

1908 1913

doc. 107

Trip with Barlow, Stoltedahl
and Bell.

Darlington, Md. and W. Va.



Am. J. Entom. Soc. 810; Dr. Fitch St. Cincinnati

Phil Schuchert 758 Wells St. Cin. O.

A. E. Schuchert 3937 Regent Ave, Howard, O.

doc. 107

Charles Schuchert
Yale University
New Haven, Conn.

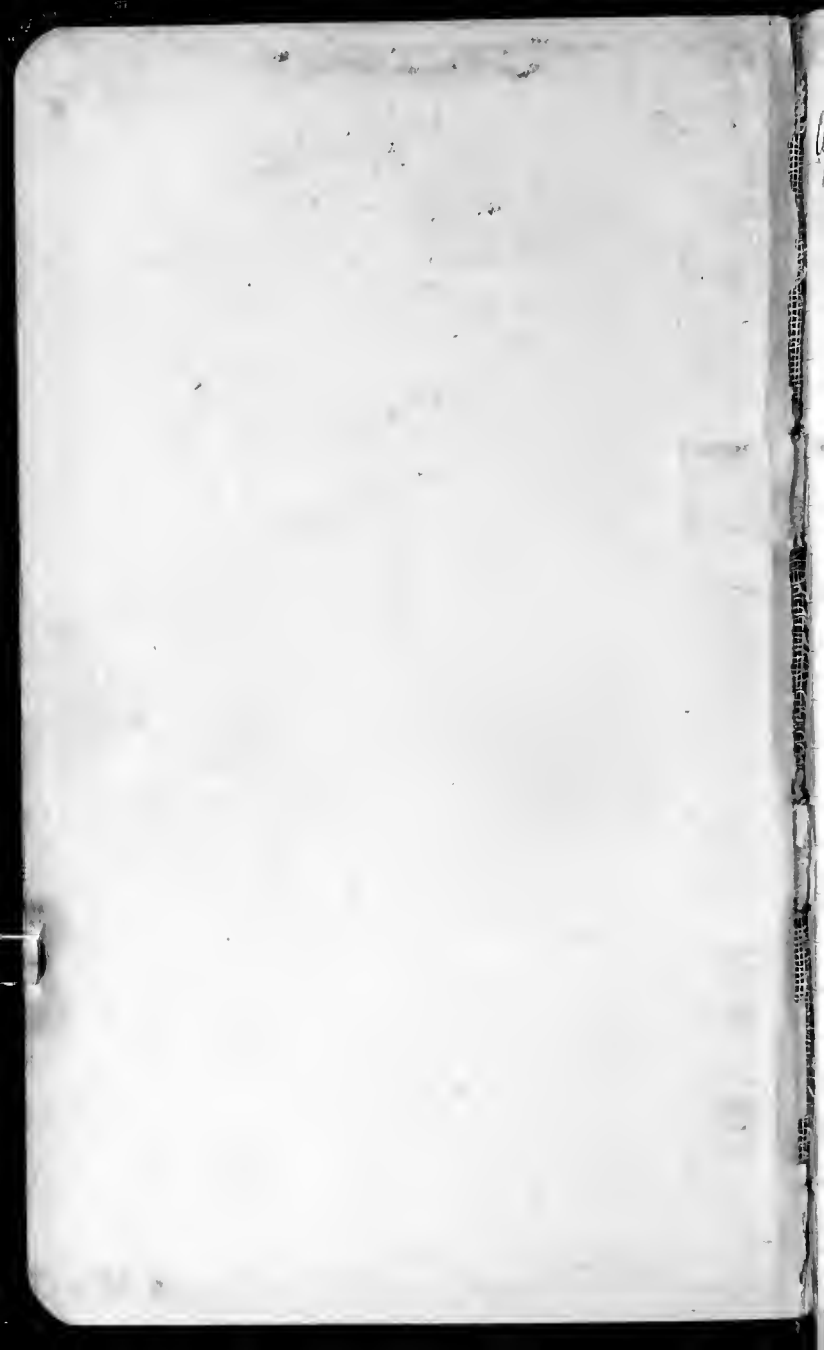
1912. 1913

3252

Apr. 21 - May 4, 1913
Md., W. Va.

3022

sep. 11, 1908
Md



- April 22 Reception at H. S. G. M.
9 P. M.
- " 23 Reception Carnegie H. of Wash.
9 P. M.
16th and P.
- " 24 Annual Dinner.







April 21 - 1913 New Haven.

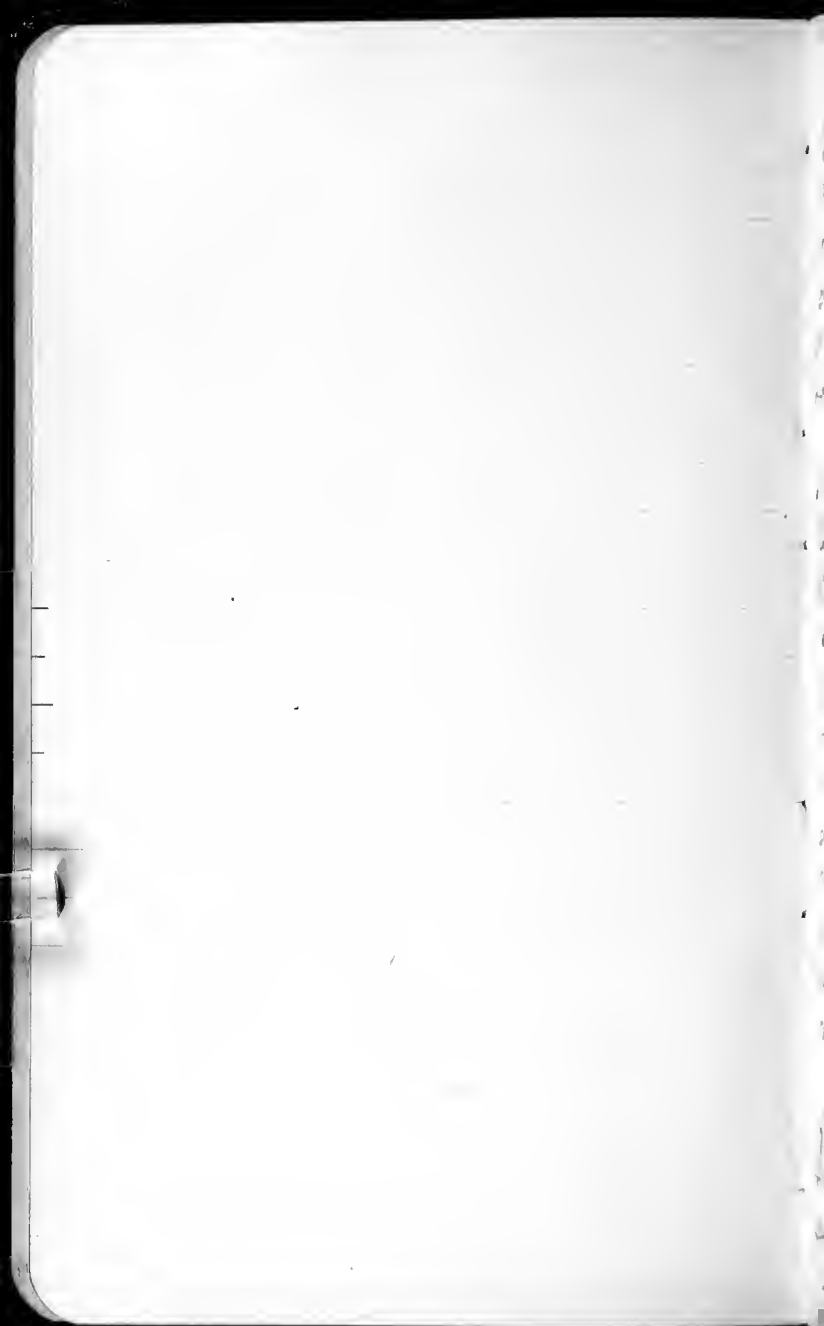
Left on the 8 A.M. and at 10.10 at New York (P. R. R.) and arrived at Washington at 3.20. Stopping at B. Hotel. Had the company of the critical Professor Hastings.

April 22 - 24 - 1913 Washington

Attending the Annual meeting of the National Academy. The Semi-Centennial meetings. This time a rather social affair than a gathering listening to a heterogeneous mass of scientific papers.

Of male members elected to the Academy were Professors Pierson, Harrison and Orndel.

It was the year of Presidential election. First a preferential roll was taken and about a dozen names were nominated. Each roll got one vote, a rather sad affair for Osborne. Wilson of New York got 9 while Welch of Baltimore and Walcott were the leaders. Wilson with more and so the vote was on the leaders. Welch over over Walcott



by seven votes. The whole affair was said
to have been injurious to Cattell against Hallett
on the ground that Washington men should not
dominate the Academy. It is was the worst
mistake the Academy has ever made as will
be seen later on.

The vote then was on Vice President and
a course all were agreed to continue Hallett.
He at once withdrew and accepted. Then
Remsen got on his feet and made a fine
speech in Hallett's behalf that he
should not withdraw. A speech of no value
because it was too late. Hallett did not
withdraw and he was of course elected but if
anyone supposes that he will do the progressive
work of the Academy he is wrong.
Hallett. If you want in his place I would
not even have allowed the Academy to
vote me in as Vice President.

Day was elected in place of Hume
and is wanted to withdraw. Day will ^{make} a fine
Secretary but is I think we would have the
support. Cattell is no longer on the Council,
a good aidance.

Triassic limestone conglomerates.

On Tuesday after seeing the Cambrian limestones I am now certain that the Triassic conglomerates are derived from these limestones that once extended across the Blue Ridge and Catoctin Mountain. The milky white and banded limestones are still present in great abundance west of Harper's Town. The fact that the Triassic conglomerates contain no chert is due to the different climate that prevailed in Triassic time when compared with the present one of today. The former was arid and produced no residual clays. As there are no Cambrian quartzites in the Triassic conglomerates we must then assume that these did not extend across the Blue Ridge or at least not across Catoctin Mt.

Fix of my geologic maps accordingly. Give these Triassic time for the wide area of continental deposition.

Section from Blue Ridge to Washington about 55 miles.

