

31

E. O. Ulrich.

Notebook 31.

Richmond sections in
Texas (Permo-Carb.) and Indiana.

1903.

1914.

Some very good Richmond sections

U. S. GEOLOGICAL SURVEY.

9-889

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DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

INTERNAL REVENUE

Requisition No.

Repairer's Copy.

Repairer's Copy.

Form 9-4002.
Approved by the Comptroller of the Treasury
July 30, 1912.

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

INTERNAL REPAIR REQUISITION.

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Please do the above work, which I certily is necessary.

(Signed)

Tilt

APPROVED:

APPROVED:	
Title.....	
Cost { Labor	
Total	
I certify that the above work has been completed, with the exceptions noted.	

APPROVED:
Title
Cost
 { Labor
 Material
Total

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~~40~~

~~40~~

Lower Arnhem. - To base *D. carlexi* zone.
Upper " - To top *Cyclora* lss.

20' Lower Waynesville - Ft. Ancient
Middle " - Clarksville
Upper " - Blanchester (to top *H. insculpta*)
Lower Liberty - Shaly portion
Middle Liberty - Lss. predominant. To top
Plectambonites bed.

Upper Liberty - To base Whitewater.
Lower Whitewater - To basal Saluda reef or
its equivalent
Saluda

Upper Whitewater - Top of Saluda type of
sediment to base Elkhorn

6' Lower Elkhorn - Basal ± barren shales.
Middle " - ± massive shaly lss.
Upper " - Shales & thin lss.

6' *Gyroceras baeri*

Railway Map of Texas Oklahoma border

See later section
p. 27

26
26

not named. Shallow - 2 m.
yellow, clayey dolomitic - 10 ft.
yellow & bit. arenaceous.
shells in upper part are greenish & thin walled corals
dolomite below has white & yellowish
shells & thin bedded.
thin bedded dolomitic
shells in lower part
are greenish & thin walled corals
dolomite below has white &
yellow & yellowish 2 ft. thick
shells in lower part
are greenish & thin walled corals
dolomite below has white &

~~40'~~ ^S
*** 40'

Elkhorn.

20' Barren shales. Elkhorn ?

13'

Upper Whitewater
Even bedded with Tentaculites.

T

30' Upper Whitewater
Lumpy.

6'

