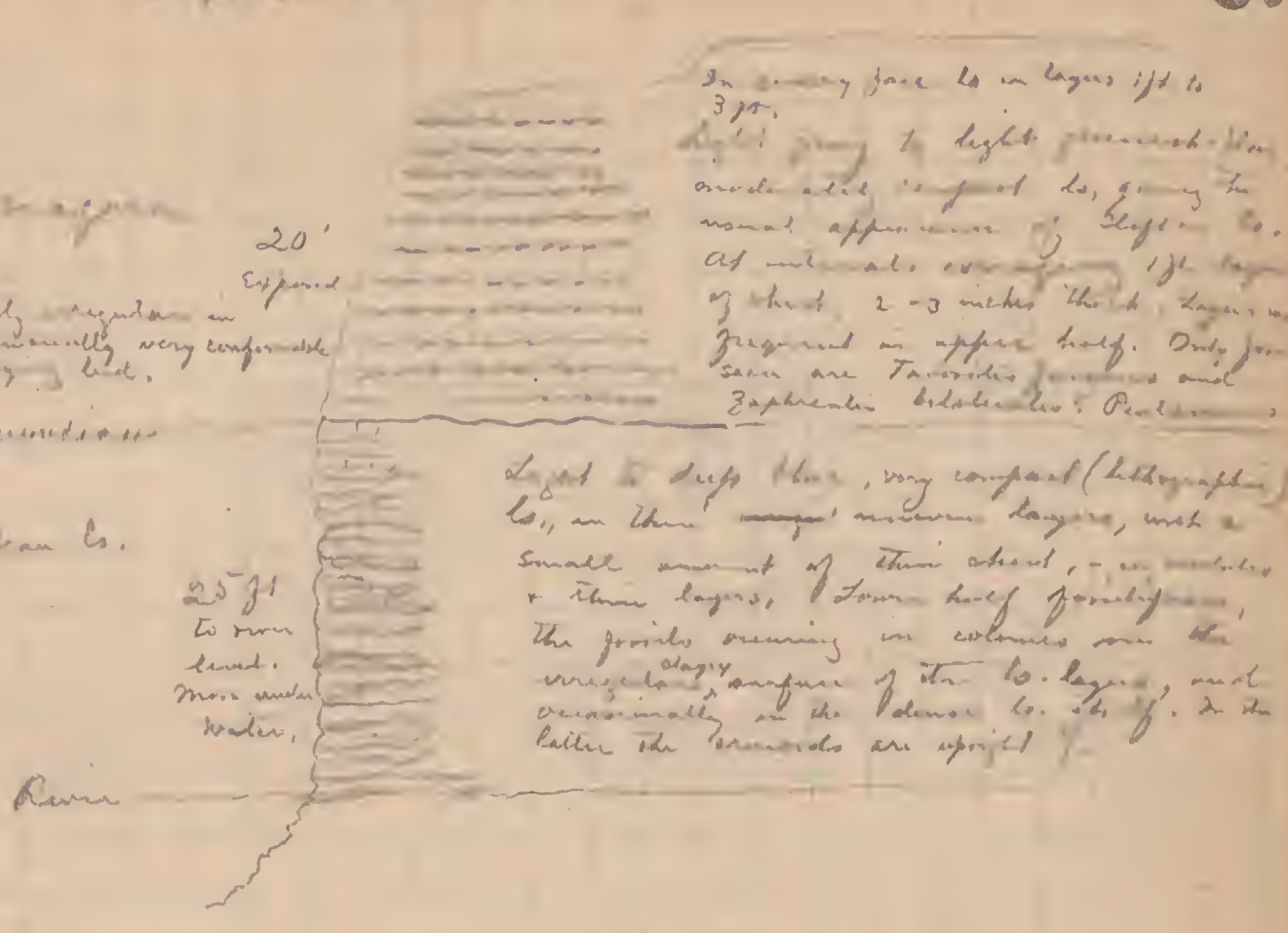
See p 45

-15-



38

1903, Nov 6. Point Duff [illegible]



Nov. 7 Notes from Cadoxton-der, top Cape to Bailey's Ld 8 (Rondebosch)
7 m. (South m. 17 from Cape) the Clayton is (Burke, Killiecrankie rounds)
Sandstone. Here it is exposed about 10 ft. thick, but possibly it and the outcrop may thicken by consolidation of 2 or three layers of the 4 m. section. The face is covered about is much less of sandstone showing distinctly, there no work proceeds in the dock. The rock appears also to be more clayey than where seen 2 m. above Cape.

In region between 4 and 5 m. above Cape the Bs. (Cape Point, Bs) is again seen 60 ft. thick, having more apparent, including end of eight 2 3/4 m. above Cape. Then comes a S.S. like that at Cape, after removal of a mile or so, by the Clayton 40 above Base.

P.R.

Continued p. 39.

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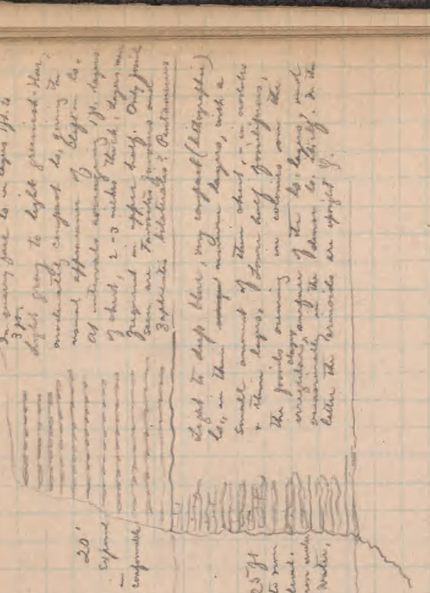
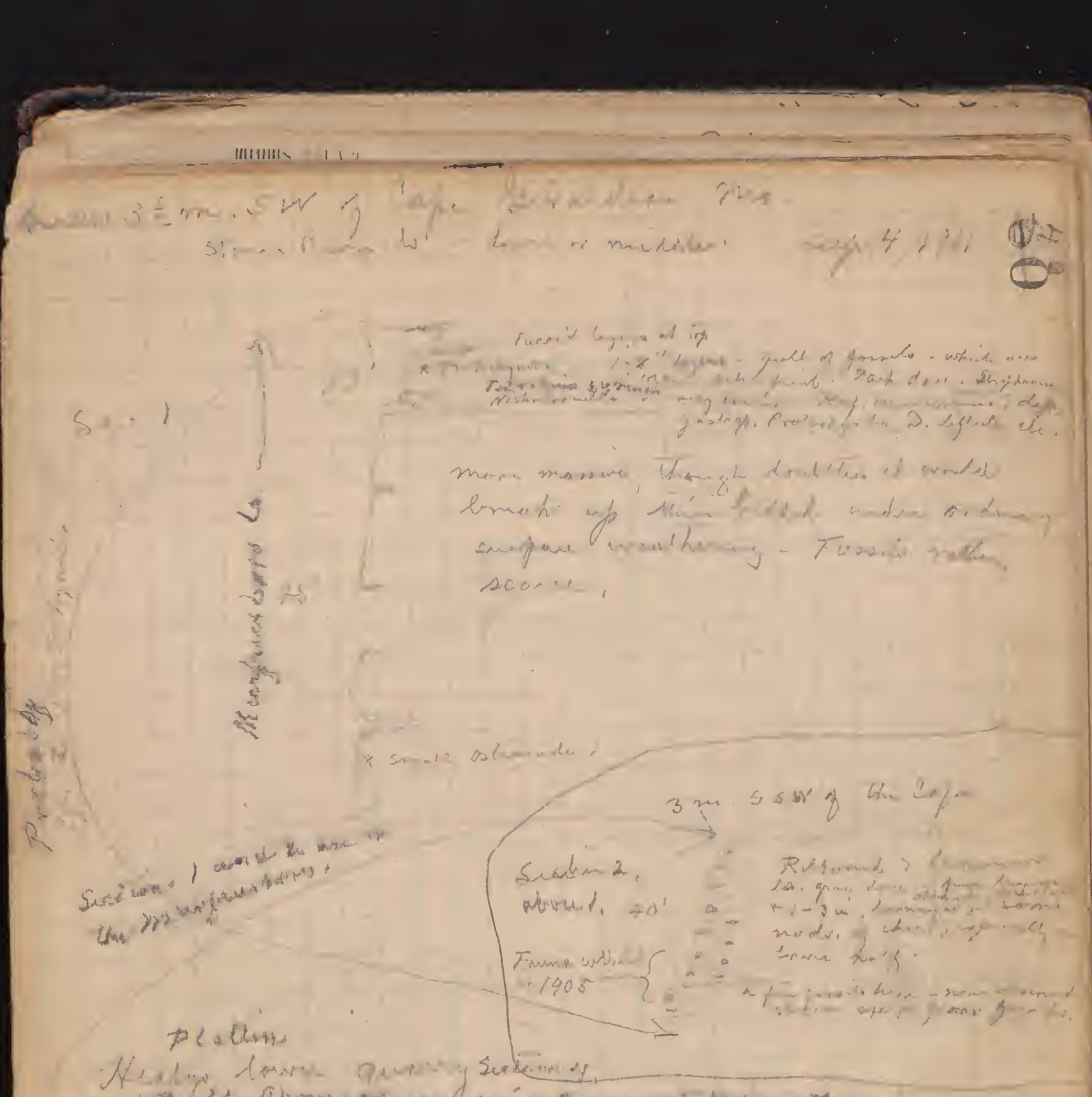
1903, Nov 6. Rain light during Forenoon R.R. 2 mi. down
Cooper Barometer 29.88.