Way

Piedmont Plateau
44 miles or less from Washington to here. Section
Catactin schist

Granite

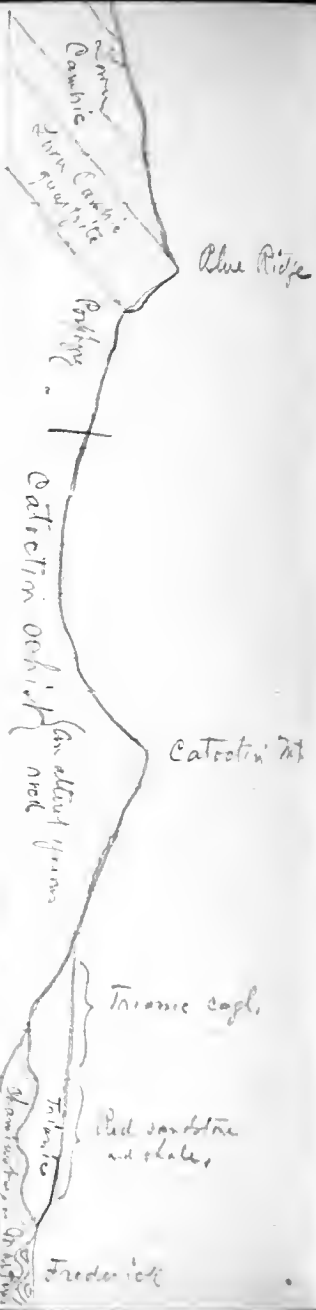
Full size

bedrocks

Strata

Continental Platform

High and low, in mine

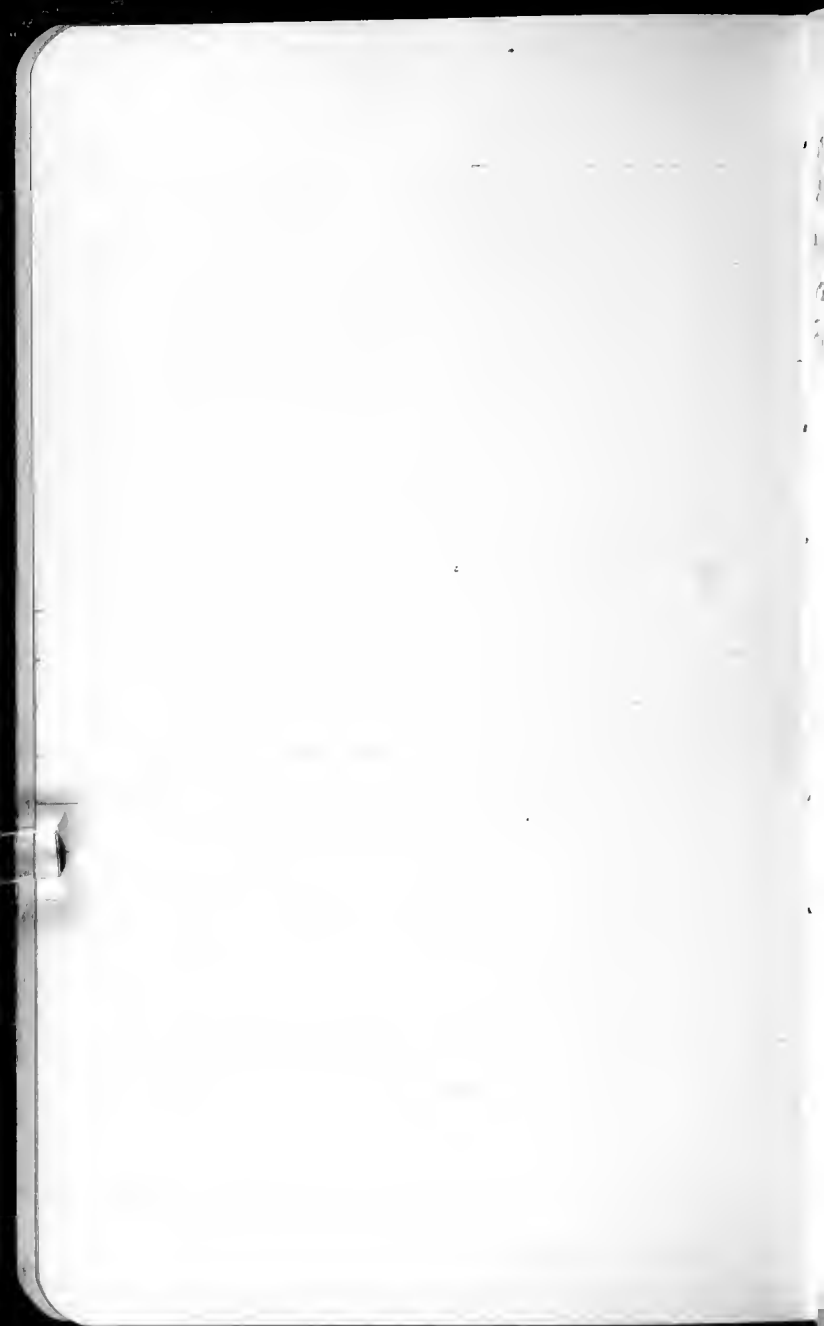


Nov 26-1913, Saturday. Washington.

Left on B. & O. at 9:10 for Washington Junction to see the Transition to the east. Just east of the station appears the lower Triassic the limestone conglomerate. Then a small valley with a fault and then the higher red sandstone and red shale of the Triassic. Farther east appears the Catoctin schist. The same schist makes the transition west to the west 1/2 mile of the Station. Best seen at Tunnel at east of station.

Took 2 photos of the Triassic.

Left Washington Junction at 1:11 for Frederick Junction. Train later left at 1:55, got to Frederick at 2:20. On the way to Frederick saw considerable of the Hamburg limestone (400 feet thick) and lower Hamilton (400 feet). All is much serrated as that considerable undulating & deformed. Saw no more of all fossils but Gardner says he has seen a small *Batrachium* 1/2 inch long, but otherwise like *Batrachium* and other Black River - Lower Trenton fossils but of the Hamilton type. This li. is said to be 99' thick. Gardner said he saw across Catoctin Mt. and the Blue Ridge to the west. After getting well out of Frederick are more upon the Triassic and conglomerate and then the Triassic conglomerate, and finally a long



distance of Carleton's exhibit. First across the Carleton
Mts. and then the valley beyond. Finally we saw the
outcrop of the blue sh. made of Lower Cambrian quartz-
ite. These ridges are probably 800 feet above
Frederick and Hagerstown.

The Lower Cambrian is nearly 4000 feet thick.

In these Cambrian limestones there is considerable intracrystalline conglomerates, that are most common in the lower zones of limestone. The pieces are then always less than $\frac{3}{8}$ of an inch and of any length up to 3 inches. They are commonly around 2 inches. Some pieces of the lower zone limestone are more often horizontal though they often stand at various angles. Bader calls these "edge-wise conglomerates" but the rule is not typical from standing on edge. The matrix is undoubtedly due to wave action on shallow sea, sea is depths of more than 100 feet and less than 200 feet.

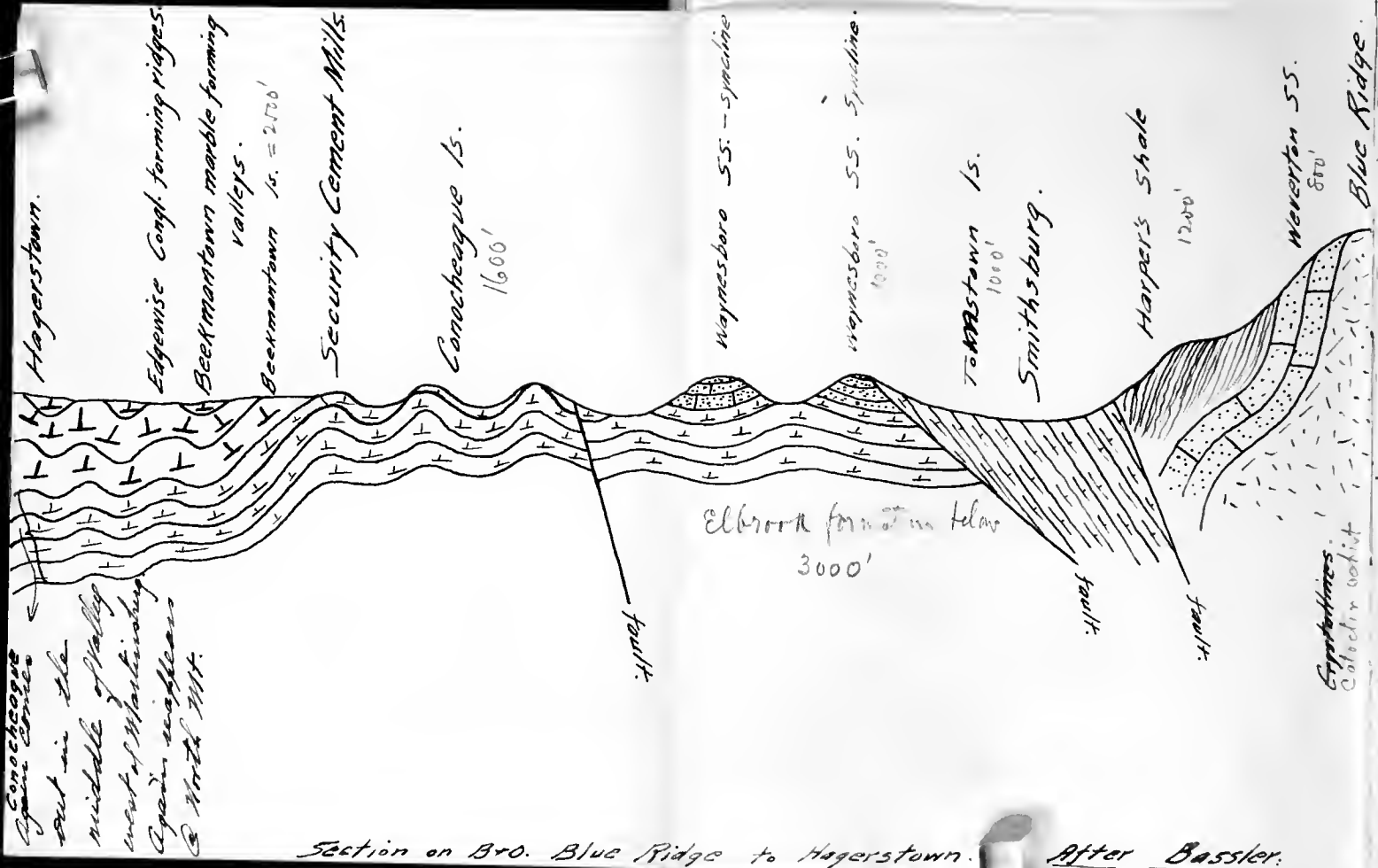
April 27-1913. Hazleton. Sunday.

Got up at 6 A.M. to take the two train on the Eastern Main and for Smithsburg. It was dark and drizzling when we started and began raining at 8 to keep it a full day. Got wet.

To the east of Smithsburg we saw the crest of the Blue Mt. which is Herkimer quartzites. The country between Smithsburg and the great Cement Mills at Security for seven miles is occupied by Cambrian deposits, and the other two miles to Hazleton by the Beekmantown. In all this distance hardly any fossils in life seen and we saw none until we got into the Beekmantown.