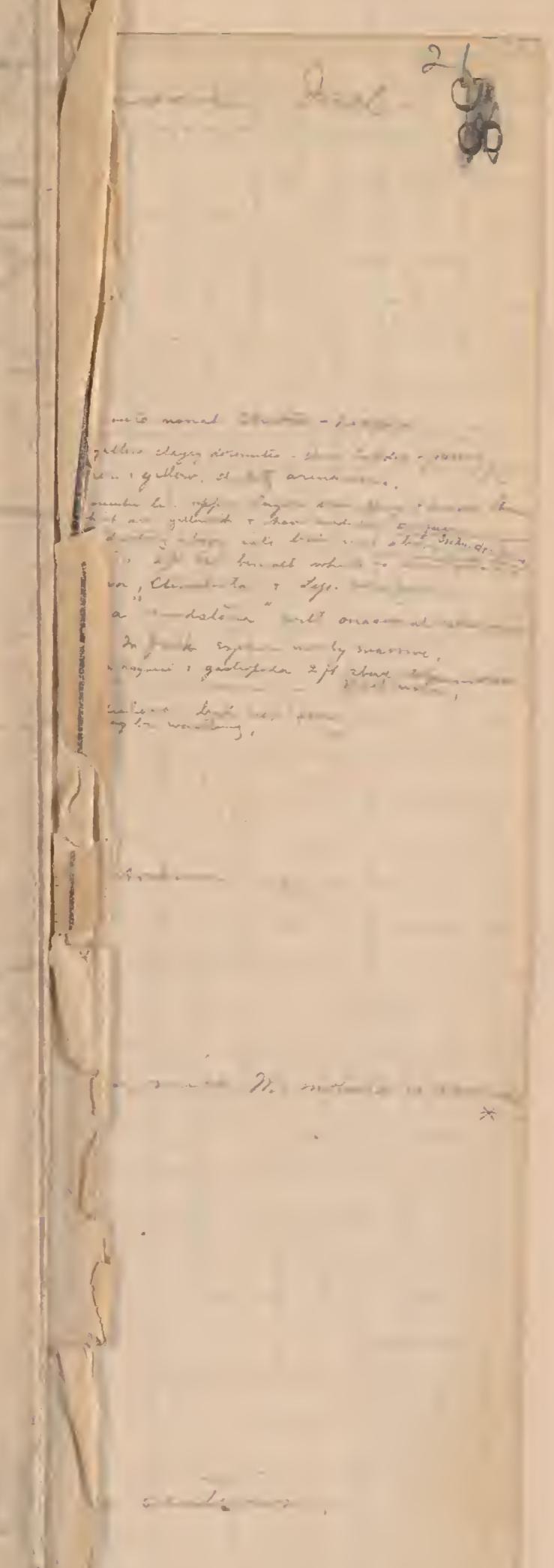
Saluda

30' Lower Whitewater

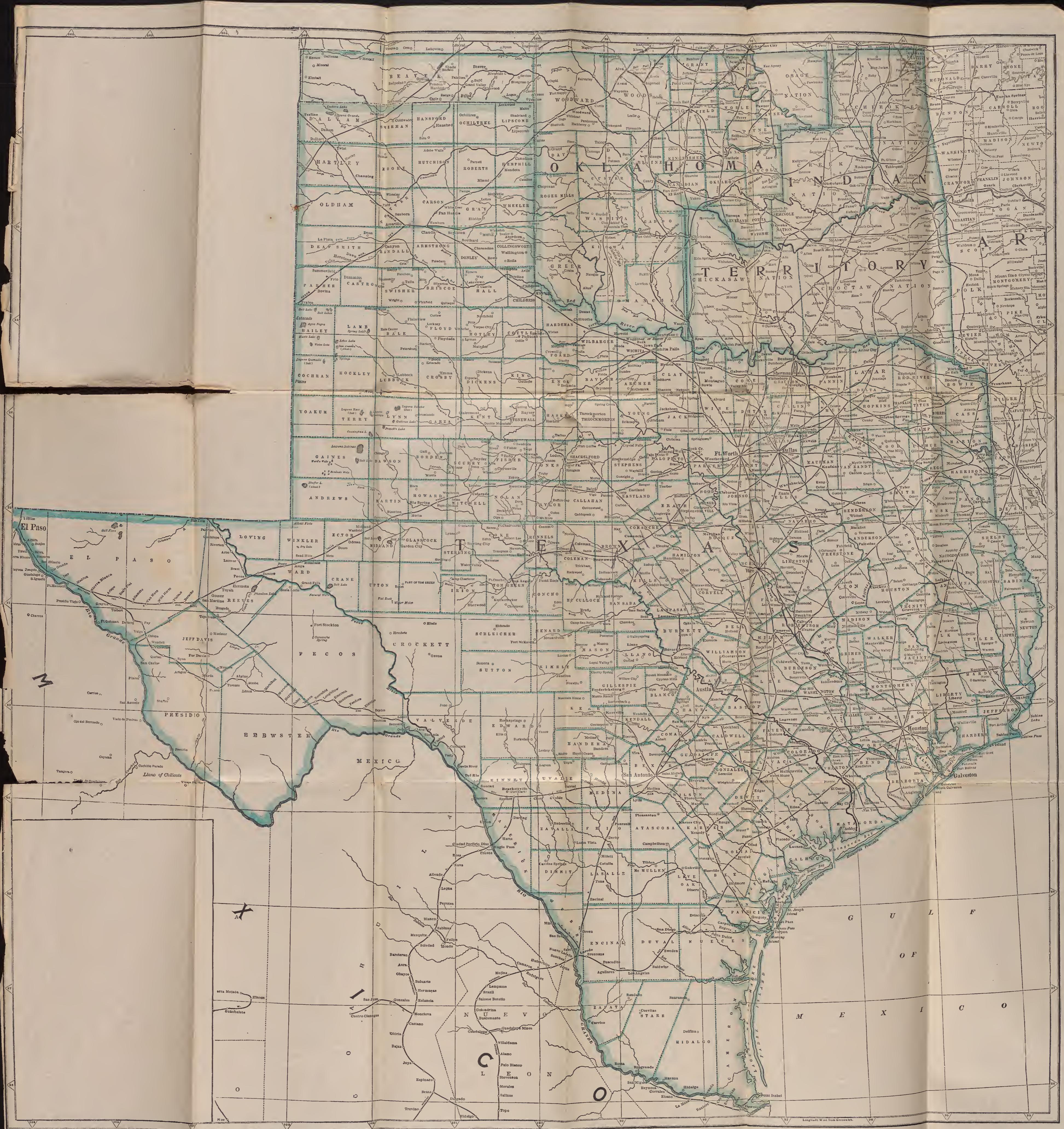
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6' *Gyroceras baeri*

Railway Map Texas Oklahoma & Southern Railway



See later section
p. 27



Railway Map of Texas & Colorado, 1852



40

Lower Arneheim. — To base *D. carlexi* zone.

Upper " — To top *Cyclora* lss.

20' Lower Waynesville — Ft. Ancient

Middle " — Clarksville

Upper " — Blanchester (to top *H. insculpta*)

Lower Liberty — Shaly portion

13' Middle Liberty — Lss. predominant. To top Plectambonites bed.

Upper Liberty — To base Whitewater.

30' Lower Whitewater — To basal Saluda reef or its equivalent

Saluda

Upper Whitewater — Top of Saluda type of sediment to base Elkhorn

6' Lower Elkhorn — Basal ± barren shales.

Middle " — ± massive shaly lss.

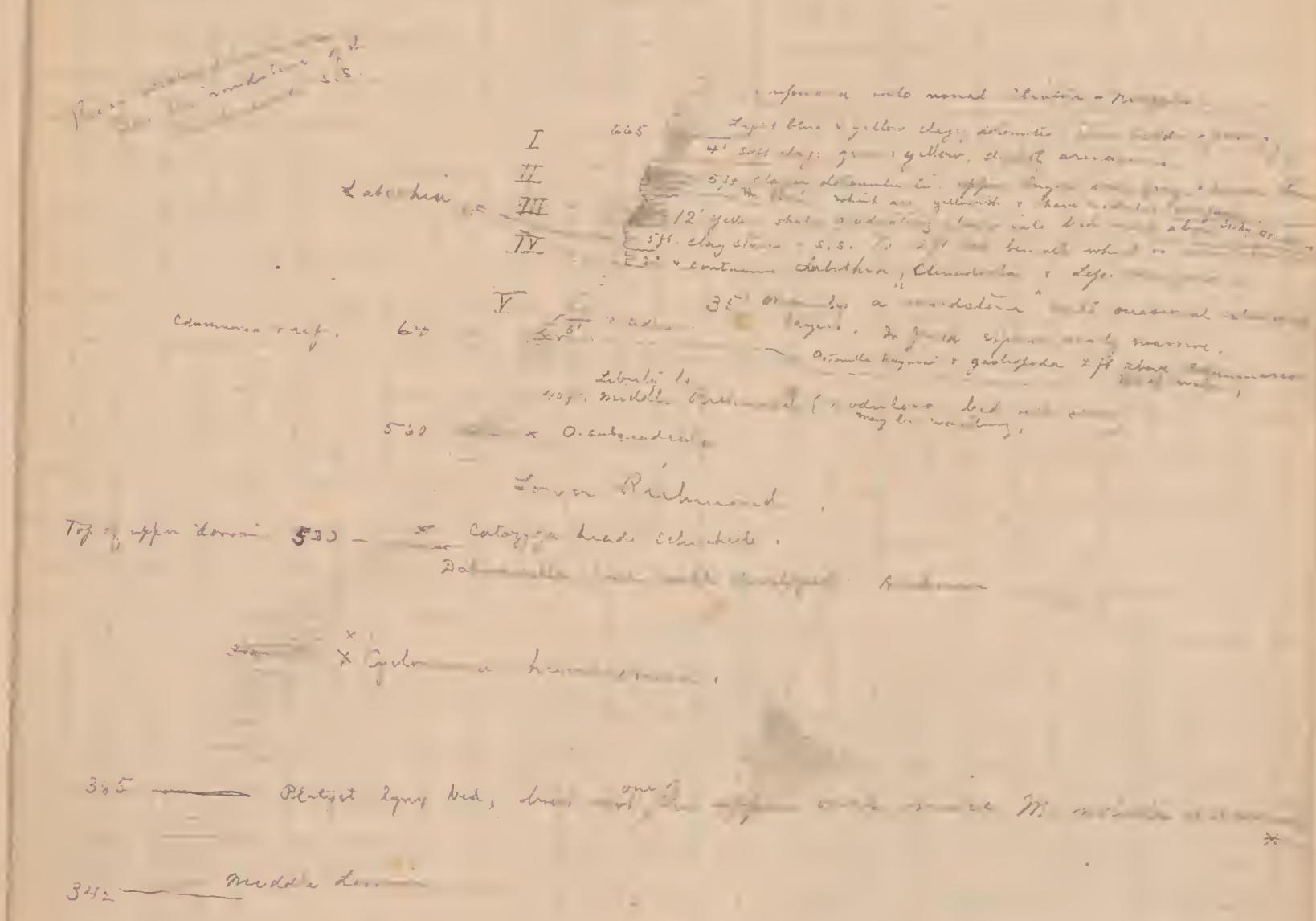
Upper " — Shales & thin lss.