Nov. 7 Notes from Columbus down, Trip Cape to Cairo (Mississippi River Commission Steamer Rodgers)
9 a.m. Started N. 19 from Cape) Bk. Chapter is Kentucky Bar R.R.
Island 10 in sight ahead 70 yds. Narrow channel
Low Island 4 in sight ahead 70 yds. Narrow channel
by Kentucky Bk. 2 or 3 Trees together on Island, 1 yd. 2 miles
by Kentucky Bk. 2 Trees together on Island, 1 yd. 2 miles
Kentucky Bk. is mostly cut by Levee. The road
Kentucky Bk. is mostly cut by Levee. The road
Kentucky Bk. is mostly cut by Levee. The road

Between Bambridge and Nelga Landing the Silurian rocks rise from 100 to 175 ft. above river in abrupt bluffs & form almost continuous for 5-6 miles. Lower 50 ft. is shaly, with red, purple & green bands below the first [illegible]. The upper 50 ft. are yellowish & apparently more clayey than middle member, which is blue-ish.



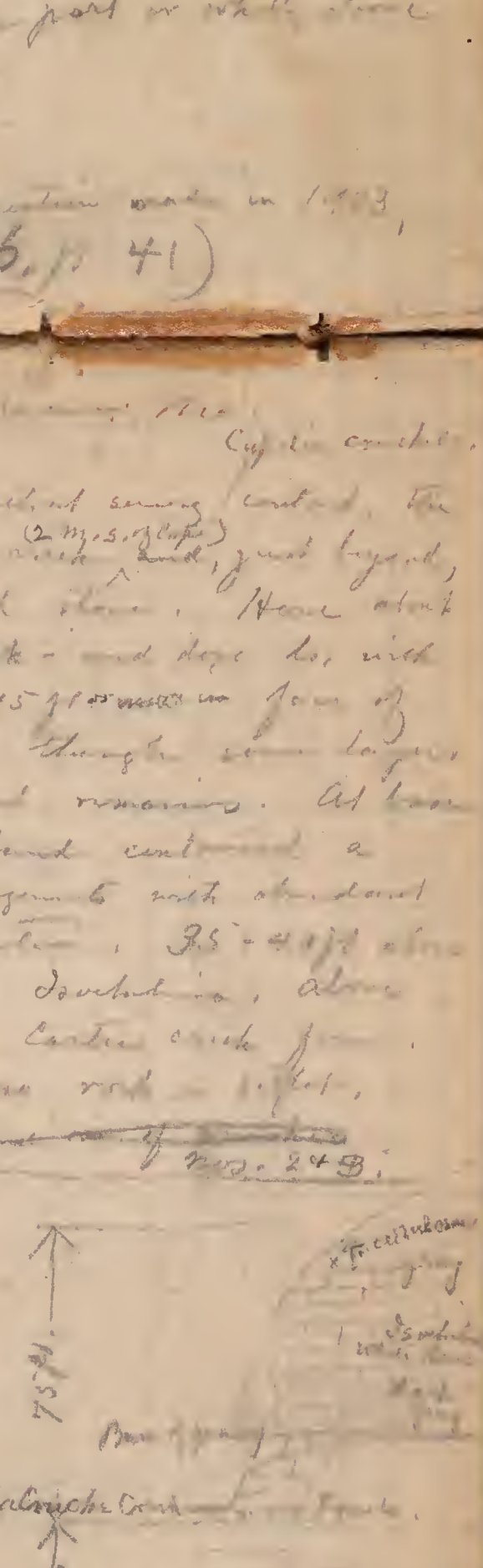
Nov. 6, 1903 South ... Cape ...

After passing over marble bed, with not seeming contact, the ... were exposed on small ... (2 m. S. of Cape) ... and beyond, on Eastward rising formation for crushed stone. Here about (perhaps over) 75 ft. of ... compact ... gray - light colored - and dips to, with ... nearly, no chert, are exposed. 45 ft. were taken from ... quarrying. Fossils very hard to get, though ... are crowded with their crystallized remains. At base (on creek bed) a thin, hard, dirty brown cemented ... Light ... the beach and ... fragments with abundant ... Fossils ... Dark blue clayey ... dirty brown ... Thin bedded clayey (shaly) light greenish blue clay, ... with small calcite ... but could not make out whether Tel. or not ... If so ... smaller than ... like above but thicker. Lower part has T. ... with the ... Greenish, clayey ... Tel. above with T. ... chert, black ... Tel. above - dove, ... brownish ... x Bryozoa & Ostracods. Dark blue ... finger ... part or whole stone ... Section 2 ... (See also section made in 1903, note book 6, p. 41)

Nov. 8, 1903 South ... Cape ... Cape Lalemche ...

After passing over marble bed, with not seeming contact, the ... were exposed on small ... (2 m. S. of Cape) ... and beyond, on Eastward rising formation for crushed stone. Here about (perhaps over) 75 ft. of ... compact ... gray - light colored - and dips to, with ... nearly, no chert, are exposed. 45 ft. were taken from ... quarrying. Fossils very hard to get, though ... are crowded with their crystallized remains. At base (on creek bed) a thin, hard, dirty brown cemented ... Light ... the beach and ... fragments with abundant ... Fossils ... Dark blue clayey ... dirty brown ... Thin bedded clayey (shaly) light greenish blue clay, ... with small calcite ... but could not make out whether Tel. or not ... If so ... smaller than ... like above but thicker. Lower part has T. ... with the ... Greenish, clayey ... Tel. above with T. ... chert, black ... Tel. above - dove, ... brownish ... x Bryozoa & Ostracods. Dark blue ... finger ... part or whole stone ... Section 2 ... (See also section made in 1903, note book 6, p. 41)

The rocks ... strongly ... bringing ... in Superstition bluffs ... in the next two miles at least ... ft. more ... Cr. The ... first ... or ... brown ... the beds narrow, ... dark & light gray, ... with ... that ... The ... beds ... quite ... ground. ... ft. thick ... round ... W. ... ridge ... The ... bluff ... ledge ... was ... seen (lower ... probably ... along ... north fork ...) Here the rocks are ... rather massive, and very slightly ... except in a bed about 20 ft. above base ... Lophophyllum ... with ... a Halysites ... and an abundance of ... single ... form of Tetradium ... Bed ... above ... Here ... bed ... about 50 ft. of the rocks is filled ... with ... Trilobite ... of Bythotrephis, ... less than ... 1/16 ... over 1/8 ... in diameter of ... Fossil ... comparable with the ... figured ... Tetradium ... to ... specimens. The ... is ... (by ... relief) ... dark-gray - nearly ... color ... weathering ... with ... the ... dark ...