The limestones of the Cambrian are usually banded with layers of light blue limestone and thin zones of impure sandy gneiss. In weathering the limestone melts away into the sandy bands some out as thin redish plates that are hard to see in a mass. In certain zones the banded character vanishes and one then has a mass of pure limestone in heavy beds.

The Beekmantown is not so regularly banded but the zones of pure limestone and those with impurities are irregular throughout. In approaching the nodular



Section on Bro. Blue Ridge to Hagerstown.

After Bassler.

Character. There is more or less, very fine intra-
stratified conglomerate but the pieces are never large.

U. C. Ozarkian
3000-4000 feet

Canadian
2700 feet

Cheziyan
1000 feet

Maawikian
2800-3810 feet

Manitowishung St.
2000'-3000'

Sandstone - Eton region
Black & blue shales - thin
Argill. St. 1/5. = Trenton

Chamberlain ls.
800'

Medlar clay ls. with
Schistocleus, Platystrophia
etc.
Massive blue shaly ls.
with trilobites etc.

Stones River
1000'

Massive dove ls. with Lept.
tabulites
Massive blue ls. with Pl.
neguna & black chert.
Massive dove ls.
Large & small Platystrophia etc.

Berkman ls.
1900'

1500' finely laminated
shale - ls. with 400' of
thin & milky marble
lenses

Horseshoe ls.
800'

400' blue ls. full of
conglomerate - with
well interstratified sands
laminiae
400' blue gray massive
ls. full of fine clay congl.

Conococheague ls.
3000'-4000'

Blue ls. with sands
laminiae - conglomerate
beds - see Platystrophia
fama = Paratrypa

Black
2000'-3000'

Gravelly & shaly ls.

(over)

Conochocore

W.C. 3000-4000 ft.

Alypsus sh. } Red sh. + red shale.

1000' +

Tomolow Co. } Lo. + shaly marble.

1000' +

Antietam ss. } white ss.
1500' +
Hacker's Sh. }
2000' +
Wewehone ss. } Purple ss.
1500' +

Lower Cambrian 6,000 ft.

Stylon formation

Pre Cambrian volcanic.

25.

29

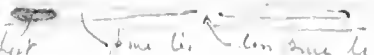
1/5

line

no.

Character. There is more or less of very fine inter-
penetration of conglomerate, but the shales are more homogeneous.
All of which goes to indicate that the water was
shallow and the bottom under the influence of wave
action.

Certain of the Beulmantown horizons develop
dark to black ~~quartz~~ ^{iron pyrite} that eventually lead out veins.
The dense horizons often develop septaria like
joints while there may be as well an abundance
of tension cracks filled with calcite. The thick
milky-white to white marble beds of Beulmantown
develop a peculiar radiating type of quartz that
is mistaken for vein quartz. This B. quartz how-
ever is entirely due to metamorphism and only occurs
on the outside of the ls. and in the red residual
clay.

At the lowest stage seen in a fence we saw
 some dark colored li. with black dots here and there
 the impression has been formed that diagenetic
 causes. In some cases the man was in inch to 1/2
 inch in by the 1/2 inch side. These small pieces
 layers like cementation formed in the same limestone
 here. ~~at~~  In other cases

it was the ~~it~~ ~~was~~ ~~not~~ ~~only~~ ~~that~~ ~~was~~ ~~changed~~, in places
 up to 1/2 inch thick. In such all the ~~same~~ ~~pieces~~ ~~and~~
 interfaces where ~~small~~ ~~molecule~~ ~~by~~ ~~molecule~~ ~~with~~ ~~some~~
~~of~~ ~~the~~ ~~inner~~ ~~and~~ ~~largest~~ ~~stable~~ ~~little~~ ~~membranes~~. The
 latter group are described out leaving holes in the
 shell.

un.
Williamport
in May-
xposure
in n
in fact
the
initially,
is if
a report
written,
planned

... season in Williamport one sees the ...
or autumn over threated on the lower ... activities, and
are one of the ... of the ...

... have said much of the ...
its attraction of ... some direct ...
... alternative with ...
... weather ... and ... sandy
residual fleshy pieces. The ...
are all ... pieces are ...
small. It is these ...
most often change into ...
... fields ...

April 28-1913. Monday. Hagerstown.

At 8.10 A.M. Took the trolley car to Williamsport west on the Potomac. We then went on the Western Maryland along the track to see a long and fine exposure of the Martinsburg. Barber says the Martinsburg is between 2000 and 3000 feet thick. In the lower part it is dark colored and well sorted, changing in the upper part to more and more sandy and finally to thin and coarse bedded sandstones. The top of the lower part is about Middle Tertiary and the top is in the Eden but no part is in the Massanutten.

Just at the old abandoned Western Maryland R.R. Station in Williamsport one sees the next or autumn over thrusts on the lower Martinsburg, and here one gets the gneiss of the Dominion.

We then saw much of the Zech's autumn with its alternation of thin greenish gray dark colored limestone alternating with irregular greenish gray li. that weathers & breaks and splits into sandy residual flaky pieces. The interstratification of beds are all narrow zones and the pieces are small always small. It is these interstratified embayments that most often change into chert with occasional thin zone green li. beds cracked out as a rule in the beds

The Stones River has or less of an alternation
of fine and impure shales, and is therefore
more fine li. Here again the intra-formational
congl. are present and for some are changed into
chert. These occur at the base of the Stones River.

Barber is mapping the distribution of
on the basis of the position of the limestone and
the residual chert. He says he has 35 different
Ordovician cherts. Then he also uses the top-
ography and even the character of the farm land
including fruit trees. Fossils are too scarce to
get. Finally the structure and thickness of beds is
taken into account and based on fossils.

Every now and then we come upon boulders
of Lower Cambrian sandstones, which occur to the
Blue Ridge, and of Juniata and Indiana sand-
stone near North Mountain. These are stream and/or
sometimes near brook streams, and at other times
indicate old rivers.

In another place we saw a little town, divided
from springs. These waters are found in Pigeon and so
to make up small beds sometimes of considerable
thickness.

At 2.10 P.M. we left on the B. & O. for Secretan



from where we walked to Staupen Ferry a distance
less than 3 miles to the river. It gave us a splendid
view of the Potomac valley.

Left at 9:12 for Washington where we
stopped over night.

Bessler's interpretation of the section from Martinstubing to North Mountain

Brook and Coburn 29-1913.



These systems may rest on a bed of volites. The top of the section is a thin bed of shale. There are zones of sandstone at intervals. Sometimes a thin bed of sandstone is bled directly over the Cretaceous. The volites are abundant in the Beckmann and in places their sandstone.

April 29-1933, Tuesday. Martinsburg

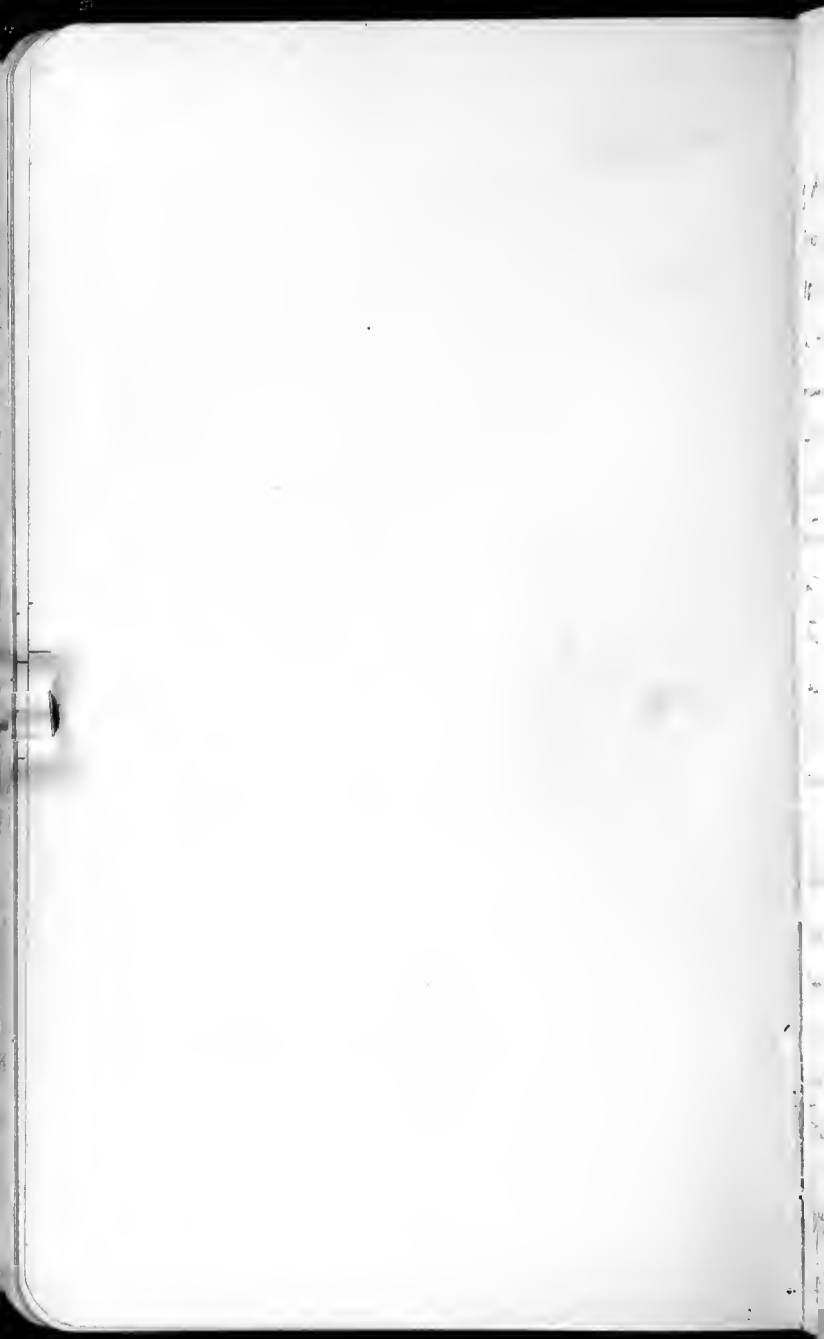
Started out to the base limestone quarries to the east of town.

The contact between the light blue weathered shale, Stones River and the dark bluish limestone, very sharp. The former is very bedded & locally fracturing while the latter is dark blue and nodular. About 25' or above there is a good one for Cyathophylloids, Praxinosira and Chloridictya, Praxinosira and Chloridictya, Praxinosira and Chloridictya, Praxinosira and Chloridictya, Praxinosira and Chloridictya.

See also a specimen in the town near north ... About 1/2 mile east of Rock Mt.



In this cut there are many Cyathophylloids to be seen and while it is not known if they are ... and the ... as cyanogenic still I finally concluded that Cyathophylloids must be cyanogenic and not algae. In places the material is not in ... masses but in sheets that are ... (as in diagram above).
place or ... = ...