6' *Gyroceras baeri*

Sections at Pleasanton, Ind

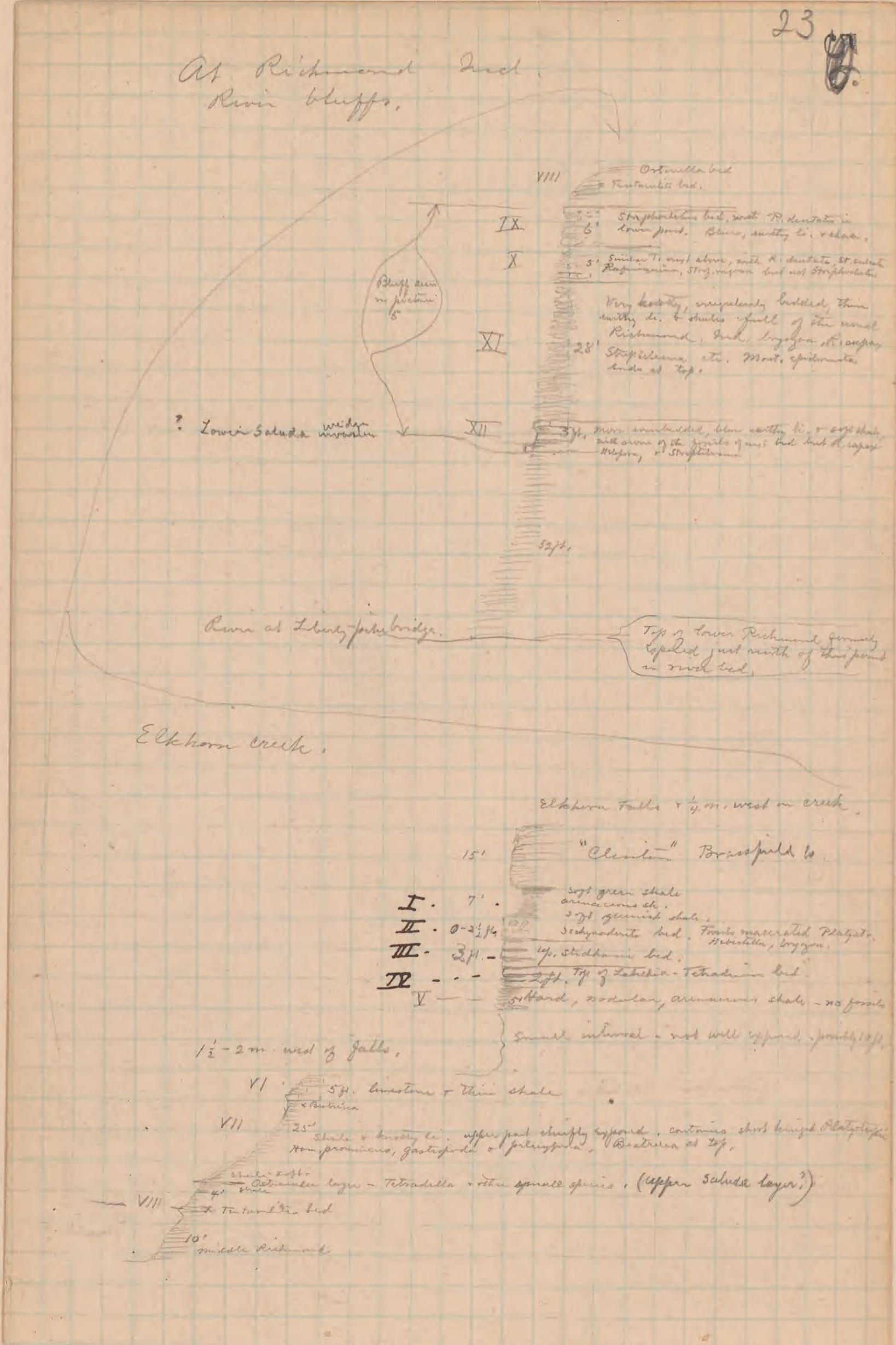
Hiltz road

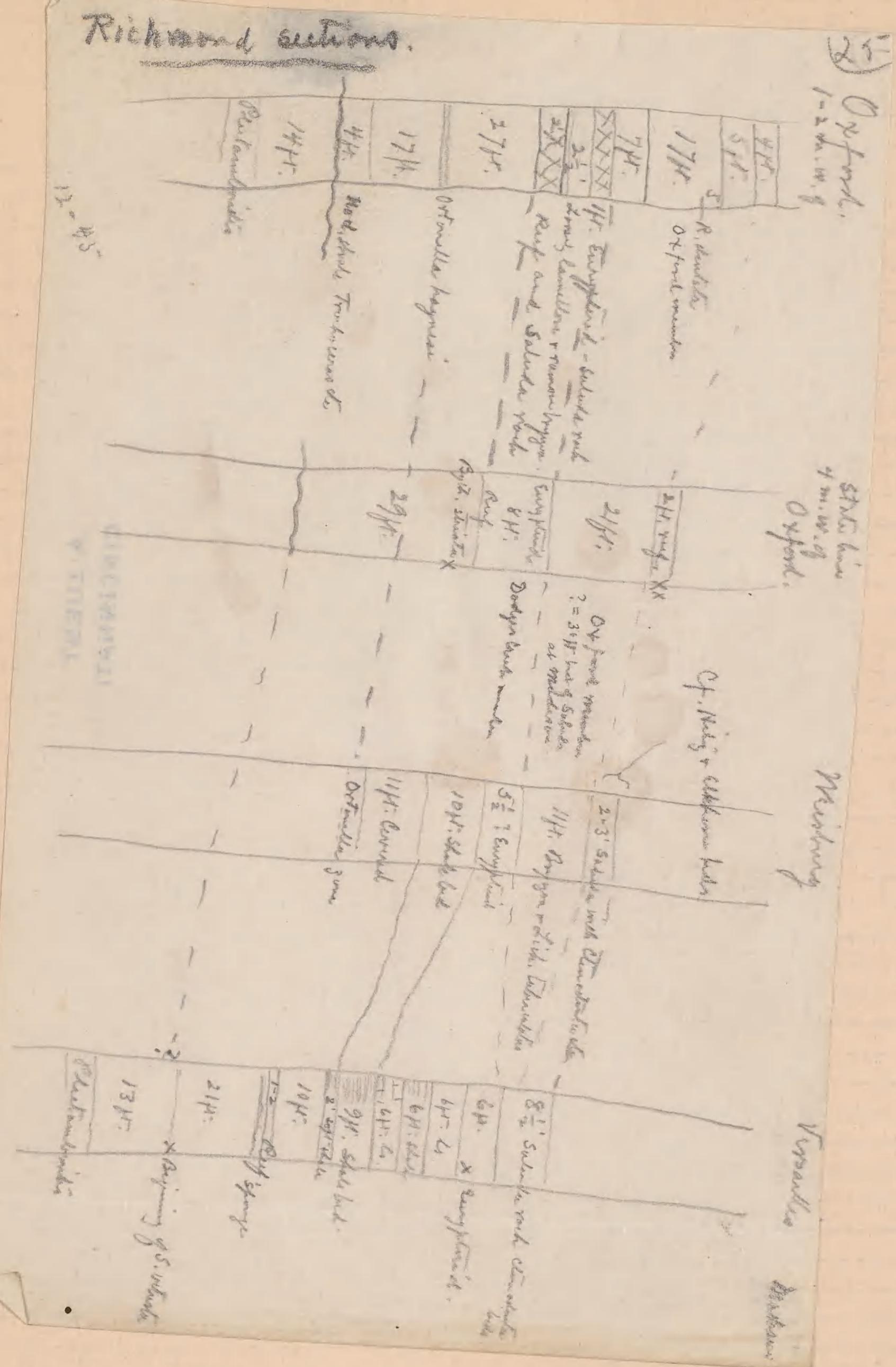
See later section
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* Comparison of fauna with Fairmount section.