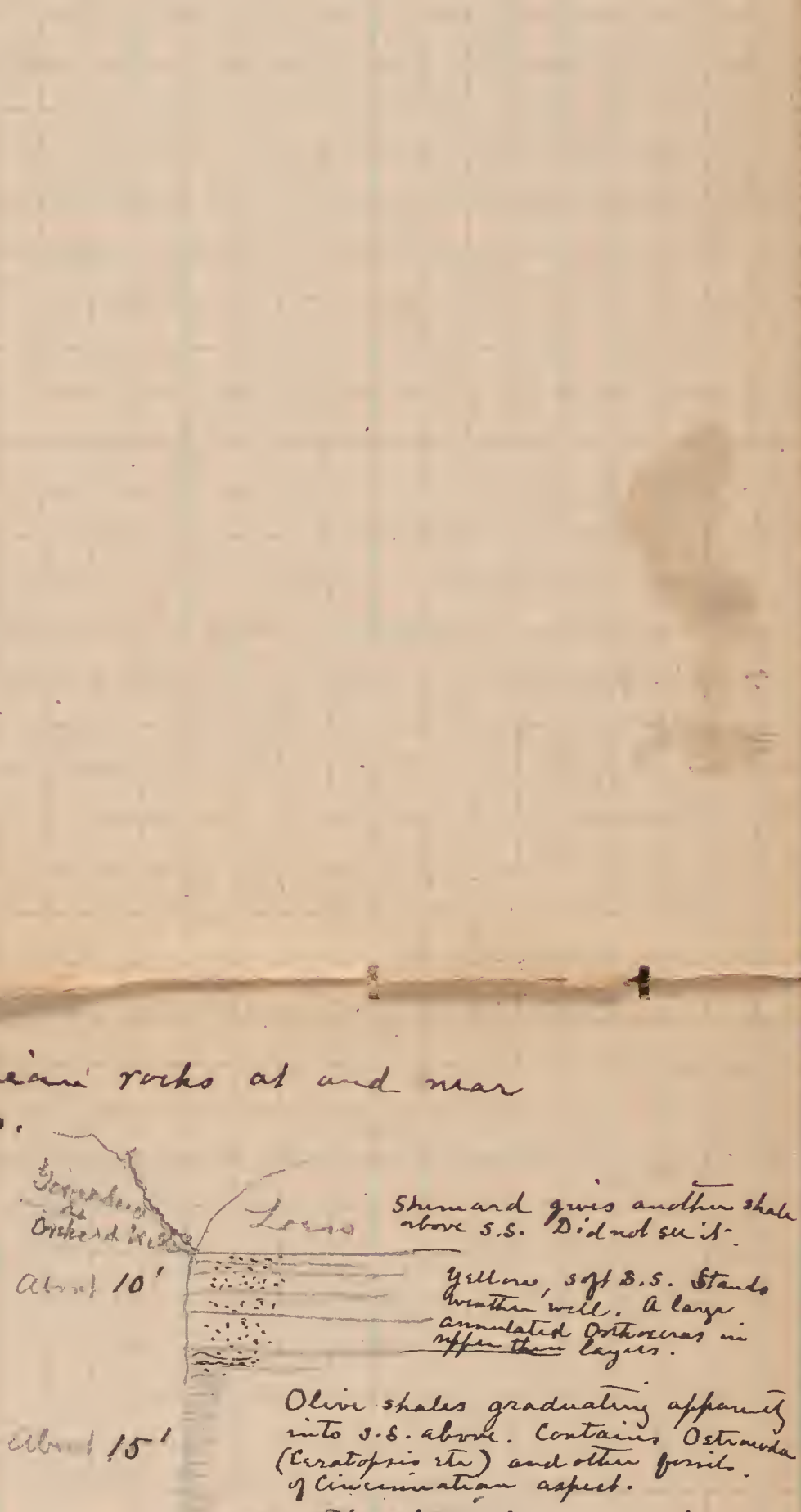


(See ... 16 p. 60) ... page ...

Nov. 6 - 8. 1903 Ordovician rocks at and near Cape Girardeau, Mo.

Cape Girardeau Lo. said to come above upper shale above s.s.

See Shumard's report for thickness (and fossils) of these formations.



Shumard gives this formation a thickness of 130' in Cape Gir. Co. I saw only upper 50-60 ft. of it.

White marble with few fossils and these only of bryozoa (? Cyphotrypa acervulosa) in very poor preservation. (White & chalky).

Lowest part of L. Girardeau section. See B.G.S. 16, p. 60

42

44

Nov. 9-10, 1903.
with Buehler

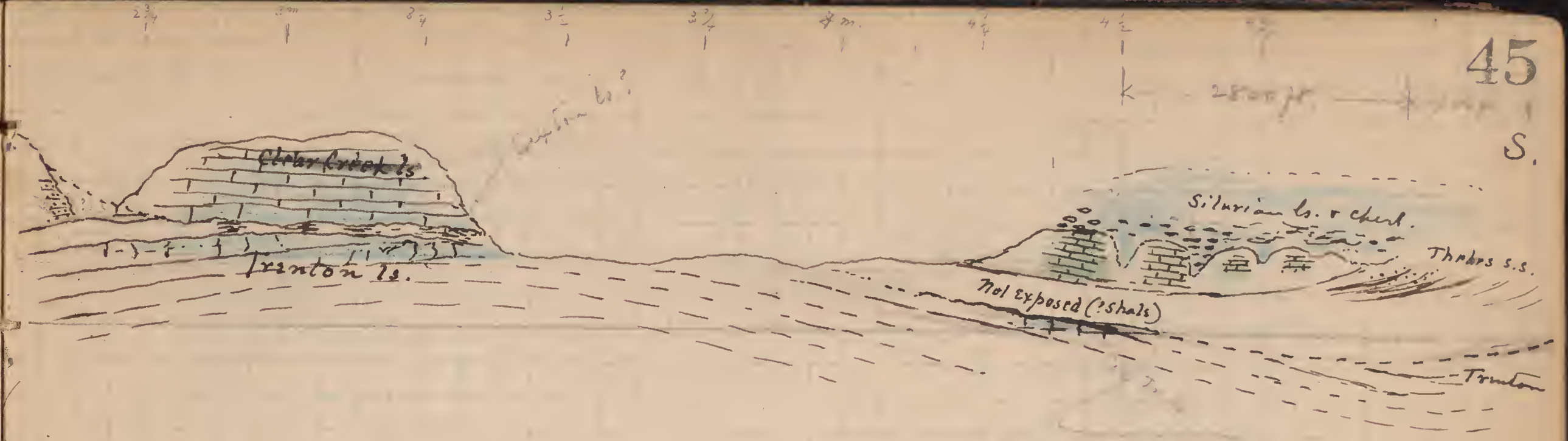
1. Top of Thebes S.S.
Oolitic brecciated shales;
2. Eroded & reduced bed of yellowish & olive shales with even plates of arenaceous-clayey ls. Principal fossils Isotelus & Calymene.
2a Cape Girardeau ls. 0-25' eroded at.
3. Undulatory thin, impure ls. with seams of shale; otherwise lithologically like no. 2
4. Conglomerate with pebbles and boulders of Cape Gir. ls. Large boulders very little worn, pebbles (growing smaller each way) thoroughly rounded. Matrix same character as no. 3, and containing as does no. 3 same fossils as Cape Girardeau ls. Pebbles extend downward into fissures in bed 3 and possibly deeper. 3 & 4 subgroup

To no 2a; together 6'-8'

5. Fine grained sandstone & shale, equivalent of Silurian age 3'-4'
6. Brown and dark gray, oolitic and semi-crystalline Silurian ls. 2'-3' 1-2 ft.

Bed 3 probably based on Girardeau ls. & not younger.