Near Tatts station we had much evidence of shallow seas. First there was an abundance of sun-cracking; three zones, one of which had a thickness of about 10 feet. Second the small shells, Third an abundance in many zones of conglomerate - it appears to be of the same nature as the Fourth the heavy bedded generally well laminated dark limestone are made up of white and these are often white with interstratification of conglomerate pieces of small size. Fifth in a few places some tube seen large mud holes in the beds but in zones of interstratification of congl. The laminae are a fine dense blue line in some cases yellowish to brownish - these are bands having mud and some in sand.

This formation at Tatts is probably the same as the one and about 100 feet here exposed is one of the best evidences for proving the shallowness of these seas. One is supposed to see the amount of white connected with these beds and to fact or lites ^{occasionally} are in interstratification of conglomerate. Fossils were not seen in any of these beds. The line is probably produced by denudation of limestone. After it is almost gone, and of a exceedingly fine grain.

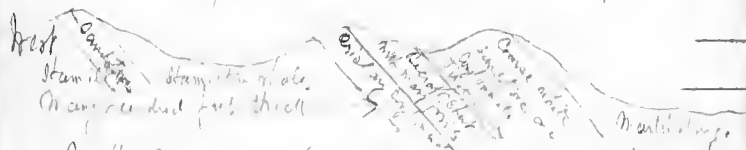
At N. Mt. the Beersoft has a thickness of not less than 32 feet. The fossils are from the middle. Ediacarites was common at about 25 feet.

At North Mountain the Beersoft has a thickness of about 20 feet. It can be well seen on the north side of the road. In my locality there are no large thin plates of Ediacarites, very alate and not very thin and not so much rounded plates.

No Tuscarora is seen at N. Mountain. Probably cut out by a fault overlying the Beersoft. The Beersoft is exposed by a fault at N. Mountain. At Wedgeville it is not ^{above} exposed there is exposure of Tuscarora. All of the Tuscarora may therefore be exposed.

April 30-193. Pedraza, North Mountain.

Left Manhattan on 3:30 A.M. train for North Mountain. The track a mile south west of Pedraza-ville. From north side of the road we came up a hill. The road was for Manhattan. The road should take Hamilton with fossils almost into the village. Here there is a road ^{west} up the hill ^{church road} across on the left side. This road crosses bed of conglomerate (white with well rounded pebbles up to 3/4 inch across). On the vertical mud white ^{bed} with ^{pebbles} fossils. The section is as follows



In the Dictionary of Fossils, saw no fossils. Seen a few.

In the lower *Chelonicella* *assurilis*, *Strophomena*, *Leptocoela* (*flabellites* form), *Leptocoela*, *Leptocoela*, *Leptocoela*. The thickness of the ^{conglomerate} is a heavy bed of white quartzite and some. It can be repaired by its nature. The thickness is not less than 50 feet. A small high church and cemetery is on the side. The two are ^{conglomerate} ^{beds}.

This is not the revolution Coeymans but rather the lower
beds and probably in the Devonian above the oyster zone
and about the time of D. B. P. Syphid. as beds. In this case
there might be a break between the Coeymans and the Tomb range.

for N. Mt. to C.R.
 distance \approx 5 miles in a straight line.

North Mt.	Cherry Run	Cumberland
Probably more	? 50	Cristiana (Homerock 22.5)
35	65	Beacroft about
about	36	Des. offhand 12-45
absent	55 = very	in line 79-13
absent	? 300	290
absent	? 300	as with coal 1000
50 Horseshoe	? 150	6 834
85	956	1500
		Junata 530
		\approx 3553 ft.

850/ft in 5 miles = 174 ft per mile. N.M. to C.R.
 3350 " 71 " = 47 " " N.M. to Cum.
 2400 " 55 " = 44 " " reverse to Cum.

Stopping at the Spangler Hotel, Hancock, Ind.

Linn

This horizon is probably Greenwood. Botemdale beds, calcareous.
 Next higher is the ^{thick} Fortland 36 feet thick. It
 is a series of thin bedded sandy limestones derived of the
regulation cherts as one seen above Cum Island, the
macropores is very common in known 15 feet. It has
 here a decided tendency to rot down into a porous
 sandstone ^{and residual clay} with the fossils as seen in the

Recraft 65

^{some blue & red} very rich beds for about 16 feet full of chert. There are
some of them in beds separated by shale gray the whole
another with vertical staying with chert, 25 feet thick
 At the top are interbedded beds the beds are 25 feet
thick. Towards the top the li. has considerable small quartz pebbles.

The thin beds is at the same level as the
stream. Thickness is considerable. It is a
sandy dense thin bedded limestone stone.
 At least 10 feet ^{at the top} can be seen. The detached is with
 the lenses are did not show to see if it is dis crete.
 The top of the lenses is may be seen as the
where on the well are the extending in thin bedded
hard gray crystalline limestone with many small pebbles
pebbles are seen in the beds is the beds is the
is in pebbles data, and may with the beds may
be seen 20 and 30 feet. At the top is quartz pebbles
conglomerate.

Further west these red beds have conical fillings instead
of calcareous concretions.

The natural cemented beds are of iron or other of sand beds
more like sands than the long or calcareous of this sort, on the
proximity of art. clinal and epicalinal rocks these beds are exceedingly
crushed. Some of the harder long beds are curiously contorted
may. Took a picture of one of these contorted beds. The upper harder
harder layer is folded while the softer beds below has been shored
into the hollows for the concretions. As a rule the iron or other
beds pass into the matrix but in some cases are brecciated. ^{near} where
the picture was taken the beds are much crushed.

May 1-1913 Thursday, Hancock.

Started out to walk from Hancock to Tonoloway along the Western Maryland R.R. Checked one passage to Cumberland.

(on the north side of Lanes)
In the first cut east of Round Top we see an arch in the red talin. The sandy dark red bed are full of long concretions and these are arranged vertically. They are not plants, but concretions of lime ^{with the drusey fine particles of the grains} rather than a rising and sinking water table, but that they are exposed to the weathering, percolating water flows along these vertical zones and changes the ferric iron to the green ferrous form. About 10 feet are exposed in the center of the arch ^{with similar nodular zones.} on which are about 10 feet of thin bedded red shales. ^{above the red beds} The grey bed here are not seen cracked and similar to the Grammaticis is a water can be seen going through a bed 5 feet thick. The same cracked zone is exposed at least 50 feet.

Lepidodictya ^{are} common here in the same cracked red. The ^{actual} cement red follows at once above the base of the red beds.

Opposite Lee Hill, Cum or at Loc 53 there is good exposure of Clinton shales with the vegetation good. Here are many large *Beysichia*, have taken a piece of the ferruginous limestone.

Beesraft should be here because of the considerable
thickness at Ferry Run.



May 2-1913. Cumberland.

Started into one Hills Creek section in the Penitents. Many of the ^{red} sandstones ^{have} vertical tubes as we saw yesterday in the Salina, some of some have vertical linguistic concretions but they are rare. The vertical tubes ^{however} are common.

The Arthrophycheus parvulus eggs in in soil, but at 30 feet beneath the shale ^(or thin top of the) Tuscarora. The introduction of Clinton time was got then are no Clinton fossils. These Arthrophycheus occur so common on the under surface of the sandstone just above ^{green} shale bed ^{which} is nothing to 4 inches thick. The Clinton fossils are ^{the result of} solid bedded massive about 15-20 or so. ^{have} no concretions.

The bed between the fine Penitents sandstones and the shale Tuscarora can be determined ^{above} the Rock where the spring comes out and where tramp slaps. This contact may be determined further ^{on} toward Cumtland along the Box O road at the end of the Brewers residence stone road. It is rare were the red Penitents white Penitents are always separated on the evidence of the orange color.

The time road must occur here in spite of the decided ^{similar} character because the Tuscarora is type of Medina and the Penitents cannot be other than the Ohio Penitents. Clinton begins in earliest Richmondian ^{as far as even in Massamethian time} and continued well into Silurian time.

I can see no evidence for calling these fourfabry li.
all of a type. Why it should be broken from the top
is one of the old's imaginations. When I was out with him he
saw some residual clay between the uppermost layers and
this overlaid rock and so he interpreted as an old re-
sidual (Quaternary) clay. It is residual of today.

a muddy limestone
The top of the rock is covered with small sun cracks.
The rock is hard pure limestone in many places.

It is a dense limestone that during weathering
forms a hard crust.

This is a very hard rock.

[DBB = Devil's Backbone -
ridge on W side of Wills Mt
+ E of Wills Creek] C. Nace
5 km NE of Kreigbaum

The bottom surface of the *Cocymans* at the D. B. B.
is a decided *remarched*. Also see the immediate

doc 107

MARYLAND GEOLOGICAL SURVEY.

VOLUME I, PLATE XII.

W

E



VIEW OF "DEVIL'S BACKBONE" IN LEWISTOWN FORMATION,
NORTH OF CUMBERLAND, ON THE BALTIMORE & OHIO R. R.

presence of *Conia* & *Stella* will mark out the *Devil's Backbone*
and the *C* the *Devil's Backbone* which characterizes *upward*.

I can see no evidence for calling these fourfold li.

← ridge on W side of Wills Mt
+ E of Wills Creek] C. Nace
0.5 km NE of Kreisbaum

The bottom surface of the *Coccyzus* at the D. B. B. section is decidedly sub-eroded. Also of the immediately adjacent top of the *Leptaena*.