To be correlated with Fairmount section.





Oct. 3, 1914 St. Peter's River, Rynd (27)

Heads 30-40 ft. range of Dolomites rocks, gypsum - do 100 ft or so. It is associated with Shaly limestone 25 ft. and Dua, sandy dolomite - the latter two found to be possibly from near underlying beds.

Madison, Ind.

Lamotte

Photo
Rock No. 2 — {
Limestone 10' 2"
Lepidolite bed 6-8' Hilly bed.
Marl 55. 30-35' ? = Oxford
marl

Photo
Rock No. 2 — {
About 1/4 m. above
Bottom of
C. Marshbank black
shale
Big cut
Wichita sh. (about 1/3)
Top Limestone
Total 68'

On Col. Brynne and shale.
3' thin limestone bed - Bell. marl
3' thin limestone bed - also 18 yrs. (Bell. sh.)
4' thin limestone bed.

Marl - poor stratified, somewhat sandy -
Top Limestone
x Mts. miscell. 32 ft. here in main
Col. Brynne bed.

Magruder
340' contains more ls. than the dolomites
part of main Dolomitic zone

Archin
(Observed no large Platyctropis in Archin)
Leptarenia at base, with Dol. & Raf.
McArthur
M. A. on thin m. Platyctropis from
bottom Raf. to top.

Congerville
350'
Bottom is
Platyctropis, dolomites, M. A. and
Gypsum like limestone.

29

Versailles, Ind. Along road north from Square To
Longhollow creek. Oct. 10th 1913. with Forest. 830
Vol. 15a (2)

in former square to
Oct 10th 1913. With Forster.

Vol. 39

29

Vernon to Bonnel, Ind.

Sept. 30 & Oct. 1, 1884.
With Butts.

Beds whiteish gray dolomitic beds in limestone at Vernon
3 ft. 7" - Limestone bed containing shaly dolomite - large *Pecten*

1' 1" - Top layer full of *Reticularia* - *Spirifer* - *Strophomena*

1' 2" - Layer just below filled with *Strophomena*, *Reticularia*, *Lingula*, *Leptaena*

3' 5" { 2' thin shale
{ 3' thick fine yellowish green with *Lophia*, *Brachina*, *Bellaria*, *Murex*, *Cerithium*

6' - 7' - *Platyceraspis* - *Leptaena* - *Whitmania* - *Reticularia* - *Strophomena*

5' - 6' - Largely composed of *Leptaena* occurs at West & I believe to be the bounding

5' - 6' - Cherty bed with 10" of *Leptaena* - *Lingula* - *Whitmania* - *Reticularia* - *Strophomena*

3' 2" - 4' - Shaly bed with 5" of *Leptaena* - *Lingula* - *Strophomena* - *Reticularia* - *Dolomites*

4' - 5' - Very large shaly bed containing *R. capillata*, *H. semisulcata*, *D. subquadrata*, *H. tenuis*

10' - 11' - Marl bed full of fossils - *Whitmania*, *Reticularia*, *Cerithium*, *Leptaena*

16' - 17' - Marl bed with thin bed of *Strophomena* *Reticularia* Only other fossils as above.

20' - 21' - Marl bed - *Leptaena*, *Reticularia*, *Strophomena*, *Brachina*, *Cerithium*, *Leptaena*, *Whitmania*

15' - 20' - Marl bed - *Leptaena*, *Reticularia*, *Strophomena*, *Brachina*, *Cerithium*, *Leptaena*, *Whitmania*

20' - 25' - Marl bed - *Leptaena*, *Reticularia*, *Strophomena*, *Brachina*, *Cerithium*, *Leptaena*, *Whitmania*

25' - 30' - Marl bed throughout. In large part shale with thin layers of ls. carrying the fossils

30' - 35' - Brown surface, worn to, eroded with ls. in drain at end of ledge.

35' - 40' - Blk gray ls. eroded with clay pebbles - first appearance of *Dol. j. j.* ls.