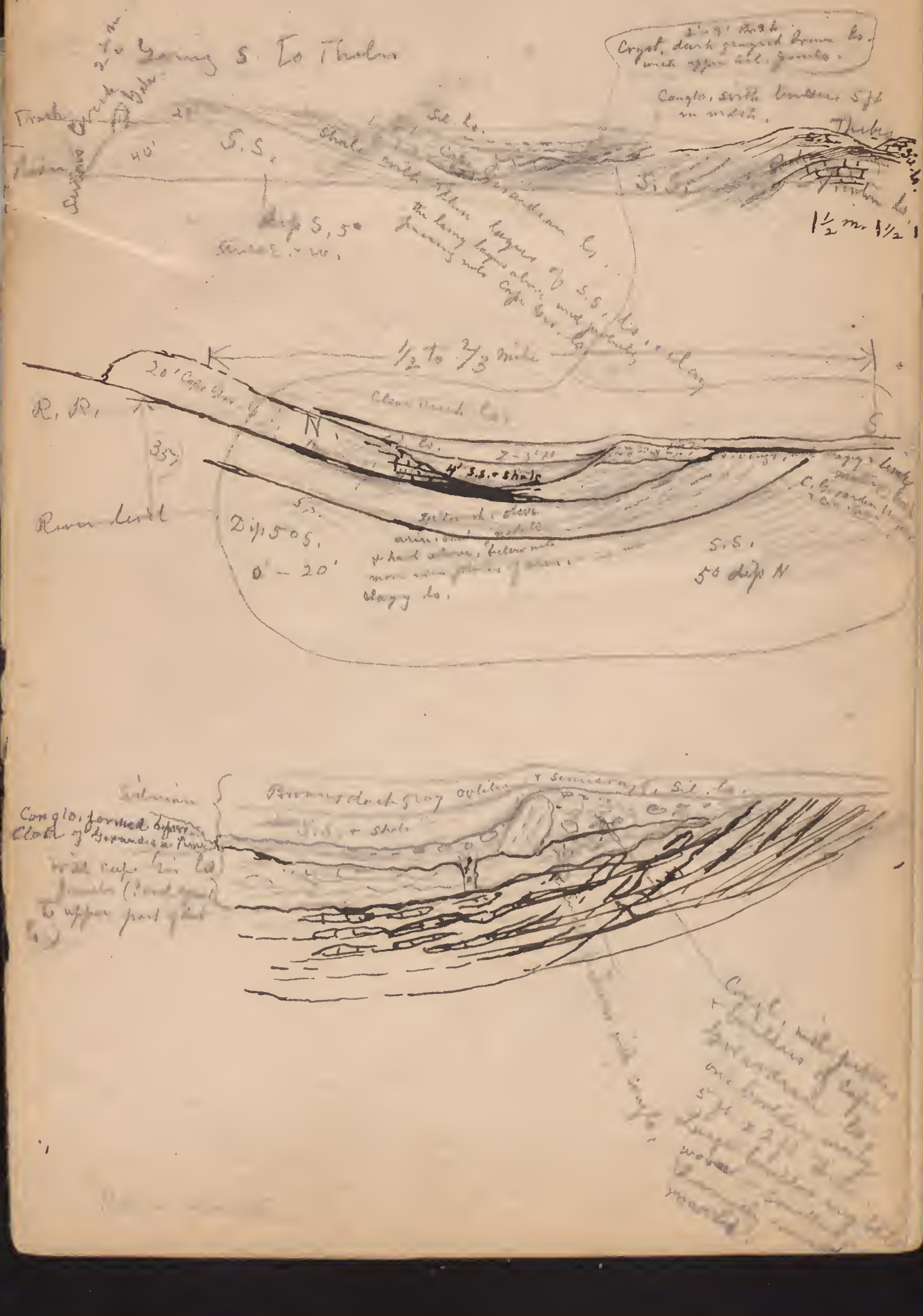
45



At Tennis ridge the Silurian of Cape Gir. ls. we find the Trenton ls., above that soft shales and intermixed Trenton limestone like at Cape Girardeau but with fewer fossils.

excepting that it often contains an abundant sprinkling of oolitic grains in shale or limestone

Nov. 9, 1903 – W. H. B. Smith, Denver



Notes on Stummers section 4-7.

St. Louis ls. at St. L. 14
" " " " St. Genevieve 16, 19
" " " " Gov. quarry n. of St. Gen. 17, 19

Chesters sands at Seventy six, Mo. 38
Cypress (& Aux Vases) ss. south of St. Gen. 18-19
Princeton ls. south St. Genevieve 18-19

" " Gov. quarry n. of St. Gen. 16, 17, 19

Warsaw at Wickes — 12
Burlington ls. at Aux Vases P.O. 16-17
" " " Red Rock Landing 38
" " " Kimmswick 12
Kinderhook at Glen Park
" " Kimmswick
Fullahoma S. ? west of St. Gen. 16
Devonian at Glen Park
" " Sulphur Spring
Silurian at Cape 36, 38, 39
" " Thebes 44-45
"
Ordovician section about Cape Girardeau 43

Cape Girardeau ls. n. of Cape 36
" " " n. of Thebes 44-45
Thebes S.S. at Thebes 44-45
" " " Cape 43
Richmond at Glen Park 9 - 11
" " Cape

Trenton at Glen Park 2, 9
" " Kimmswick - 12
Stones River at Cape Girardeau & Bradberry 2
Black River Limestone Cr. S. of St. Gen. 16

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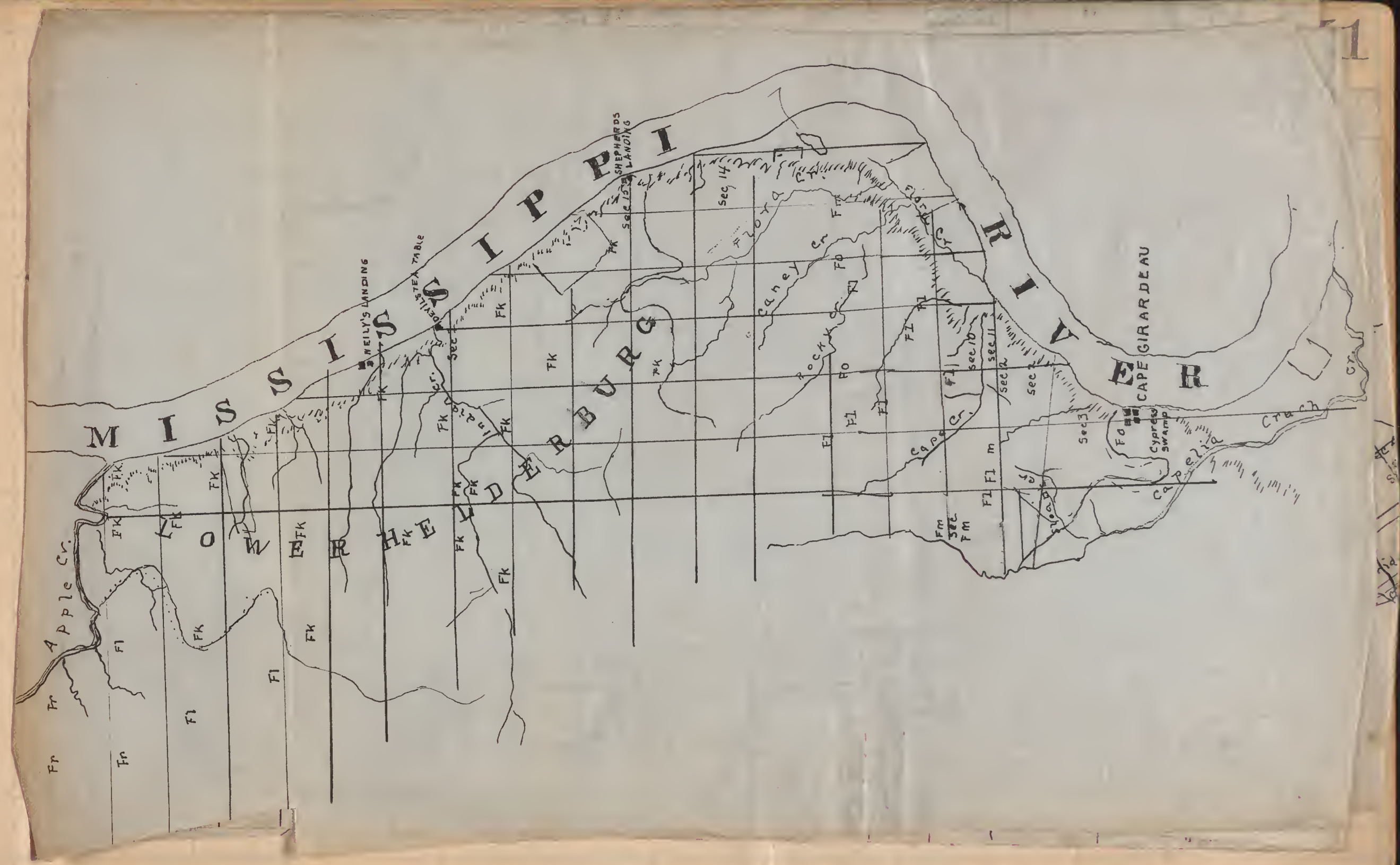
MISSISSIPPI RIVER
LOWER HEADLEBURG
Apple Cr.
Pekely's Landing
Cape Girardeau
Cypress Swamp
Cape Girardeau
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51

MISSISSIPPI RIVER

Brickeys Lg

ENCRINITAL LIMESTONE
CHEMUNG GROUP

ENCRINITAL LIMESTONE
CHEMUNG GROUP

Isle le bris cr

Fu

Fw

Fv

Fs

Ft

Fu Fw Fv Fs Ft

RECEPTACULITE and TRENTON LIMESTONE

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Sec 10

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CHEMUNG

Fusulinella

Esthwaite cr

Sec 1 Fv

Sec 2 Fv

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MISSISSIPPI
RIVER
Meramec River
Pomme Cr.
Saline Springs
Mill Cr.
Little Rock Cr.
Sulphr Spring
Sulphr Spring
Grand Glaize Cr.
Sulphr Spring
Kimmswick
Kimmswick
Bushberg
Bushberg
Rivermine
Rivermine
Hercules Works
Hercules Furnace
Platin Rock
Franklin Mine
Hon's House
Lead Miner
Rush Tower
Hon's Lead Mines
Lead
Part of
JEFFERSON
COUNTY.