Got some very large *Leptaena* in the thin ^{conglomerate bed} *Leptaena* layer near the base of the D. B. B. section, about the

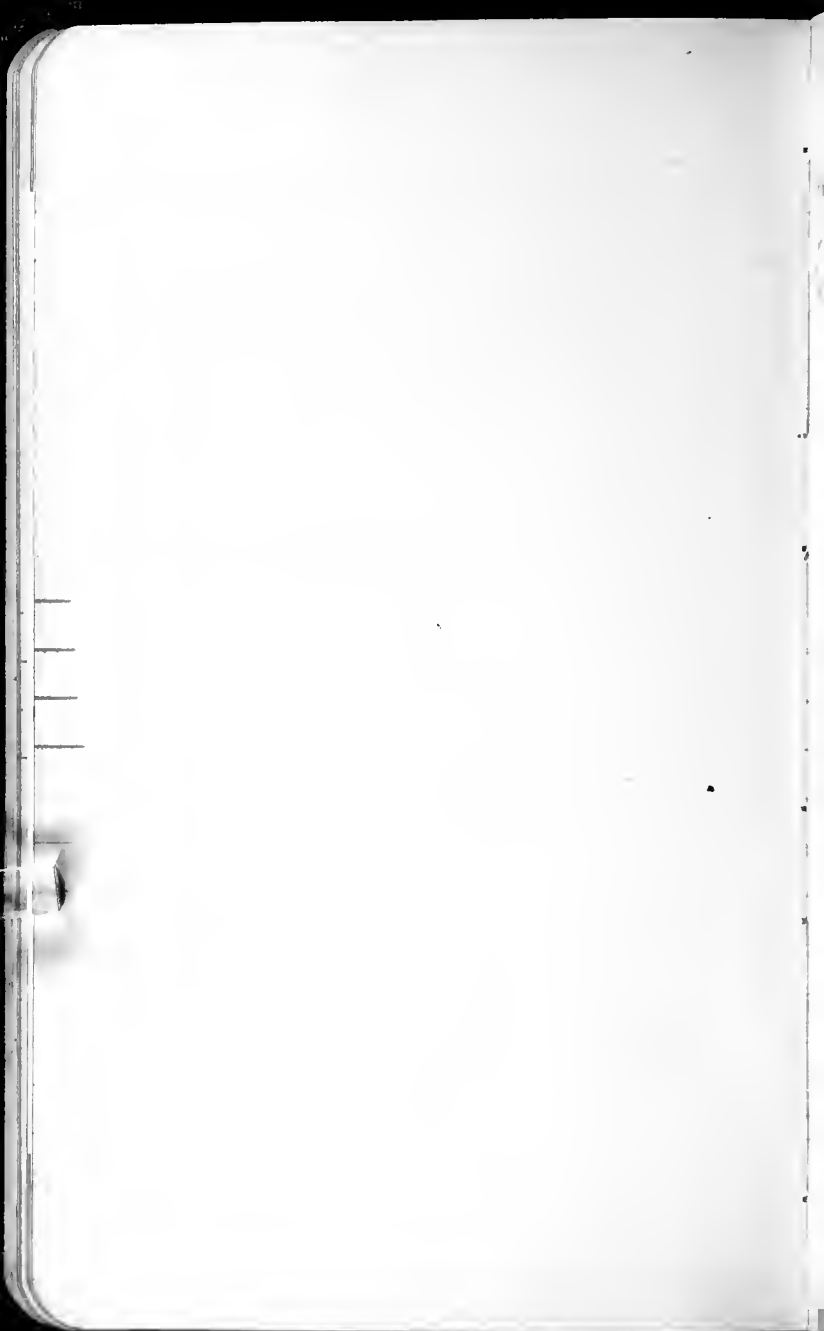
The *Leptaena* layer is the black shaly *Leptaena* which is a greenish *Leptaena* in road metal, hence could see but few fossils today.

Orripanville, Md.

In the ^{new} *Leptaena* band of the Western Maryland is a part of the *Leptaena*. It begins in the *Leptaena* and shows the ^(Doubtful form 139 feet) top of it. Then the *Leptaena* is about 8 feet. Followed by the thin *Leptaena* *Leptaena* in white shaly with a thickness of 37 feet. *S. maculosa* goes up to the shale and

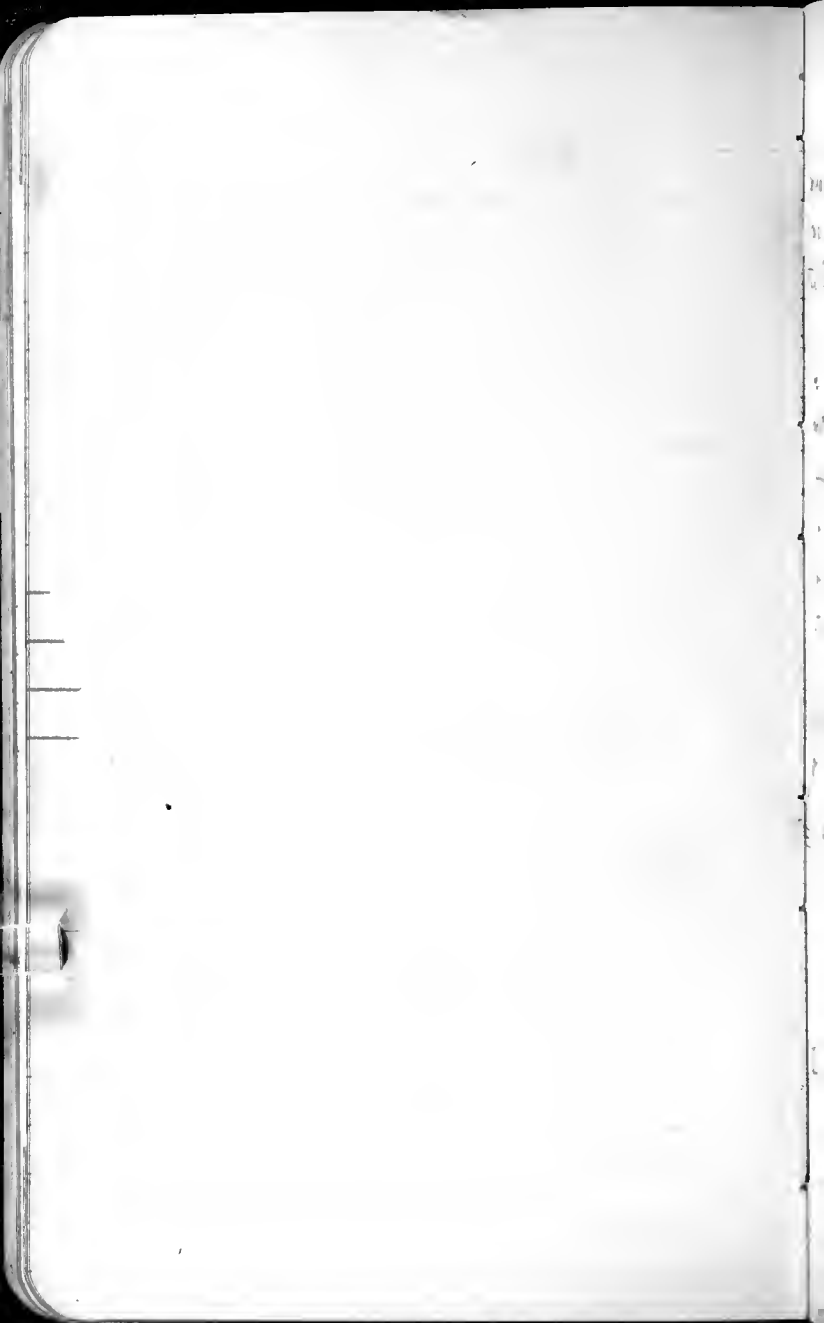
The *Leptaena* shale goes here with *Leptaena* ^{hard} *Leptaena* as a 200' *Leptaena*. There is no transition. The thickness or thickness 23 and 50 feet. In its *Leptaena* *Leptaena* *Leptaena*.

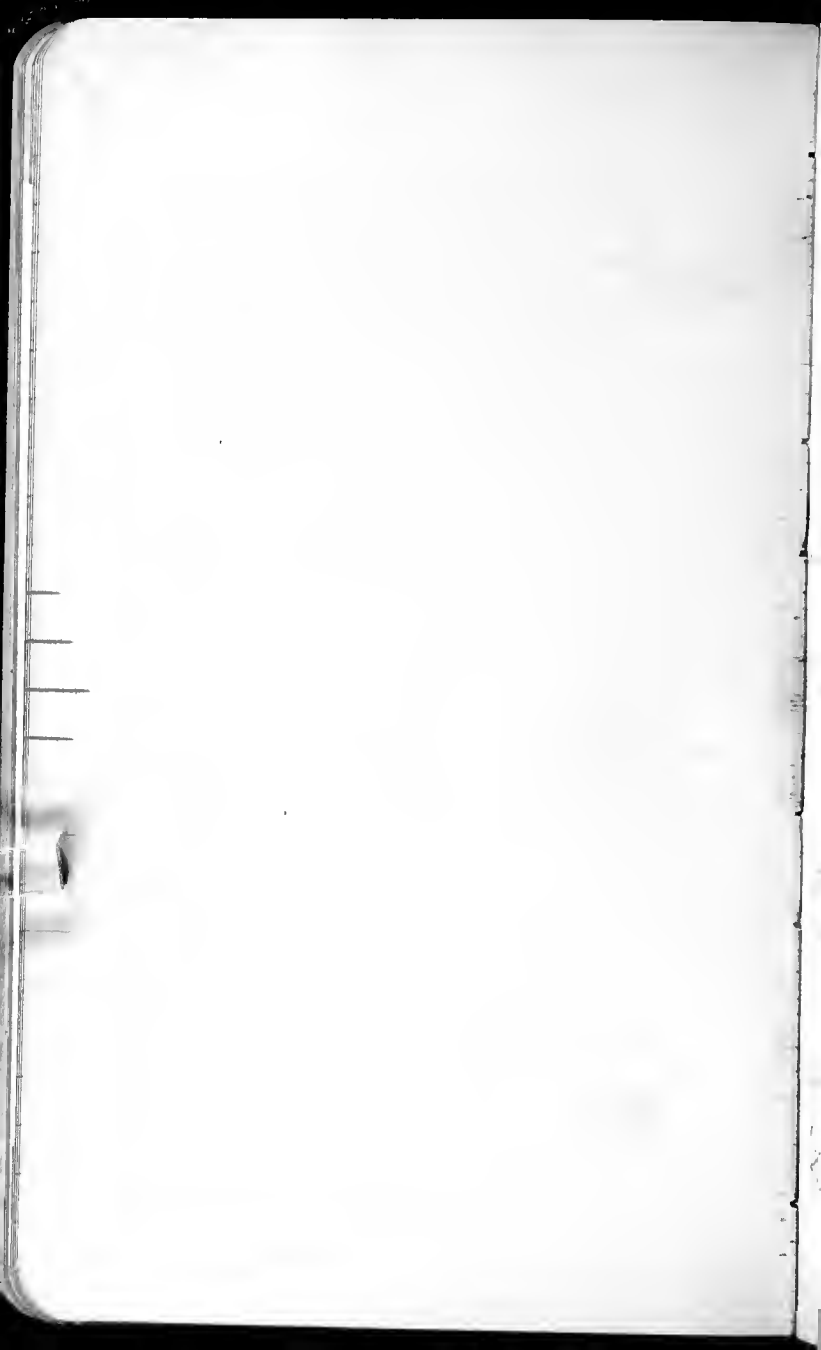
Then the *Leptaena* *Leptaena* of the *Leptaena* *Leptaena* which at once at ^{the base} *Leptaena* *Leptaena* is a 200' *Leptaena* followed by *Leptaena* shale like *Leptaena* *Leptaena* *Leptaena* and then the *Leptaena* *Leptaena* *Leptaena* *Leptaena* *Leptaena*.



From Conjansville walked over to Cash
Vally. The up stream is as always and is getting
further in front. Then took the Frothingham
into Cumberland.

The and 10ms here . . . of the seen in the Eastern
Maryland col. a





May 4 1913 Sunday. Home to New Haven.