40' - 45' - *Leptaena* & *Strophomena*

45' - 50' - *Leptaena* & *Strophomena*

50' - 55' - Marl ls. shale - some ls. near middle with ls. over them

55' - 60' - Large ls. & fine ls. - *Leptaena* & *Strophomena*

60' - 65' - Large ls. & fine ls. - *Leptaena* & *Strophomena*

65' - 70' - Large ls. & fine ls. - *Leptaena* & *Strophomena*

70' - 75' - Large ls. & fine ls. - *Leptaena* & *Strophomena*

75' - 80' - Large ls. & fine ls. - *Leptaena* & *Strophomena*

80' - 85' - Large ls. & fine ls. - *Leptaena* & *Strophomena*

85' - 90' - Large ls. & fine ls. - *Leptaena* & *Strophomena*

90' - 95' - Large ls. & fine ls. - *Leptaena* & *Strophomena*

95' - 100' - Large ls. & fine ls. - *Leptaena* & *Strophomena*

100' - 105' - Large ls. & fine ls. - *Leptaena* & *Strophomena*

105' - 110' - Large ls. & fine ls. - *Leptaena* & *Strophomena*

110' - 115' - Large ls. & fine ls. - *Leptaena* & *Strophomena*

115' - 120' - Large ls. & fine ls. - *Leptaena* & *Strophomena*

120' - 125' - Large ls. & fine ls. - *Leptaena* & *Strophomena*

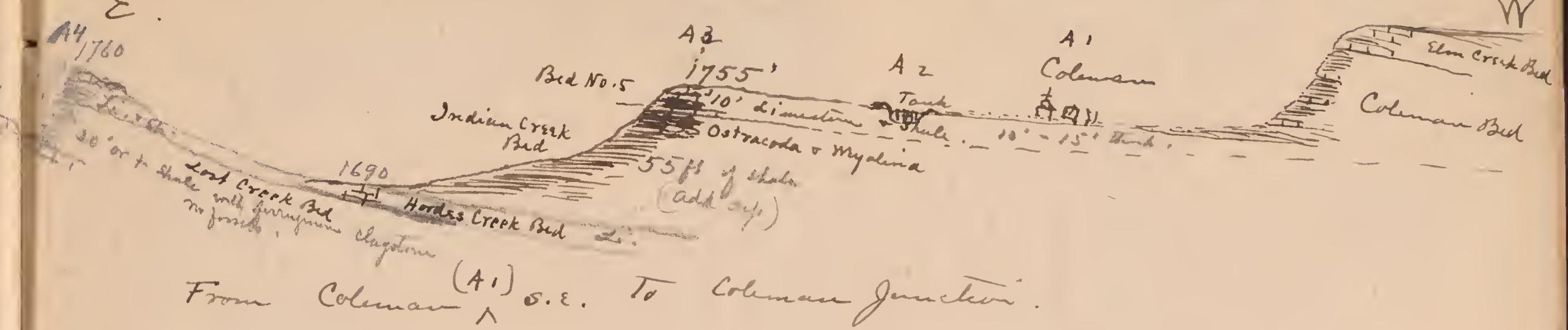
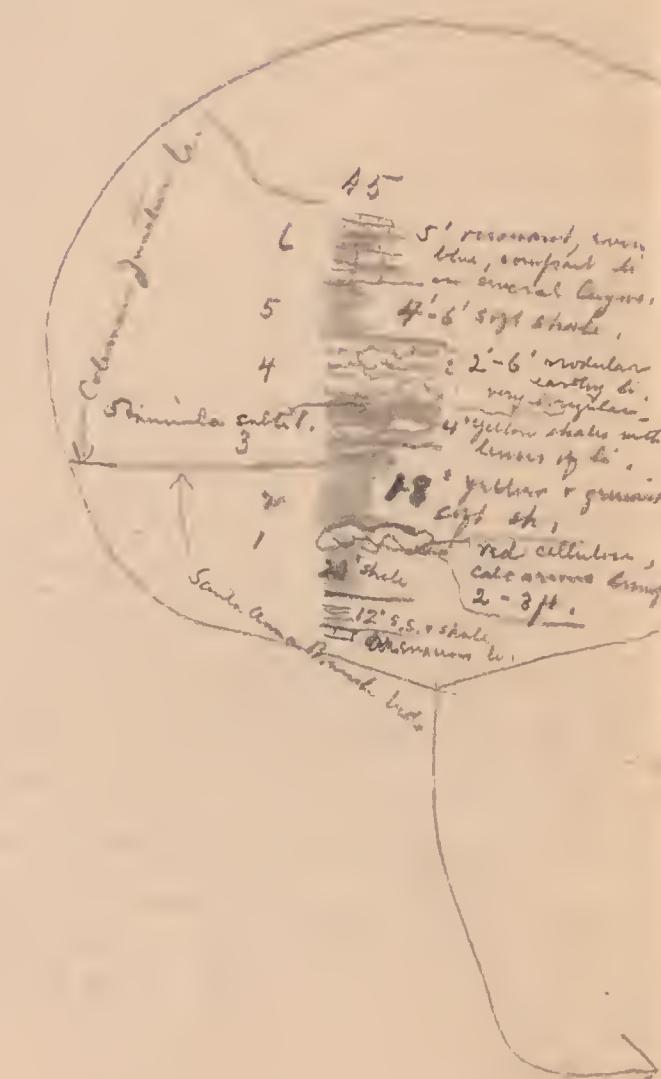
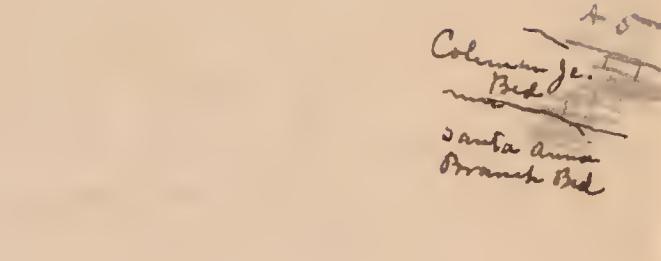
125' - 130' - Large ls. & fine ls. - *Leptaena* & *Strophomena*

130' - 135' - Large ls. & fine ls. - *Leptaena* & *Strophomena*

135' - 140' - Large ls. & fine ls. - *Leptaena* & *Strophomena*

140' - 145' - Large ls. & fine ls. - *Leptaena* & *Strophomena*

145' - 150' - Large ls. & fine ls. - *Leptaena* & *Strophomena*



At A 2 the limestone, which forms the floor of the slightly inclined plain upon which ^{the n.e. part of} Coleman is situated, is well exposed in a recently dug tank. The soil is shallow, rarely over a foot, but the li. shows effect of subaerial decomposition - all broken into blocks with more or less rounded angles. Fossils are not uncommon but, excepting Fenestellidae, neither well preserved nor of many species. A Pro. emarginatus is the commonest - a large Pomaria of which no good specimens were seen, is next. Species of Archiventeris abundant. ~~Archiventeris~~
^{At depth of a few ft. of yellow sandy li. 1-2' thick, has some fossils & belongs to lower part of this bed.}

A. 3. Here the limestone and underlying shales are exposed in an escarpment all told I do not believe the li. bed exceeds 8 ft. in thickness but will put its maximum at 10 ft. The li. occurs in 4 or 5 layers 6"-12" thick, ^{is yellowish uneven bedded, mostly} with more or less calcareous shale separating them.

A 4

4' shale
 11' - 12' + conglomerate li.
 5' " gastropoda very abundant }
 16' " " li.
 2' 6" shale
 6' " shelly li.
 2' " " dense li.
 10'-12' several feet of shale
 arenaceous li. with Mytilinae and gastropoda - poor.
 20' " " soft shales with ferruginous
 chalybeans in upper part.
 clay-sandy + redish. } Lost Creek Bed

Scattered a good
gastropoda, chiton,

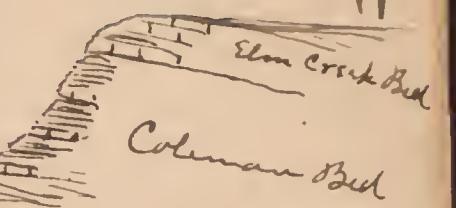
A.5, no 1, is a very striking bed, seemingly consisting of series of vicinose lenses of weathered
organic.

No 2 No fresh.

No. 3. The shales and li. bands contain *Seminaula*, *Diclasma*, *Derbyia*, *Poolia* and a *Streptopora*.

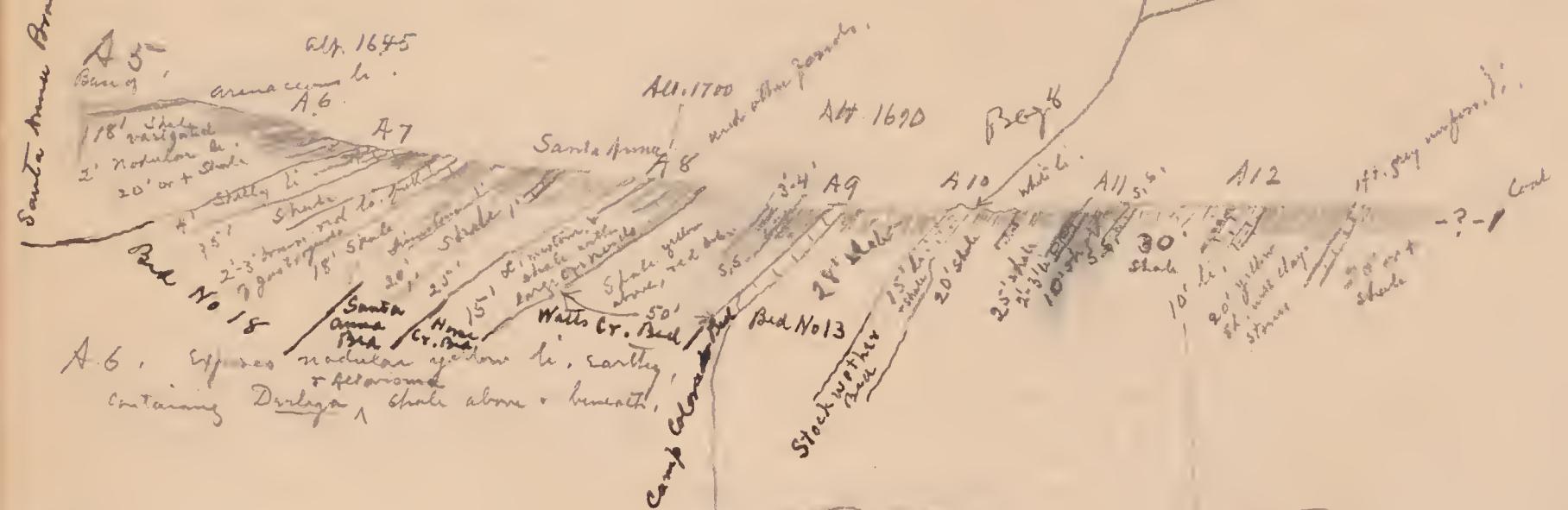
No. 4, is fossiliferous - g.

No 5. No fruits.
No 6. Costa small branching, ?*Hypoleia*, *Lamprospadix*? Not good.



Sept. 26th 1903 ^{Cape Cod.}
[initials]

Compare from A 10 to A 12-13
again with Drake - I seem to have
more in here than he gives.



4.1 Expresses orgiastic m. breaking
up into thin spalls under weather,
the varie from white or grey to blue.
Can is of wood (Panna, tree sp.)
Singers (Laniarius) and members of
Tribes, also Enanthophobus.

Between A 7 + B 5 there are three thin limestone layers from which no recognizable fossils were seen.

A 8. Exposures in a gully east of Santa Anna. Fossils plentiful. In shales at top of limestone column, plates and spines of a *Ziccaricus*? are abundant with a small *Solenites*, also common and *Hastidium*, *Camarophoria* and *Archaeoceraspis* less common. *Fenestella*, *Septopora* *Pinnatopora*

In the more calcareous parts *Pectinatites* (large semicryst.) and large *Diphyes* abundant. Also a coral
a *Sycozoa*-like sponge, and numerous fenestrated bryozoans. *Chonetes granulifer* also

A.g. A 1 ft. li. exposed in road is full of small *Junciparia* ① ② ③ apparently not fossil
With them a *Mitchella* or *Grimmella*. No other fossils recognizable.

A 10. Beds much like those at A 8 exposed in branch, only the limestone is lighter colored, especially the top layers which carry few fossils and are nearly white and marble-like. Lava $\frac{2}{3}$ with fossiliferous shales of which I took a lbs or so for weathering. Fossil shells occurred fairly abundantly. Common bivalves $\frac{1}{4}$ - $\frac{1}{2}$ in. dia. and brachiopods are most abundant fossils. Chonetes granulosus not rare, but other brachiopods are.

A 11. A 2-3 ft. white, nodular limestone, resembling of Cuttawas rock, exposed above S.S. in R.R. cut
No fossils seen. Limestone or sandstone form as caprock.
Between A 11 & A 10 three thin limestone, unfossiliferous, separated by 20' to 25' cl. from each other

A 12. About 10 ft. of limestone exposed in
base where a thin layer contains numerous
irregular slabs largely made up of same
species as occurs in A 8. Appears to be
an *Entolomia*? or concentrically plicated *Hemicyathina*.
Muskawetee Creek. Fossils very few except near
Fusulina and at top where a shale includes
Fusulina (?) *robusta*) and an occasional coral of some
specie^s *Leptostrea* ^{*multicosa*} The *Puma* occurs rarely also.

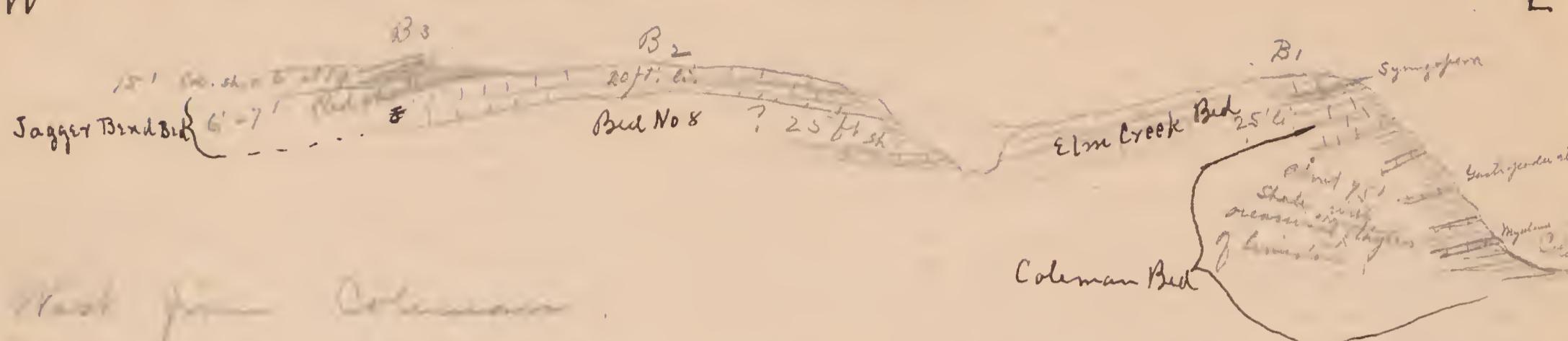
Exact horizon of coal seam was not seen. As near as we could learn it must be something like 75 ft. beneath A12.

Sep 28th

Ram

Sep. 29th 1923.
Very cloudy & rain all afternoon.

W

2^{ft}

E

West from Coleman.

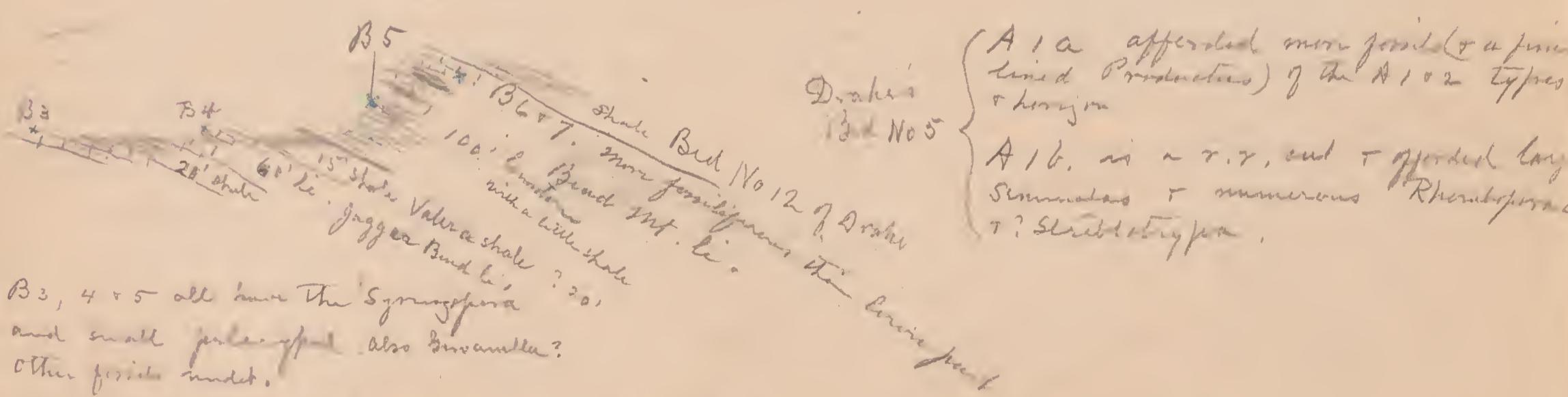
B1. The locality provided a disappointed paleontologically, a hard sandstone at base brought to light some pectenoids, a sharp-edged *Mystacina* being fairly good, a small *Naticopsis* also good. Poor *Bellerophon* and *Calymene*. Should also portion of *Nantucketid*. About middle of section a layer with *Murchisonia*? It occurs also in perhaps all of the li. layers but is very poorly preserved.

At top of section about 25 ft. I find ^(Elm Creek 6) limestone and shale - Reservoir of *Coleman* W.W. in it - Above middle of this bed found small *Tubular* *Syringopora*, (may be in string size as it seems to have no tubular) a single *Ceratites* with long.

B2. A long and fine exposure (after interval of 25 ft or less of shale) next. le. above yellowish limestone similar to preceding with no recognizable fossils except the *Syringopora*. This occurs abundantly at two levels - about 3 ft from top and 5 ft from base. Several layers are made up of comminuted fossils, apparently of some small, irregular bivalve pectenoid. A 1 ft. layer of li. conglomerate near base.

B3. Next came a bed of red, arenaceous shale, containing some breccia. This bed is less than 10 ft. thick. Above it are calcareous shales ^{thin li.} and finally some heavier di. All parts of this calcareous series contain more abundantly the *Syringopora*.

Sep. 30
Along railroad from Coleman ^{south} via Valera, town Taipa.



B3, 4 & 5 all have the *Syringopora* and small pectenoid also *Bivalvia*? Other fossils meager.

B6 was fairly fossiliferous - large *Spongites*, large *Atrypa* and concretionite the *Pinnaria*. B.7 about 10 ft higher than B6 and near top of *Brack Mt. le.* Same fossils as at B6 with *Bryozoa* in addition.

Sutro Valley to Ballinger along Railroad.



Dip S.W. to N.W. about 70 ft in 1 mile.

Get total thickness from above figures and difference in altitude shown on topographic sheet.

C₃a is part of same ls as C₃ + on same creek! C₃a where railroad crosses it + C₃ several miles farther south.

Fossils mostly fusulines
& Septaria, the latter very abundant.
Specimens lost. Similar to
those from C₂ but fewer
& no Phyllopora.

Sectio from Thürber west along Tex. Pa. R.R.
to 7 m. west of Ranger, Tex.

7 m. w. of Ranger 12 ft ls.
15' red clay shale + earthy ls. Fusulines, Stromatopora etc.
100' shales + a little s.s.

7 m. - 5 m. west
of Ranger 25'-ls. with a little interbedded shale. Very unproductive.
50' shale with thin bed of ls. outcropping in town of Ranger. No fossils.
Custer + eastward
also southward
over Custer
25' earthy ls. few fossils of same type as in next two ls. beneath.
50' sandy sh.
20' s.s. gritty s.s.
125' mostly sh. ls.

Mur Canon
Sands 25' ls. containing *Campoglypta*, ^{? Med. ls.} *Syntulites* + *Productus longipennis* etc.
65' shale

Top of hill west of
Strawn 5 miles
west 180-25' ls. Pr. longip. very abund. Rhynchonella bed.
80 ft. shales
1 0'-4' massive ls. (fish tooth)
20 yellow shale
10' ls. with large rugulina + at top ^{shells} full of small ramose bryozoa.
15' shale
1 ft. ls. full of bear-tipped Productus
10-30 ft.

Palo Alto Co. 100' Bryozoa
420 ft. of shales, with a little s.s. and occasional thin bed of ls.
in Mt. Mario Coal Co. shaft.
(See log of shaft.)
large Productus etc found at Thürber.

Coal no 2. Thürber + Strawn View.

N.W. 24th 30'-40' per mile

E
Garden Creek

Sandstone of Bowditch
100 ft.

Heads of Garden Creek.
100 ft.

Generalized section in vicinity of Seymour, Tex.
to show stratigraphic relations of fossil horizons.

Deep creek about
8 m.s.e. of Seymour

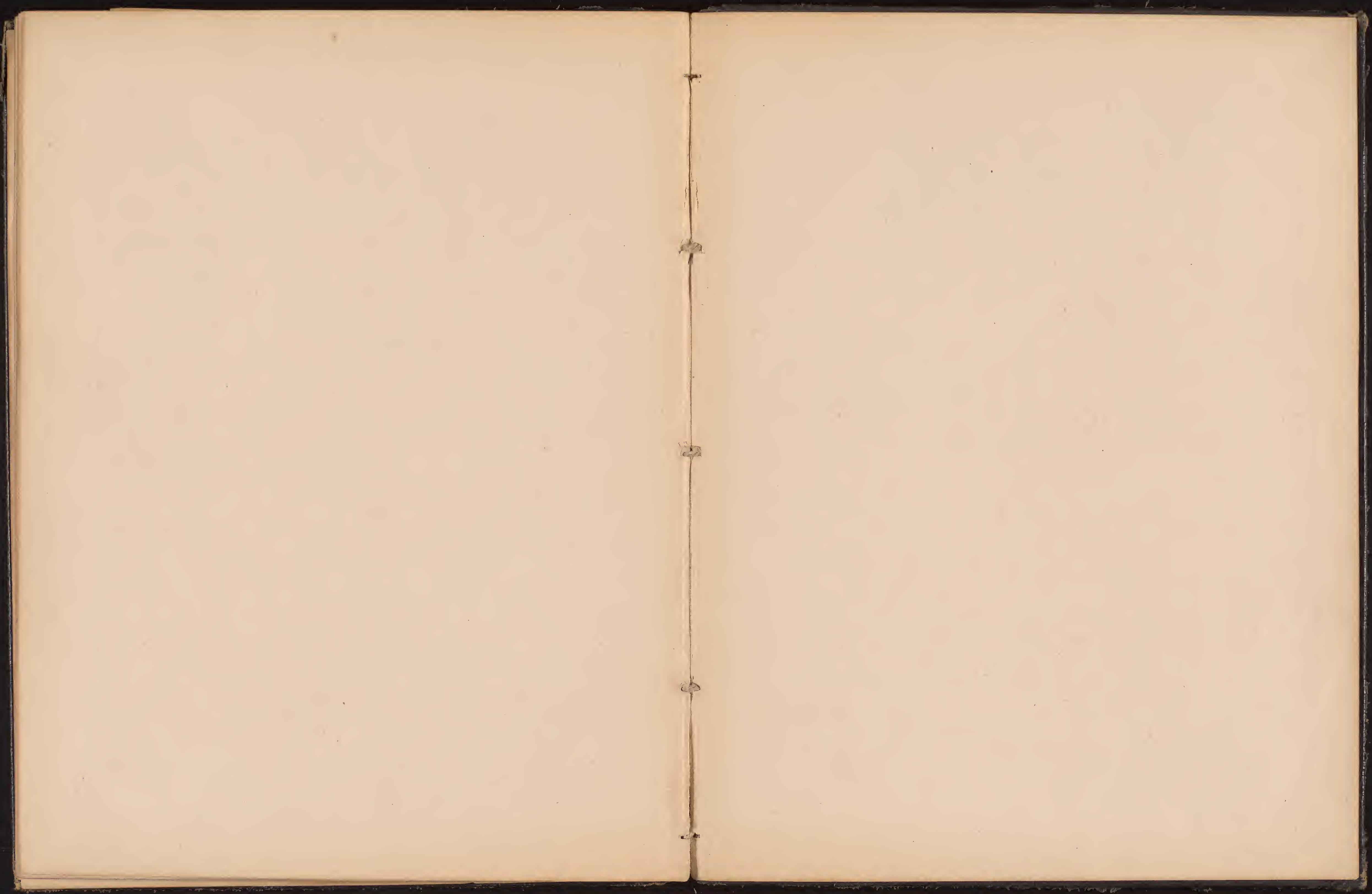
B. Falls, Tex.

1 m. east 3 miles west
17-18 m. n. of Seymour
road to B. Falls

4 m. n. of section house
1/2 m. n. of Seymour

W. Bowditch
100 ft. sand
100 ft.

Beds sand & white
white stone
100 ft.



Elevations in S.W. Wis. lead region.

A	Anaston 849 Albany 818 Argyle 808 Benton 878 Broadhead 798 Brooklyn 978 Bren 1078 Blankardsville 758 Bloomington 905 Benton 762 Big Patch 817 Belmont 828 British Hollow 865	C	Cassville 608 Castle Rock 847 Cross Plains 1198 Calamus, dep't. 812 Caledonia 889 Clarno 935-	G	Glenn Haven P.O. 606 Gibraltar, dep't. 783 Hurricane Grove 941 Home P.O. 978 Hazel Green 938 Highland P.O. 1161
B		D	Darlington dep't. 802 Dayton 818 Dickville 934 Ellinboro 689	H	Jordan Jamestown -- 858 Jordan 821
		E	Elk Grove 898	K	Kings Mills 723
		F	Fremont 1168		Mount Hope 1076
			Fairplay P.O. 798		Mount Ida 1168
			Fayette 1053	M	Montfort 1093
			Linden 1078		Wiggle 808
			Liberty Ridge 1144		Meeker Grove 835-
			Lancaster courthouse 1080		Mineral Point depot 935-
			Little Grant 828		Martin 865-
N	New Diggings 792 North Andover 838	R - W	Wyalusing 611		Monroe 858
O	New California 989 New Glarus 968 Oakley 918		Rockville 926		Sylvester 865
P	Patch Grove 1060 Potosi 782 Platteville P.O. 835		Simsinawa trading 926		
	Perry 1038		St. Rose 994		
			Washburn 841		
			West Plate Monad 1272		
			White Oak sprgs 928		
			Skullstring, sh. house 1018		
			Union mills 795		
			West Blue Monad 1729 (?1224)		
			Wota — 996		

Elevations at Cincinnati & vicinity.

Zero mark, Ohio River 427.4'
Low water " " " 429.3'
High " " " 498.5'