Horizontal Scale 2 Miles to 1 inch
Vertical " 300 ft " "

Section of Mississippi River from St. Louis to Commerce. by B. F. Shumard.

XIV contd

Devils Tea Table

F.V. Delthyris Shale

Hills covered with soil and vegetation

Vancil's Landing

Bainbridge

XV

Interval of several miles Alluvial Bottom

Cape Girardieu Limestone

F.V.

Cape Girardieu

Small Creek

XVI

F.V. Upper Trenton Limestone

Graysboro

XVII

Brazos Bottom

Archimedes Limestone

F.V.

Willenburg

XVIII

F.V.

Grand Tower

F.V. Silurian Delthyris Shale

150 ft. - Chalk Bluffs

XVIII

Hills distant from River F.V.

Birmingham.

XIV

Neily's Landing

Aux Vases River.

Opposite mouth of Okaw River

IX

F.III. Archimedes L. Sandstone

St. Mary's Interval of 20 miles no rocks exposed Chester, Ill.

Sandstone

Claryville or Bailey's Landing

130 ft

F.V. Trenton Group

Mud Creek 1 mile below Bailey's Lg.

F.V. Delthyris Shale

Archimedes Limestone

Wilkinson's Lg.

Linhoff's Lg.

X

Sandstone

Archimedes Limestone

180 ft

XI

F.IV. Chouteau Limestone Bluish ash colored slate

F.III. Encrinital Limestone Upper Trenton Limestone

F.III. Archimedes Limestone

100 ft

St. Genevieve

Old Shot Tower

Herculaneum

Joachim or Sandy Cr.

F.V. Trenton Limestone

Trenton & Black R. Group Magnesian Limestone 1st

Platin Rock Crystal City

1st Sandstone

Platin Creek.

V

1st Magnesian Limestone

Crystalline Trenton Limestone

Lower Trenton Limestone

Black River Limestone

Selma

Rush Tower P.O.

Lisle des Bois Creek.

VI

F.III. Encrinital Limestone

F.IV. Chouteau Limestone Bluish ash colored slate

Upper Trenton Limestone

Salt Point

Establishment Creek

VII

F.III. Archimedes Limestone

180 ft

100 ft

St. Genevieve

Arsenal

La Baumes Quarries

F.III Saint Louis Limestone.

F.I.

Shot Tower

F.III Coal Measures

F.I.

Carondelet

F.III

River des Peres

F.I.

F.III.

Jefferson Barracks

F.III. Saint Louis Limestone

121 ft

160 ft

Cliff Cave or Oakville

F.III. Saint Louis Limestone

123 ft

Meramac River

Wickes

F.I.

Sandstone

F.V. Upper

F.III. Encrinital Limestone

F.IV. Chemung G.

I

Rock Creek

Kimmswick

Chemung G.

Trenton.

F.III

I

Sulphur Springs

Grand Glaize Cr.

Bushburg

Limestone

F.III.

F.IV.

140 ft

Rattle Snake Cr.

III

170 ft

F.III.

F.IV.

F.V. Trenton L. Lower

Up. Trenton L.

Sandstone

IX

150 ft

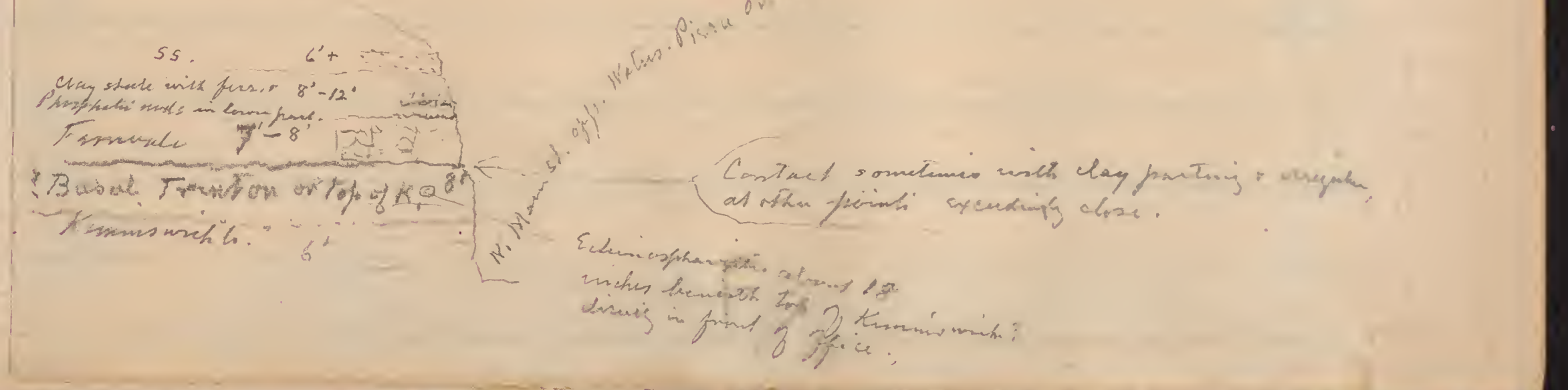
Rivers ide.

15' Stage /

..... coarse Crystalline ls. Crinoid Stems

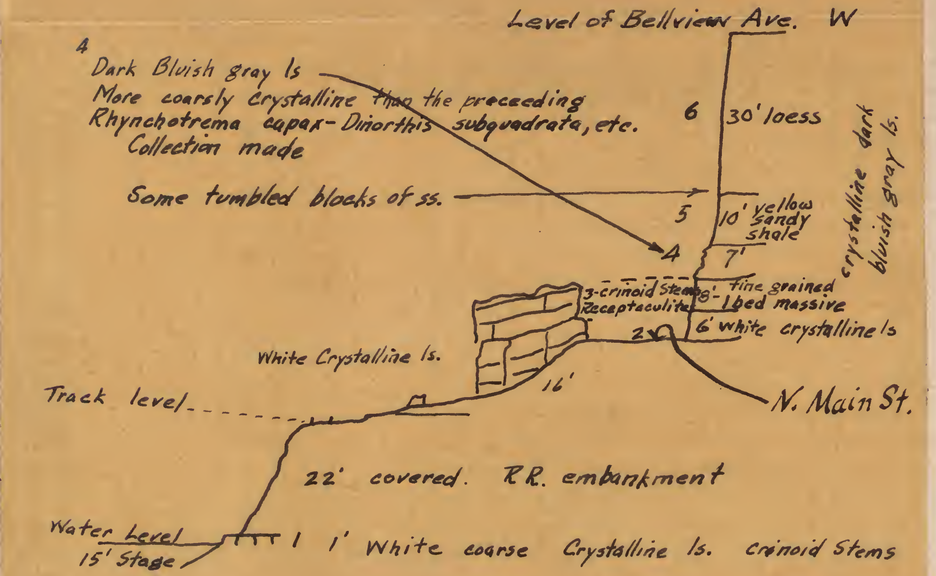
Mo. Geol. Survey - N.B. #658 -
page 5.