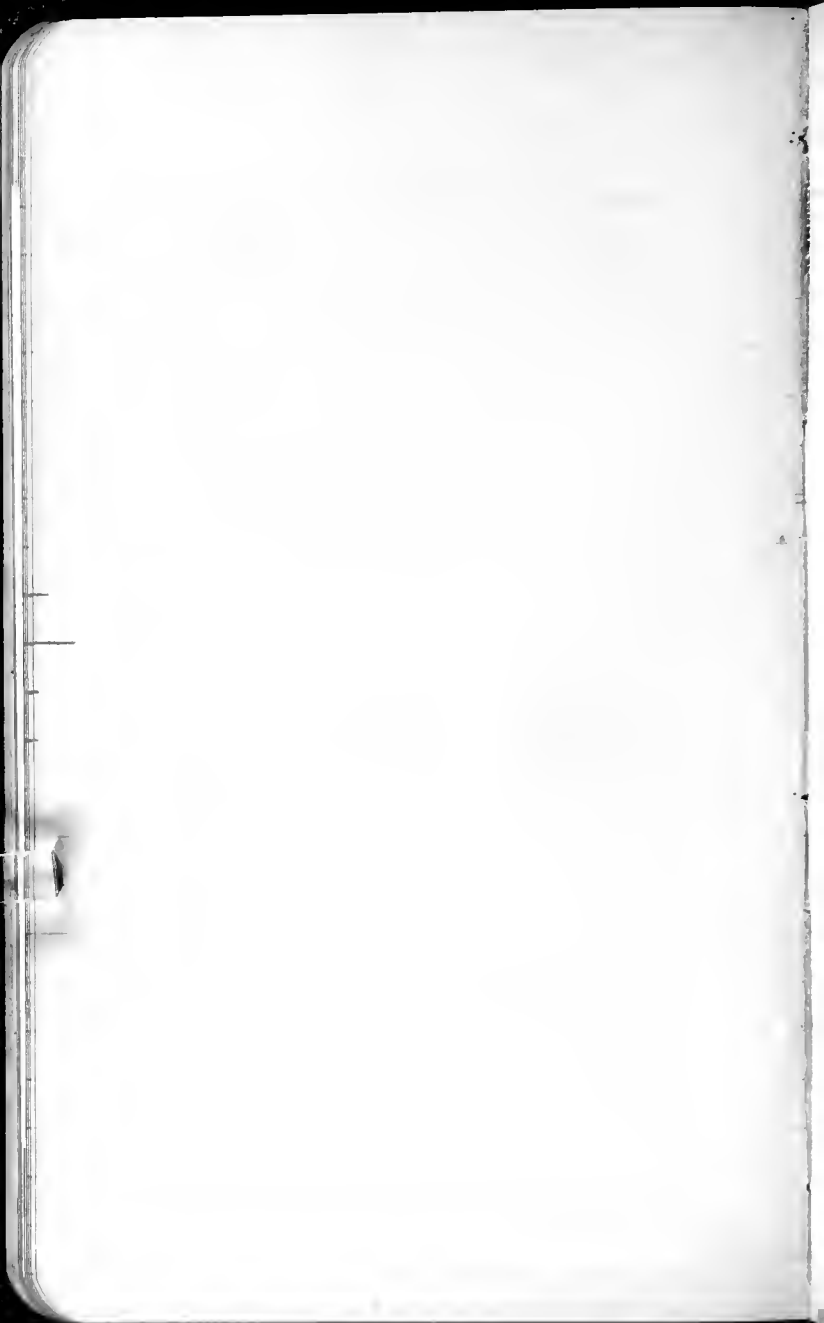
Left Connecticut on the P. R. R. for Altona on the 7:30 A.M. train. Will get to New York at 8:05 P.M.

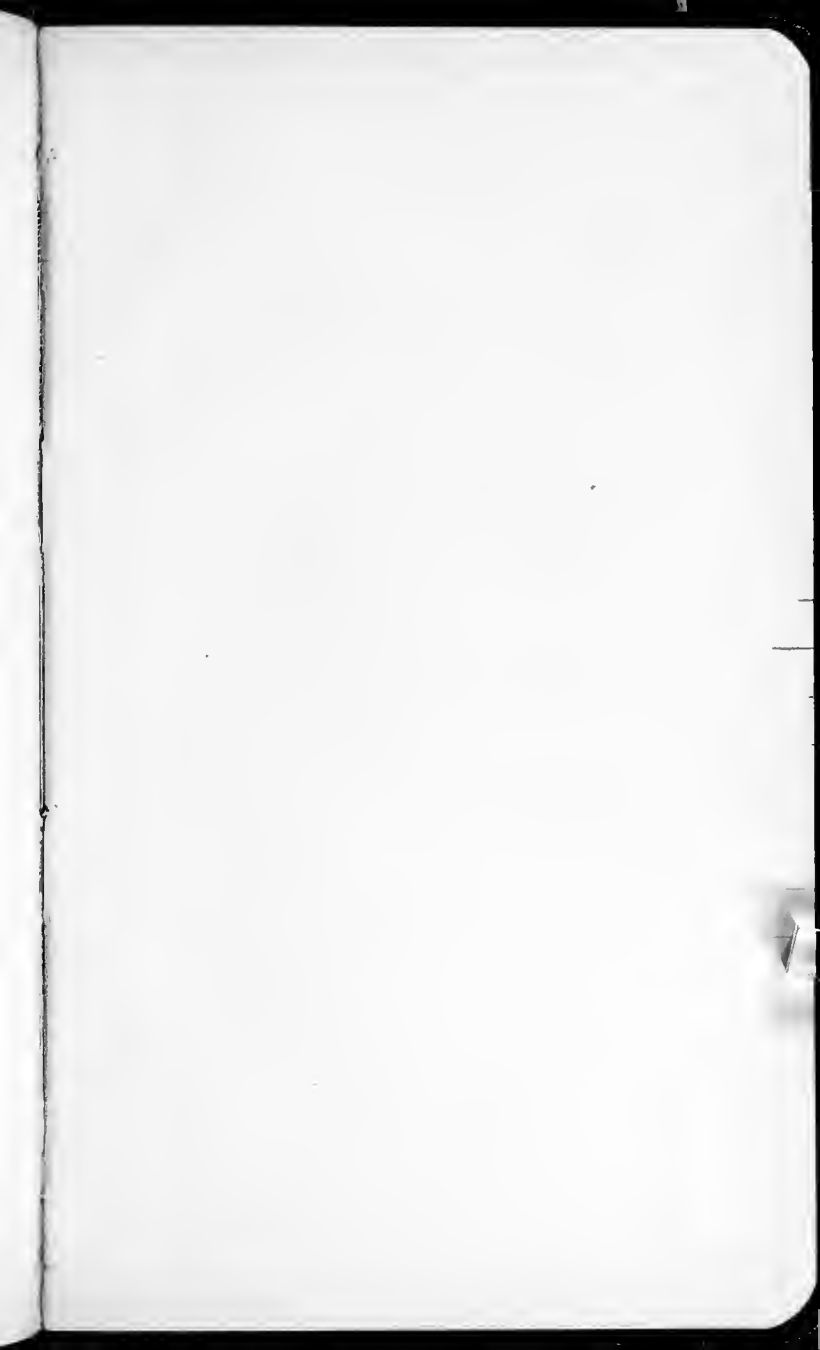
What is the age of the red shales and sandstones interbedded east of Saratoga? Are they Proterozoic? They ought to be so.

How far east of Lancaster does the Cambrian extend?

Is there an angular contact between the limestone at about 40 miles east of Philadelphia? What does this mean?

At Gap we cross the equivalent of South Mountain of the Blue Ridge. About 40 miles west of Philadelphia, East of the Gap occur quartzites, then schists - that may be Catoctin.

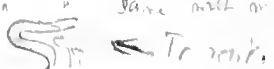









Film I

- 1 Spikes
- 2 Glendon park (Pleasanton) on Archean Spikes
Washington, Ent. to Nat. Ford Park
- 3 Head of 16th St. along Columbia at by on Pittman
with angle staying below into White section. Spiked.
- 4 Anacostia (Long Hill Road) on bridge & line along Spikes
definitely in the same line, when by via
Lower gray of Lafayette (Spikes) and the Lafayette
park.
5. Red Triassic section (April 26) near Washington
Above angle 8-25.
- 6-7 Spikes
- 8 Triassic li angle 53 feet. 32 south of James Mt
- 9 Same as above, a fold - Tomstown (L. Camb.)
nearby section about one mile April 27-1913
- 10 Herndon W. just east of Lees Ferry. April 28-1913 I.
- 11 " " same with more time. To show folding

- 12 Schistosity and line in mountains just east of M.
April 29. A fine illustration of schistosity and 

Losses due to underexposure.

Film II, Laminated Stroms near at Tolls. In center white and interform structural arrangements. 32 ft. T. 10 feet.

Both are practically obscured.

2 Thin cracks near Tolls.

3-4 Ripples near Tolls. 3 obscured. 4 fine

5 Cryptogon 400 feet above base of local mountains.

2 miles west of Tolls. 5 and 6 obscured.

7 Cryptogon shown, April 20-10 3. 8 feet. obscured.

8 May 1. Near Round Top. Caliche line excavation in road Lelona

10 feet built 32

8 obscured.

9 May 1. Fold in Lelona at Round Top 50 feet 32 built.

Note the crushed beds in apex of fold at top. Last of red beds in crushed arch. To left come in the concretions.

10 Arch in concretions, Round Top. Height inside of arch

marked. Note coloring of green bed around arch.

11 Lelona thin cracks. West of Local 53. Good surface

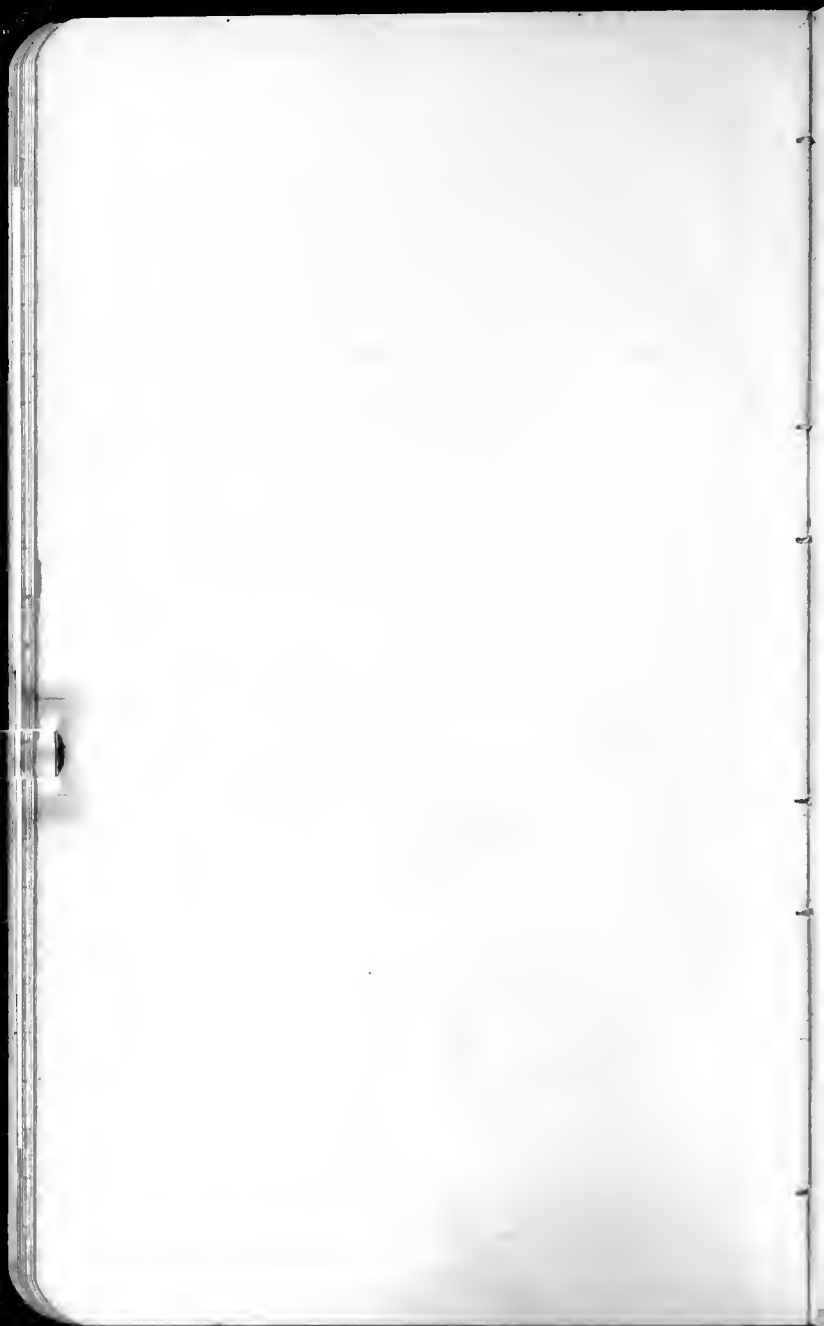
11 ft $\frac{1}{2}$ second.

12 Near Tonoloway. Picture of best Coccoloba edge, as canal

Film III

1 May 1 Concretionary and dike structure in Lelona one mile east of Tonoloway. Look like stromatolites but the bedding can be followed straight over the folds. Picture not fixed

2 Thin bedded basal Lelona along plenty. Near Tonoloway.









$$\begin{array}{r} 12 \overline{) 310} \\ \underline{24} \\ 70 \\ \underline{60} \\ 10 \end{array}$$

- (4) feet Barents
 7 1/2 " 2 "
 25 " Mrs. Kestland
 30 " Oregmans
 20 " L. "
 33 " Bully Kegan seen.
 10 "

$$\begin{array}{r} 165 \\ \underline{13} \\ 133 \end{array}$$

$$\begin{array}{r} 2400 \\ \underline{20} \\ 220 \end{array}$$

$$\begin{array}{r} 180 \\ \underline{10} \\ 170 \end{array}$$

$$\begin{array}{r} 71 \overline{) 3300} \\ \underline{284} \\ 460 \\ \underline{421} \\ 39 \end{array}$$

{ Romney = Hamilton doc. 107
 Onondaga
 Ridgely = Upper Onondagian 258 feet
 Scherer = Lower Onondagian 90 feet
 Deserof 85-125 feet
 New Scotland 12-45 feet
 Coeymans 9-13 feet
Keays 270-290 feet

{ Tondowag = Highest Onondagian } 1000 feet.
 { Hills Creek = Onondagian }

Clinton
 Thickness 584 feet } 834 feet
 250

Tuscarora = Onondagian
 Thickness 287 feet.

Juniata = Richmondian
 Thickness 530 feet
 370 seen - Hills Creek.

Permian 1890

Dunkard 400 feet. = Permian.

Permian - Permian

Manassas 238 feet.

Oneonta 630 feet.

Allegheny 325 feet.

Pottsville 296 feet.

1285

Mauch Chunk = Higher Tennessee
800 feet.

2. Camb.

Greenbrier = Chester
227 feet.

Pocahontas
255 feet.

Permian 5500

Hampshire = Catskill
1900 feet.

Shinarump = Portage-Champany
300 feet thick.

	400	Perm.
	1489	Penn.
<u>3,174</u>	1285	Miss. b. p e c
	7050	W. Mass. 90-2660-2050-2300
	1650	Mid. Mass 100-500-1000
<u>9,521</u>	821	Low Mass.
	2121	Siberia
	530	Amiatn
7,651	2500	Cons. - Mont. - Wyoming
	1300	Mid. Cal.
	2000	Low "
<u>3,900</u>	1600	Cons. "
	4000	Up Camb.
8300	4300	Low Camb.
<u>31,546</u>	31,546	July Paleogres.
	15	

Friday Sep. 11-1918

3022

Left Cumberland Ind at 8:24
A.M. Arrived at Washington Junction
at 11:27.

Went east from the station.

Within 100 yards of the Washington Junction
station one begins to see the massive limestone
conglomerate. It is made up of a considerable variety
of limestones from highly crystalline to amorphous
but more often of magnesian highly colored
masses. The dark blue limestones are rare
and the thin banded or ribbon yellowish types
is more common. In some could see very
massive joints but occasionally times of organic
forms. All of the pieces are but of 1/2 to 1 foot
in size, all are subangular usually in
quadrangular fracture but in certain beds
the flatter pieces are also found. All of these
varieties of limestone can be traced to the
Shenandoah Valley between North Mountain and
North Mountain. In size they vary from fine
oleaceous sand to pieces of to 2 feet in size. All
are firmly cemented in a fine brick red cal-
careous mud.

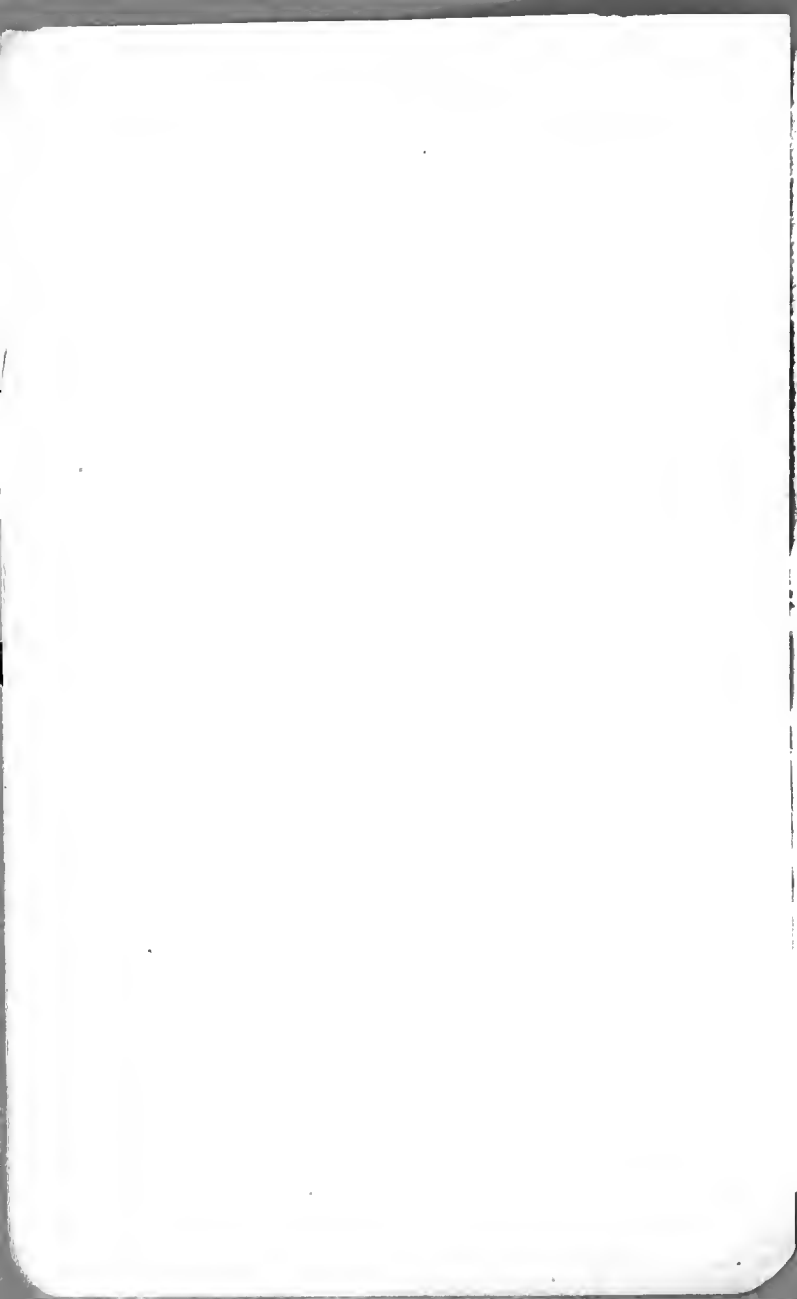


In large fresh pastures and sometimes in (2)
weathered places one sees distinct bedding. The
dip is about 30% to the ^{South} ~~West~~. This
surprises me ^{at first} generally. In certain of the beds
the pieces are so all in other layers, others
the pieces are flat, and finally some have
small more red cementary material. The latter
^{red layers} may not show the distinct bedding until the
dip to the west.

In the present weathering the red bedding comes
in the first stage or that the exposures are very
rough. The limestone pieces then weather along
all fracture planes making the surface still
more rough.

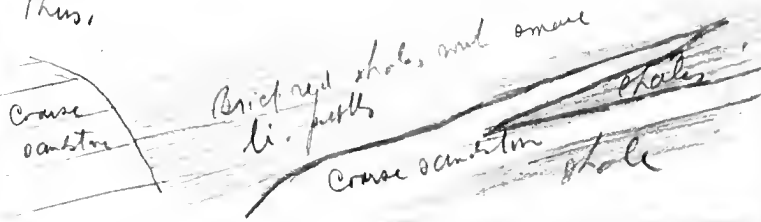
The dip is changing to about 20%

These conglomerate beds continue for about one
mile east of Washington ^{into the bridge to the east, probably to Baltimore} across a hollow ^{or} ~~road~~
and one comes at once upon a coarse quartzitic
sandstone with ^{occasional} pebbles of quartz up to one inch and
limestone boulders up to 3-4 inches. These shaly
reddish sandstones are interbedded with thick red
sandy shales. The dip of these sandstones is about
20%. There are occasional thick sandy shale zones
with small and more rounded pebbles ^(= ? pebbles) these may be 1/2
inch in diameter. This layer has the appearance of
irregular bedding a flaring mud on the pebbles.