Cape Girardeau, Mo.
Aug. 28 & 29 1917

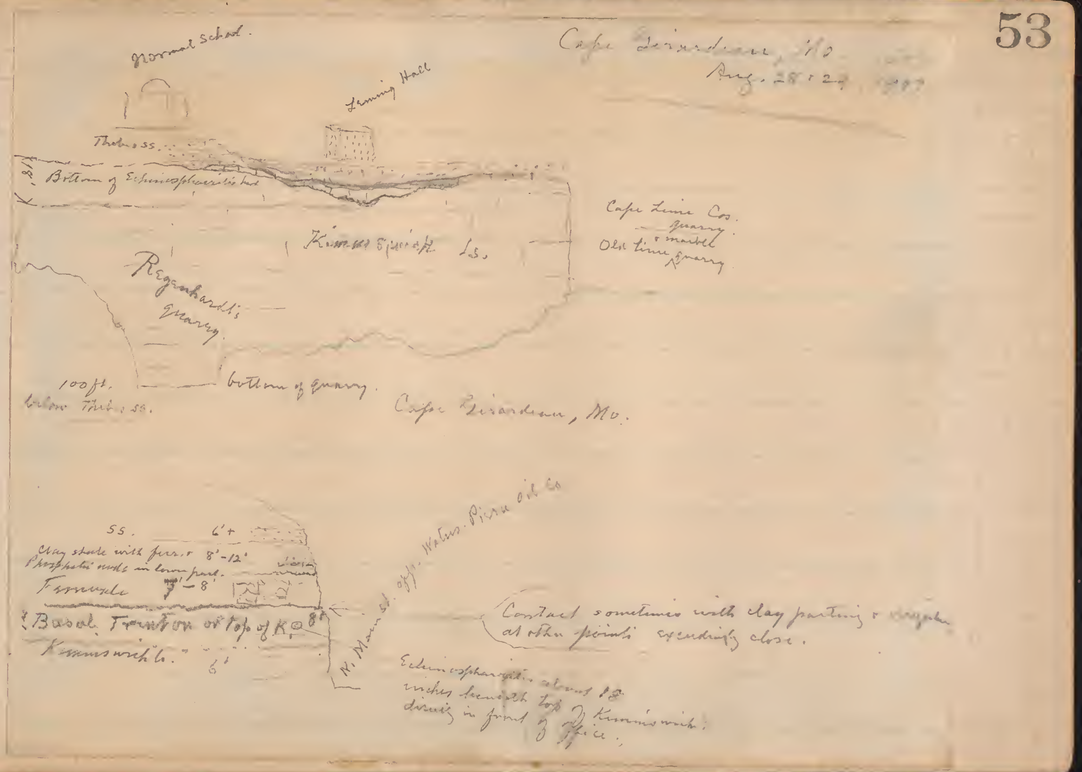


Section - East End Bellview Ave. to River
Dips Section about 5° NE
Direction of Section E-W

Analysis	6	Quaternary	
	5	Maquoketa - Thebes	10'
	4	Fernvale 7'-8'	15'
	3	Fernvale? Echinosphaerites bed	8
	2 }	Kimmswick	44'
	1 }		
			69'



Mo. Geol. Survey - N.B. #658 - page 5.



54


N
S
Rocks dip gently South.
about 20ft. of soft clayey shale with three planes of tender - perhaps slightly arenaceous - clay stone at intervals of a foot or two. No fossils.
Outcrop of Barambah Gds.
A 200ft
B
K 140ft
RR
Waters edge
Brown Gravels
Dolomites &c.
Coal
Shale and mudstone beds
Gravels
Clay
Sandstone
Ironstone
Fossil leaves
Coal seam
Fossil wood
Shale

Section of bluff from 1½ m. above to Thebes.

1½ m. above Thebes.

I

See more detailed sketch.

Silurian

Trenton, Birdseye &c

RR

Fault or pre-Silurian

Angle.

Base of Birdseye &c.

II

Thebes

55.

RR

River

Bridge

Kaskaskia

III

Thebes

Silurian

Trenton, Birdseye &c

Photo Roll I, nos 1-2
" " II. nos 1-5
mostly panoramic

Photo panoramic Roll II
nos 6, 7 + 8 1½ m. S of Thebes
show solution of upper cherty beds
of Birdseye &c.

IV

RR and Tn. 6 ft. above

55 above and below, Birdseye, Trenton & Galena 25 ft. above in small bluffs.

Orchard Bluff

Orchard Bluff Kaskaskia in Town

Ferruginous conglo. (Pots. Trent. or Platteville)

10' Cherty, massive fine, light gray L.

6" Red, rather finegr. L. 4'-6'

6' cherty, like above. Fair. fossilif.

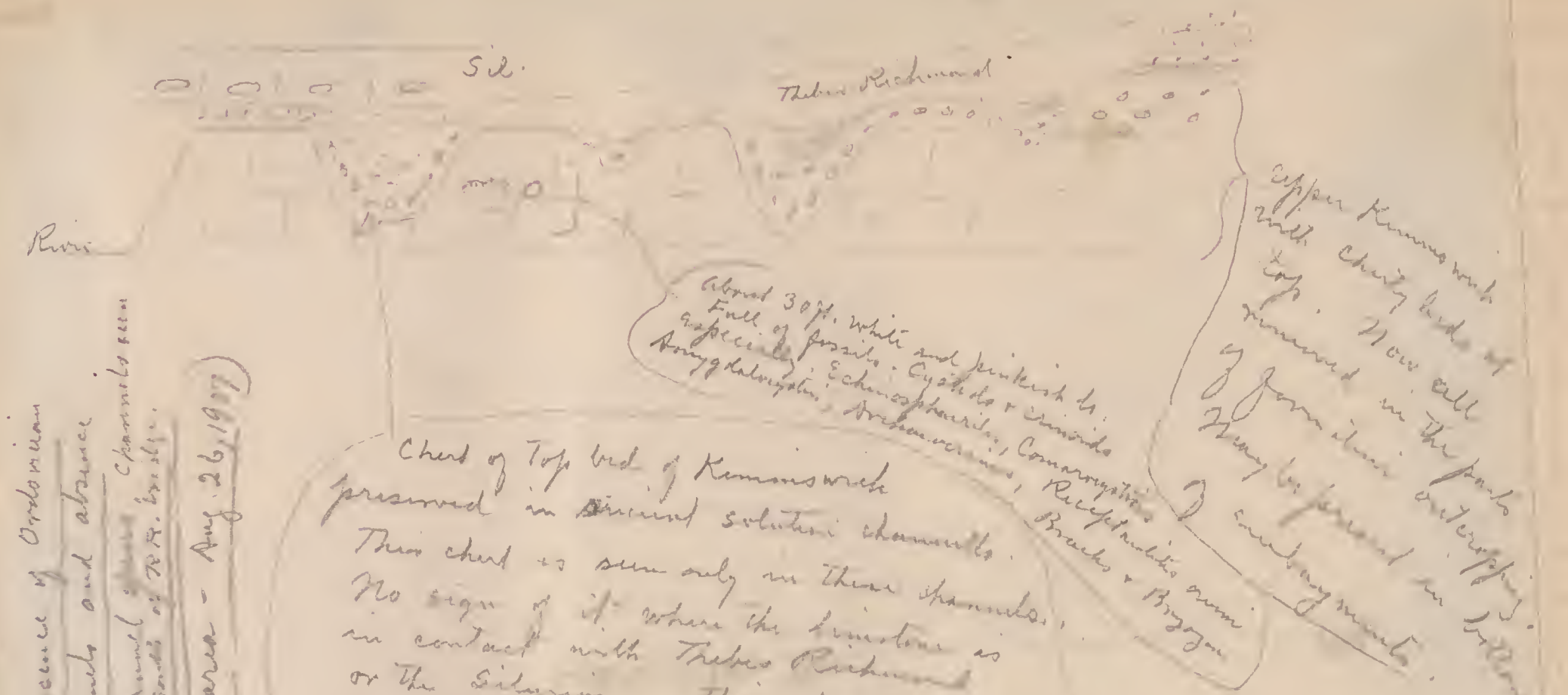
River

no crop about 25 ft.

S/Ketchs explaining presence of Ordovician
shell in Solution channels and advance.

Source in situ - channel shells Cpannibis Ecus
in R.R. cuts 3 miles South of Thebes, Ills.

(Note on Thebes, Ill. area - Aug. 26, 1917)



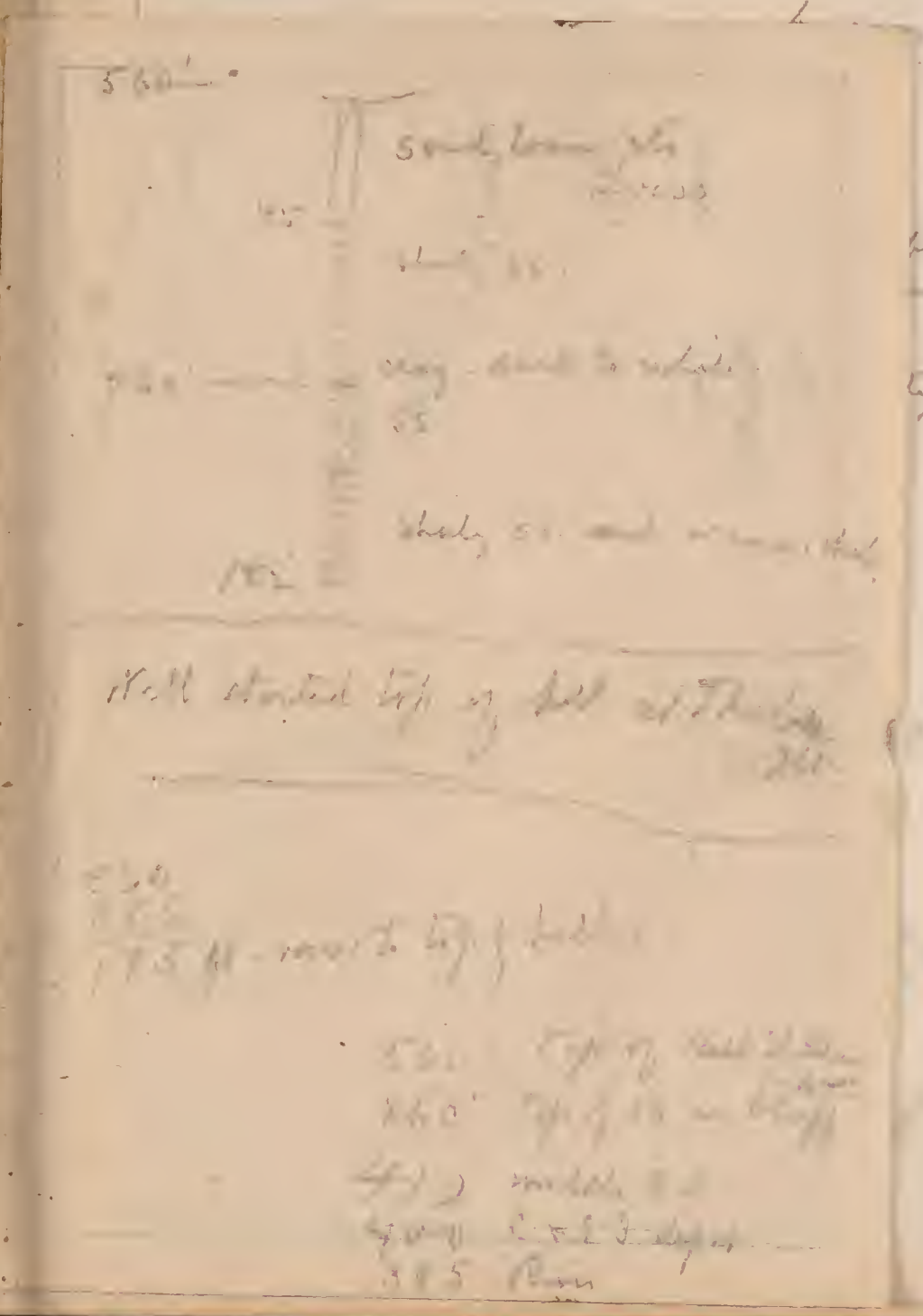
Chert of Top bed of Kimmswick
preserved in Solution channels.
Thin chert as seen only in these channels.
No sign of it where the limestone is
in contact with Thebes Richmond
or the Silurian. Thin chert is dark
(sometimes black) and nearly a black is
possible. Brought a Vanuxemia
(Cf. V. elongata + Wilmingtonensis sp.) and Oaw a
Raf. alternata (1¾ dia.) a Strophomena
Plectambonites rather large. Fossils poor,
but wonderfully fine. Chamberlin
Probably Galena Limestone in age.

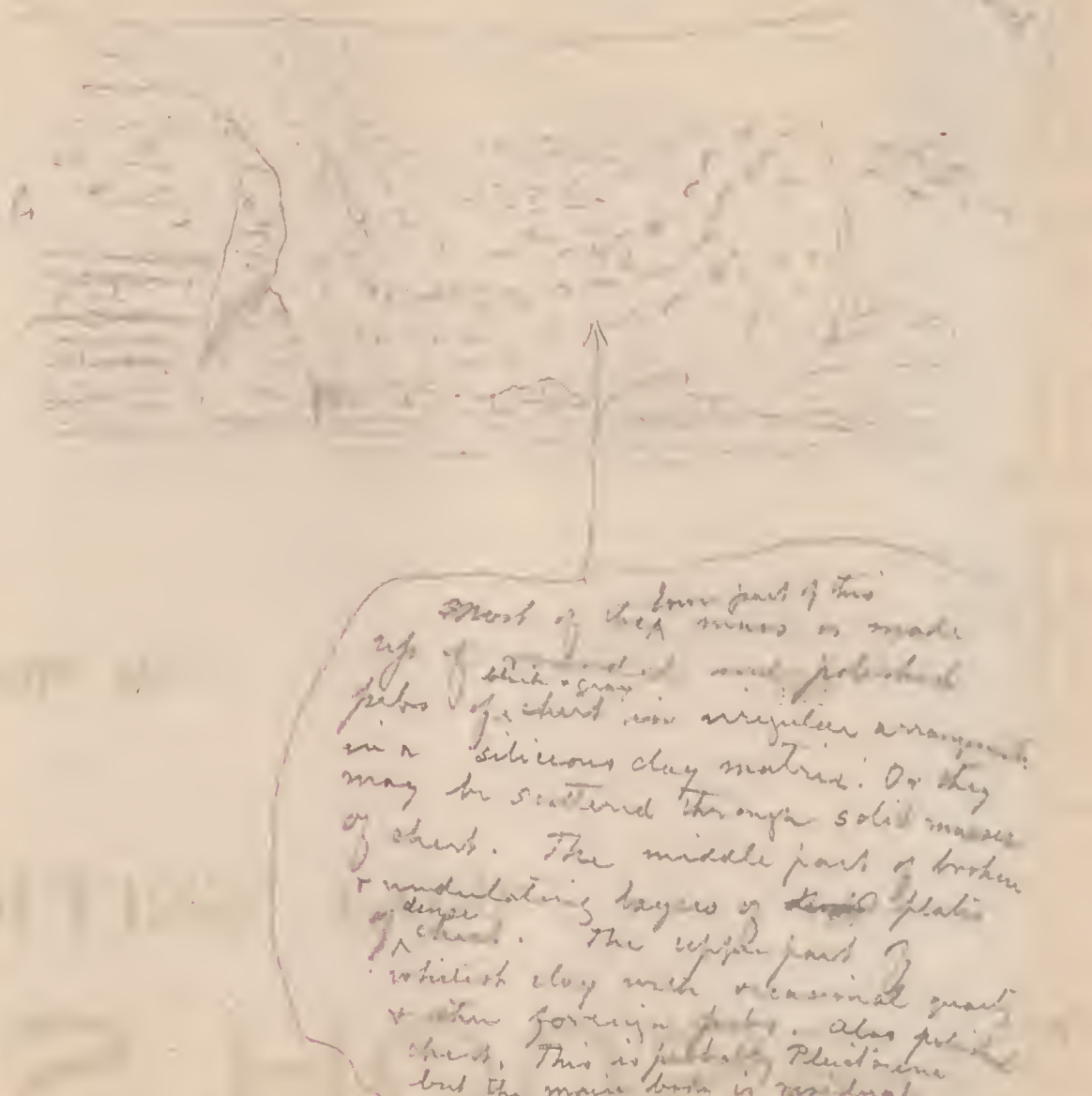
? Pre Silurian Solution channel

or Pleistocene

59

S. of Thebes - ¼ m. below Ground on Indian Mound





Most of the town part of this
cap of thick mass and jointed
fabric of chert in irregular arrangement
in a siliceous clay matrix. Or they
may be scattered through solid mass
of chert. The middle part of broken
& undulating layers of shale & flakes
of chert. The upper part
residual clay with subangular quartz
& other foreign rocks. Also fossil
chert. This is probably Pleistocene
but the main body is residual
from Kimmswick

SURVEY OF THE

In charge.

Name:

No. Formation:

System:

LOCALITY:

Collector: Date:

Note Book:

Page:

Memoranda:

0–3

60

61

~~Oct. 31~~ Nov. 1, 1903

Spent day (Sunday) at Central Texas C.S. with Dr. Berkey & Prof. A. Leonard of Columbus and returned — in evening. Found a few fossils in Strata separating Bonne Terre & Fredericktown. These strata obtain, especially in lower part, the layers of ls, and ls. conglo. and breccia formerly like that seen in Texas separating Mbrl. ss, Cambrian. It is composed of flakes of ls, coarse and sandy — generally sub-angular, and usually closely jointed. The fossils occur above this breccia, when such, and consist of Dictyonema? and smaller bivalve fragments with a Lingulella and Linnarssella?

Saw no good exposure of Potosi but understand the ordinary fossils of Jefferson which are common on detroit from this formation.

A. H. Worthen's section at Monte Sano, near Huntsville, Ala. as published in amended form in Geol. Tenn., p. 358, 1869.

Ferruginous S.S. with 4 pt. slate and impure coal at base — — — — — 34'

Light bluish-gray li. containing teeth of Aspidodus crenulatus N. & W. & Pentre. godoni Archimedes etc 50'

Shaly li. somewhat cherty, containing Sp. increbescens Fenestella subquadrata etc mostly hidden under a covered slope — — 100' – 120'

Compact, bluish gray li. semioolitic in part, containing P. godoni, P. pyriformis and Archimedes 250'

Ferruginous S.S. with fossil plants — 10'–15'

Compact gray li. with Pentremites & Archimedes in abundance; Zeacrinus, 2 or 3 sp.; Agassizocrinus conicus, Productus cestriensis P. semireticulatus etc — — — — 200'

Decomposing cherty layers — — — 4'

Gray, cherty li. with some highly oolitic beds containing L. canadense L. proliferum, Spirifer strictus? and fossil Crinoidea, also Productus ovatus? & P. semireticulatus etc 150'–200'

Dark bluish gray, siliceous rock, weathering to shale in some localities, with a few scarcely determinable fossil shells. 100'

Thickness of strata estimated.

Coal Measures.

Section from Cowan, Tenn. to brow of Montaun (Distance nearly 6 miles) Safford (Geol. Tenn. p. 356; 1869)

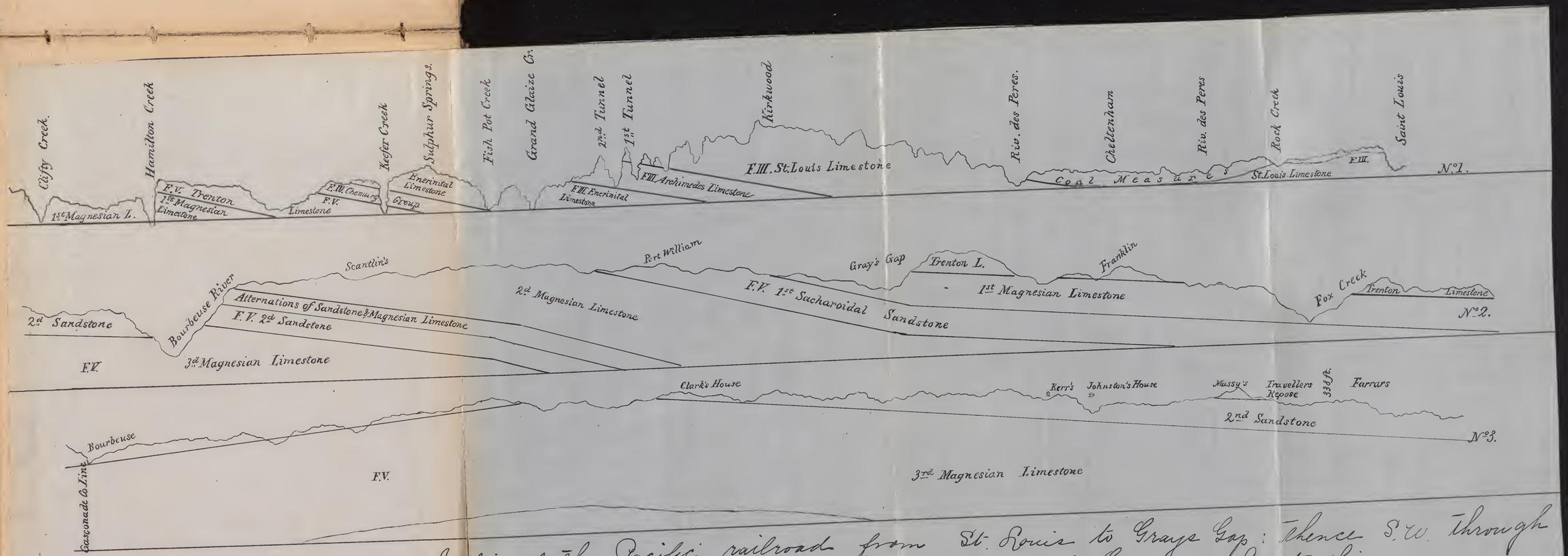
Sandstone bluff at top 5-2', shale with a thin seam of coal, 14', sandstone, with fossil nuts, calamites etc, 25-30', and local bed of sandy, ferruginous shale & hard sandy, foss. rock underlaid by bluish & brownish shale 12', 100 108'

21. Limstone & sh.; not well exp. three ft. crinoidal li. seen at top; below it brown & red sh. doubtless with li. 85'
20. Ls., blue & light blue, the latter oolitic — — 32'
19. Sh. & li. in alternating beds; sh. greenish & bluish gray and brownish, and most abundant; li. fine grained, argill. gives conchoidal fract., breaks into angular fragments on exp. Old Bowers road crosses R.R. in this 70'
18. Li. rough, hard, rather thin bedded, dark grey, sometimes brownish; has cavities lined with calcedonic quartz and some filled with gypsum. incl. a few layers of sh. 25'
X 17 Li., blue, fossiliferous, some oolitic. Pentremites pyriformis Spir. increbescens etc — — — — — 21'
16. Li. & sh. like 19 above. most of it thick bedded & decomposing readily, both forming glady places along sides of mountain. — — — — — — 35'
15. Li., heavy bedded, lower part with cavities, some filled with gyp. 55'
14. Li. dove colored, argill., weathering in rough layers; contains cavities lined with crystals. 8 ft. of mid. pt. embedded, with a line of small chert nods in one layer 28'
X 13. Li. mostly oolitic, heavy bedded, light bluish, foss. near base Archimedes, Pentremites etc — — — — 50'
12. Sh. & li. alternating. above argill. li. weathering to sh., containing cavities lined with crystals of quartz & calcite (8 ft.) below this blue, compact foss. li. (6 ft.) then a li. weathering to dirty drab (4 ft.) argill. dove li. (3 ft.)
X blue fossiliferous li (3 ft.) — — — 26'
11. Shale, greenish & bluish — — — 12'
10 Sandstone, fine grained, micaceous & calcareous 8'
X 9 Shale mostly; contains a few layers of li., one in its middle pt. 3 ft. thick & oolitic; fossiliferous 31'
8. Li. thick bedded, lower pt. dark blue & sparry; upper
X light bluish gray & oolitic; at top a ft. or two of thin li. & sh. abounding in Archimedes. whole mass very fossiliferous 13'

X 7. Greenish shale, with bed of li. 3 ft thick four feet from bottom. mass fossiliferous contains Astraea (Palastraea) carbonaria? McCoy. 27'
6. Li., mostly dove colored, some layers compact without fossils, others sparry, with them; at top a layer of bluish-gray
X oolitic, 5' thick, which forms the ceiling of the Nash. & Chatt. R.R. tunnel at its western end. Pentremites obovus — — — — — — — 32'
X 5. Li. knotty & argill. weathers into knotty lumps & sh. lower layers contain Archimedes — — — 9'
X 4. Li. mostly thick bedded, much of it oolitic & light colored, some crinoidal, other beds compact argill. contains the common Pentremites — — 70'
3. Li. blue, thin bedded, with cherty seams; fossiliferous 8'
2 Li., gray li, with a trace of blue — — — 20'
1 Li. alternating beds of gray oolitic and dove colored, & blue argill. li. — — — 57'
704'

Lithostrotion bed or St. Louis limestone
cherty li. very fossiliferous, to creek at Cowan, about 110'

3rd Magnesia



Geological section along the line of the Pacific railroad from St. Louis to Grays Gap: thence S.W. through Franklin County, near the line of S.W. branch of P.R.R. thence due west to Gasconade County line.

by B. F. Shumard.