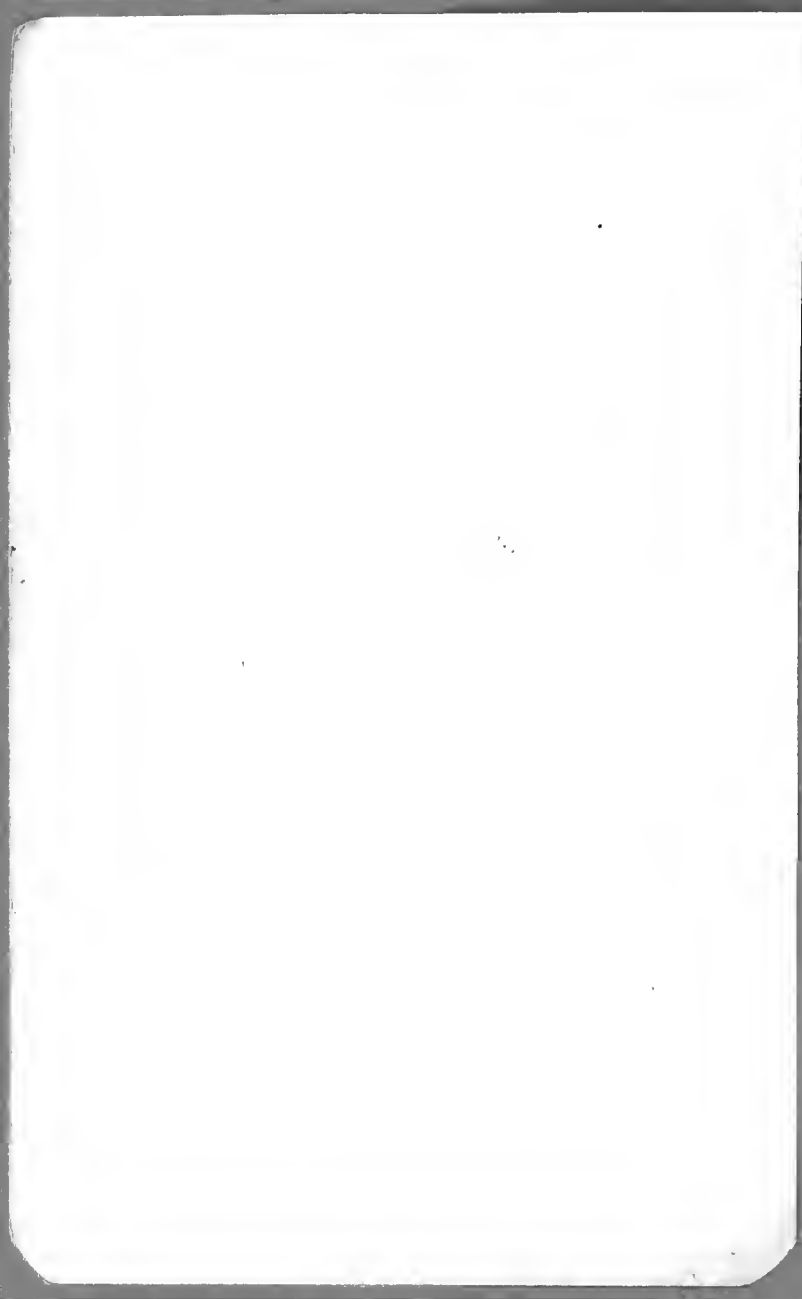


The zone weathers with irregular streaks in all directions of a whitish color, along the grain of flow movements. The top then are bluish like.

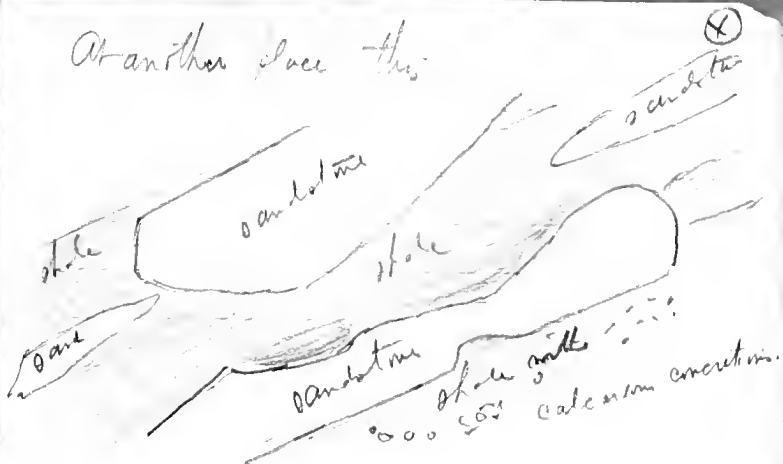
Between the brick red sandy shales goes there is a thick layer bedded coarse sandstone that has been ^{by all sides} ~~eroded~~ as a ^{judged} ~~judged~~. It seems the material shows decided cross bedding. ~~of the same type~~. There are probably more sand sandstone zones. As I go along it is seen that these are not dunes but irregular channel deposits. Thus,



Farther east there is an alternation of sandstone with the brick red shales. At the junction of the shales with the sandstone may be seen small ^(sintered) ~~eroding~~ cracks of the concave type but in the cracks there is no sand worked in. The limestone pebbles are now nearly all gone. Only coarse pinkish sandstone and the brick red ^{only} shales.



At another place this



of irregular dispersion
The small calcareous globules are mostly
not limestone conglomerate but calcareous concu-
tions = sinter.

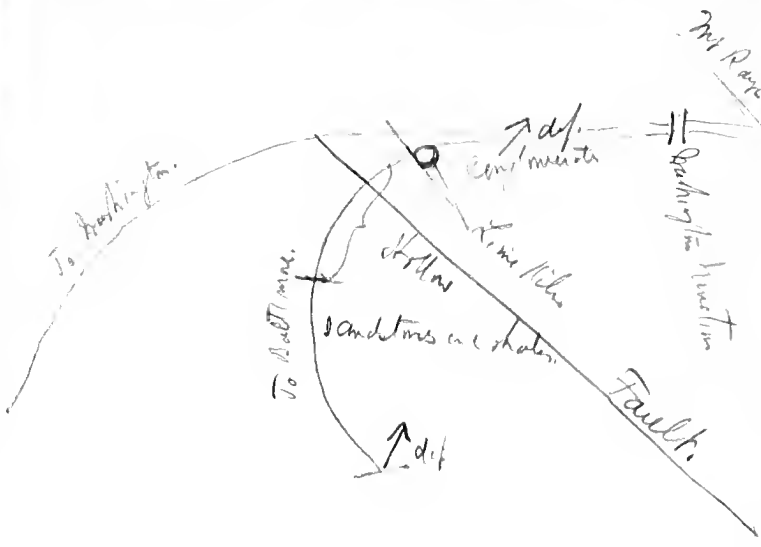
In places the beds are made up of rounded
branching clay stems lying horizontally, like Bu-
thotryphs.

At the deepest horizon seen the Triassic
becomes more and more a ^{more sinter} medullary sand-
stone and not of coarse blocks thin and
impure, mixed with mud. There is also
here considerable slickensiding, in vertical
faces up to 4 feet high.

Returning the structure may be interpreted in
two ways. (1) one series of superposed beds and

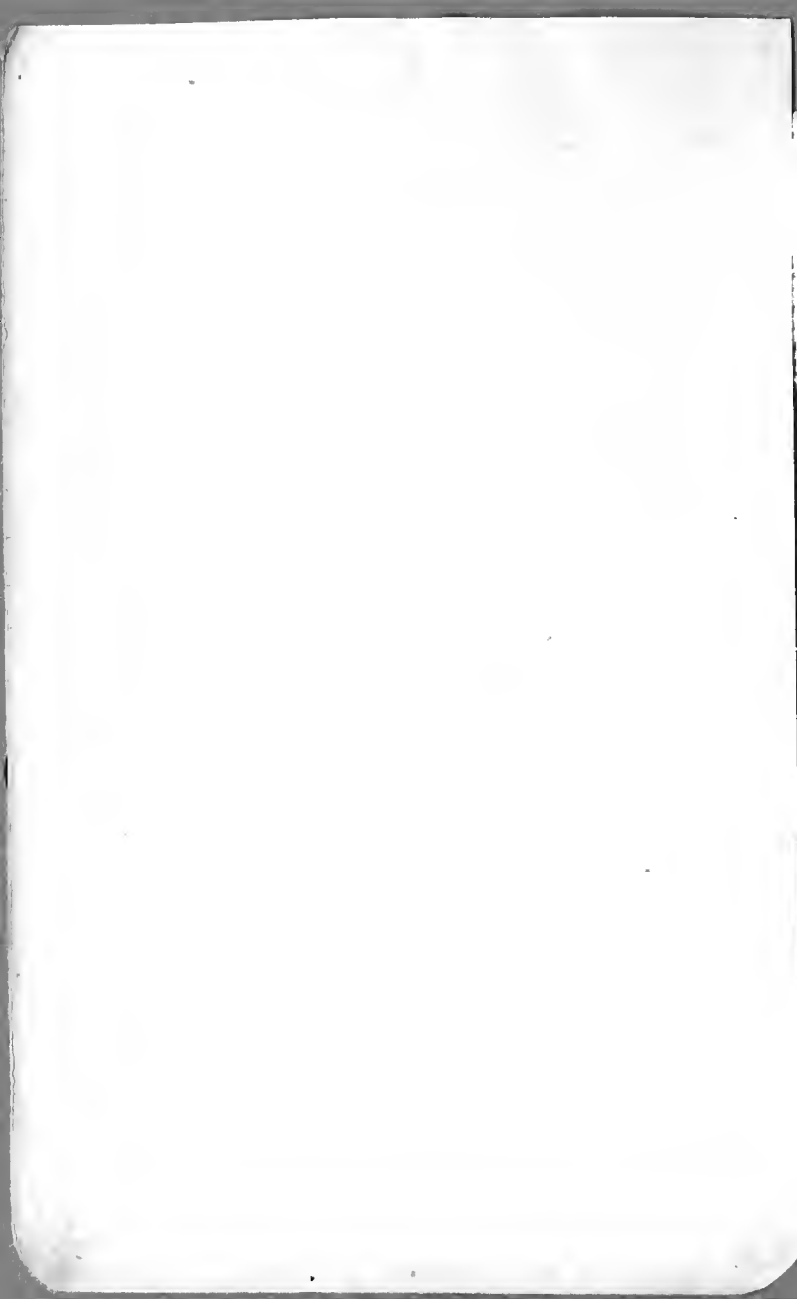


(2) Two series of hills separated by a fault.



Mt. Range

Left Washington Junction at 4.47. Arrived at Washington 6.30 stopping at Metropolitan.



The general structure is like this:

