

Nova Scotia.

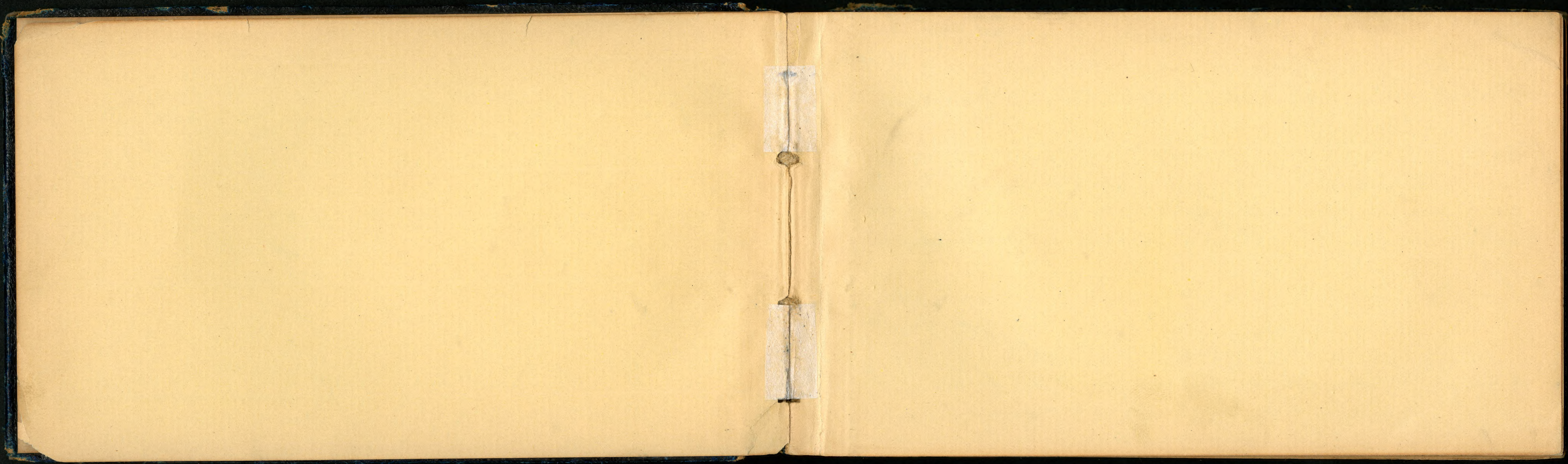
Cape Breton

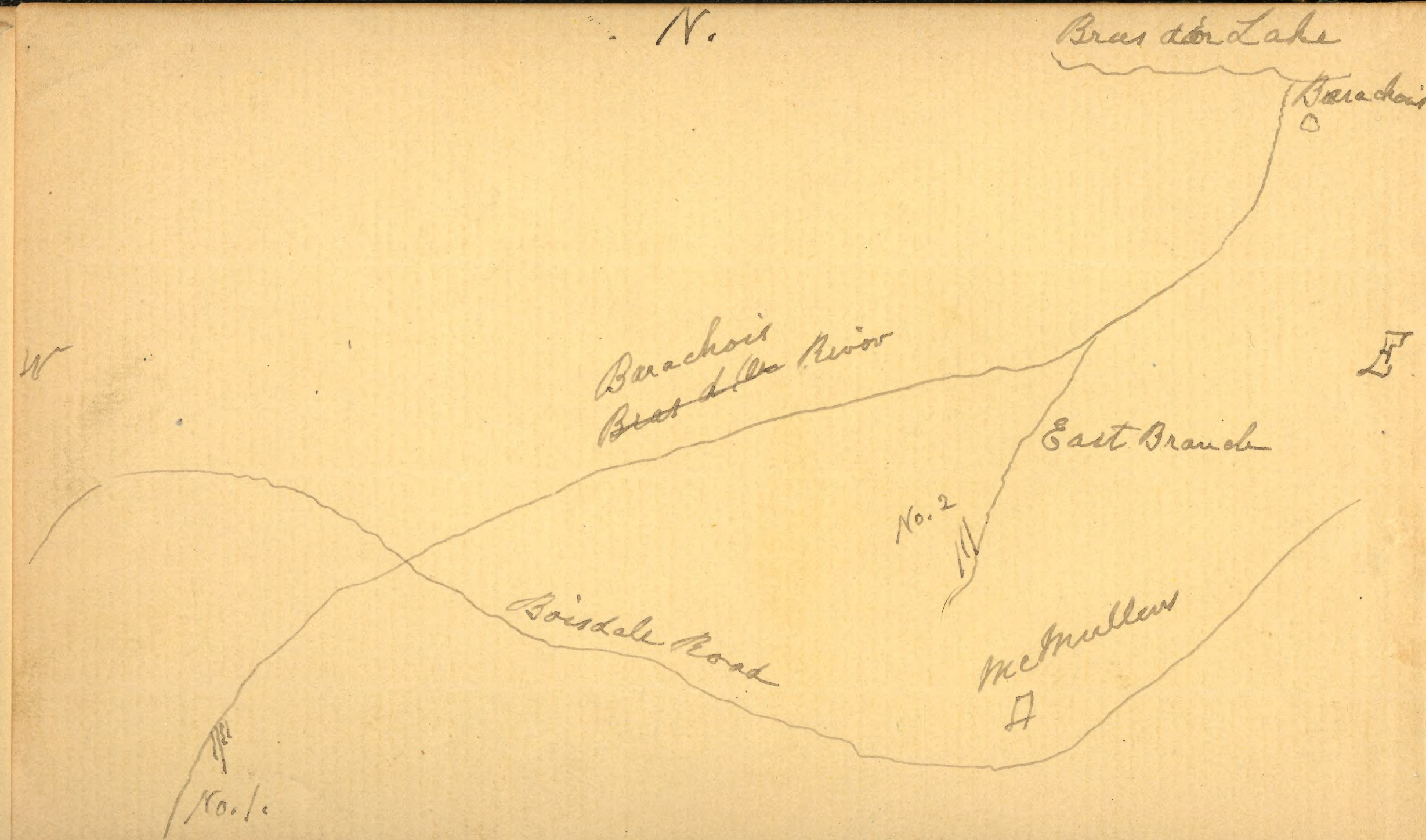
Map 1901

U. S. GEOLOGICAL SURVEY

9-896

W. Ward Cooper,
U. S. Geo. Survey,
Cape Breton,
N.S.
1901.



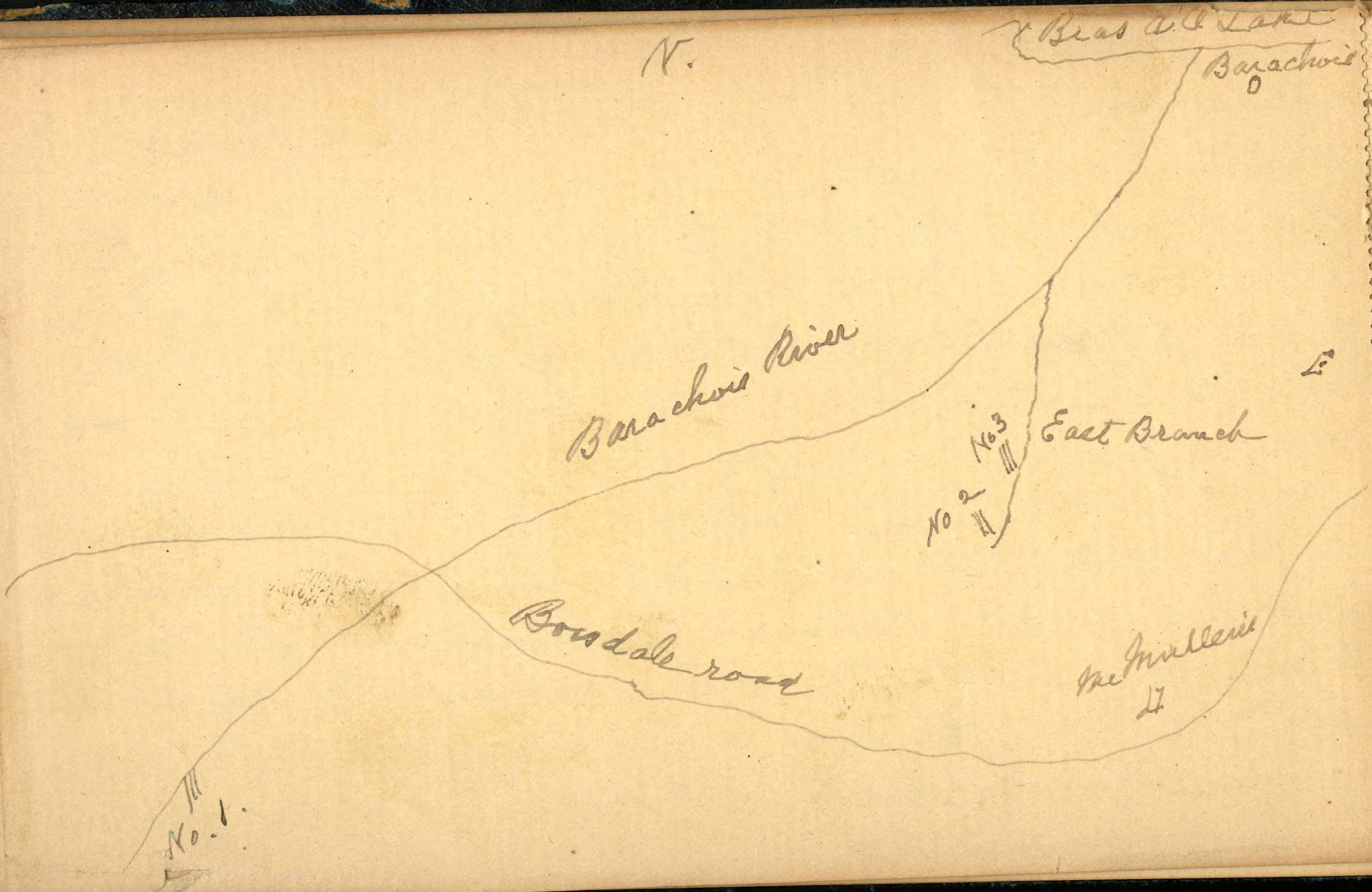


Monday, June 3^d 1901.

Commenced work on east bank of Barachois River, East Boisdale, $\frac{1}{2}$ miles east of Boisdale R.R. Station $\frac{1}{4}$ mile south of road from Boisdale to Upper Leitch Creek, Cape Breton. Exposure of about 200 ft of Upper Cambrian shales along the river bank. Strike N.E. $\frac{1}{2}$ S.W. Dip 50° S.E. Collected 160 shells. ~~was~~ Jones.

Bed No. 1 on Diagram.

June 4th. On one of Dr. Mathews' localities on small branch of Barachois River on the east side, $\frac{1}{2}$ mile north of the Boisdale road. Estimated at least 200 ft. Lower than No. 1. Collected 200 specimens. The specimens sent Mr. Walcott last winter in a cigar box were from this horizon. This No. 2. on Diagram.



Wednesday, June 5th. 2.
 On same horizon as yesterday - No. 2.
 Collected 160 shells and one fair trilobite.

Just at night found a bedding farther
 north on the same east branch ^{1/4} of a mile
 north, and ~~is~~ much lower, dark, black shales
 carrying very small shells of a few trilobites.
 Bedding No. 3.

Thurs June 6th Worked the locality found last night.
 Found shells not seen before, also found a few
 good Trilobites. Had to change the course of the
 water in order to get at the shales which lay in the
 bed of the river. Collected in all 150 specimens.
 This locality not worked by Dr. Mathew. Is 200 ft lower than No. 2.
 This horizon No. 3 on Diagram.

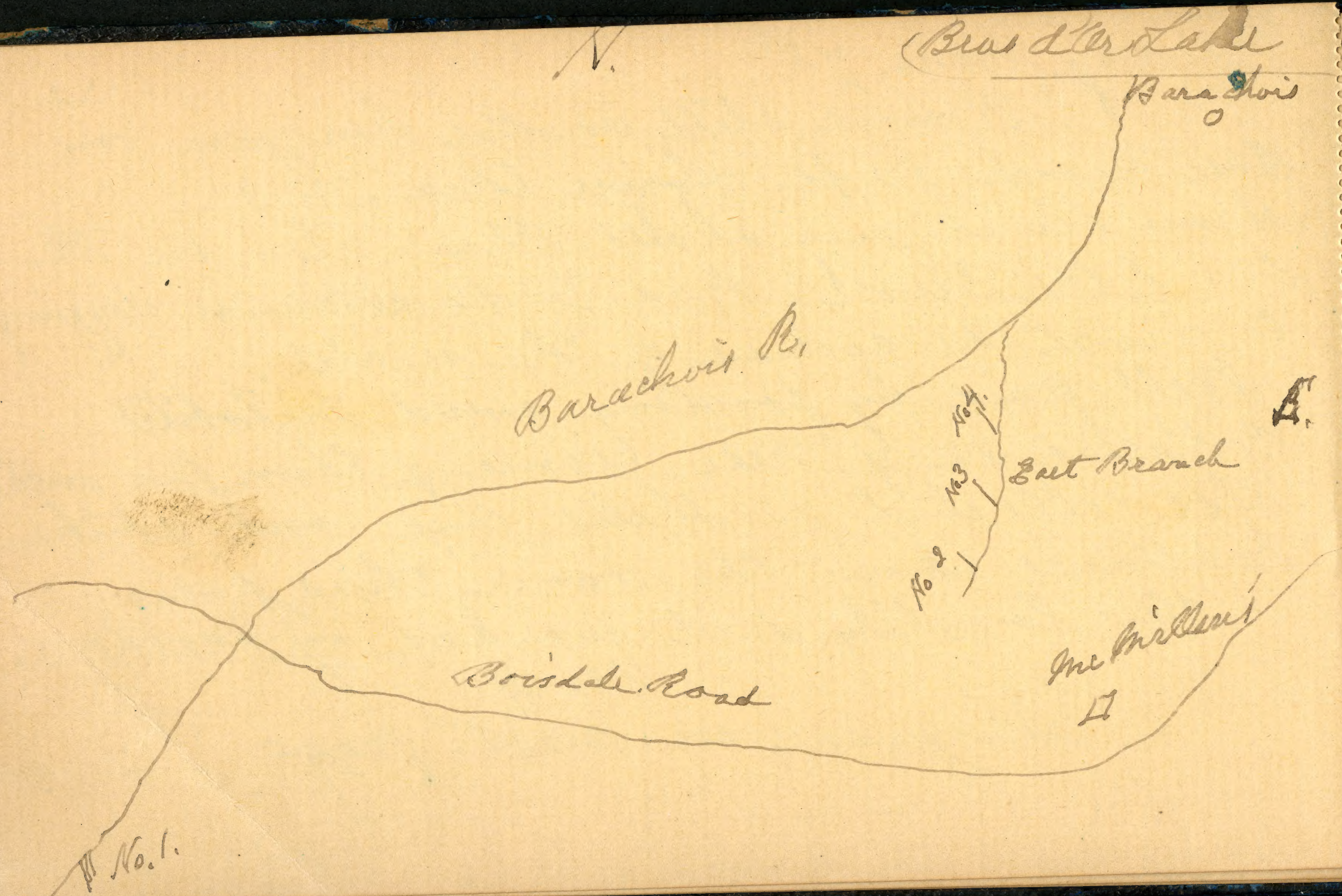
Friday, June 7th

Found still another horizon on East Branch, 50 ft. lower than No. 3. Some bluish gray shells. These also in the bed of the brook. Had to do extensive digging to divert the course of the water.

Well paid by finding good Trilobites. Collected 32 of these, some of them fine ones. Also collected 75 shells. Dip and strike continues about the same thus far.

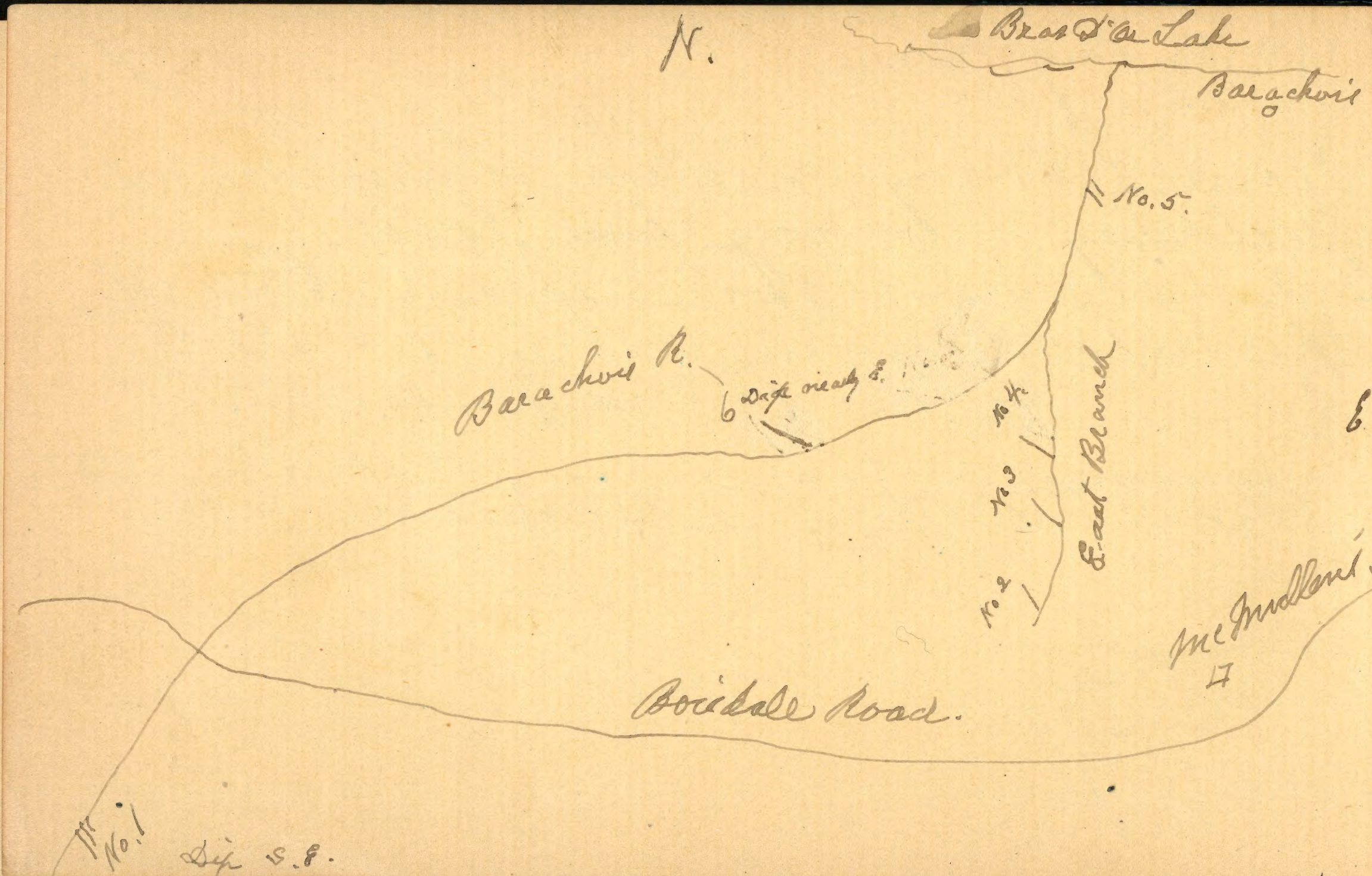
This locality not worked by Mathew.

No 4
Diagram on next page.



Saturday, June 8th 4.

Worked today on same horizon as yesterday. A very fine locality. Found over 40 good representations of the Trilobites and nearly 100 shells. In all 130 specimens. 900 Spec to date. This is bed No. 4 on Diagram.

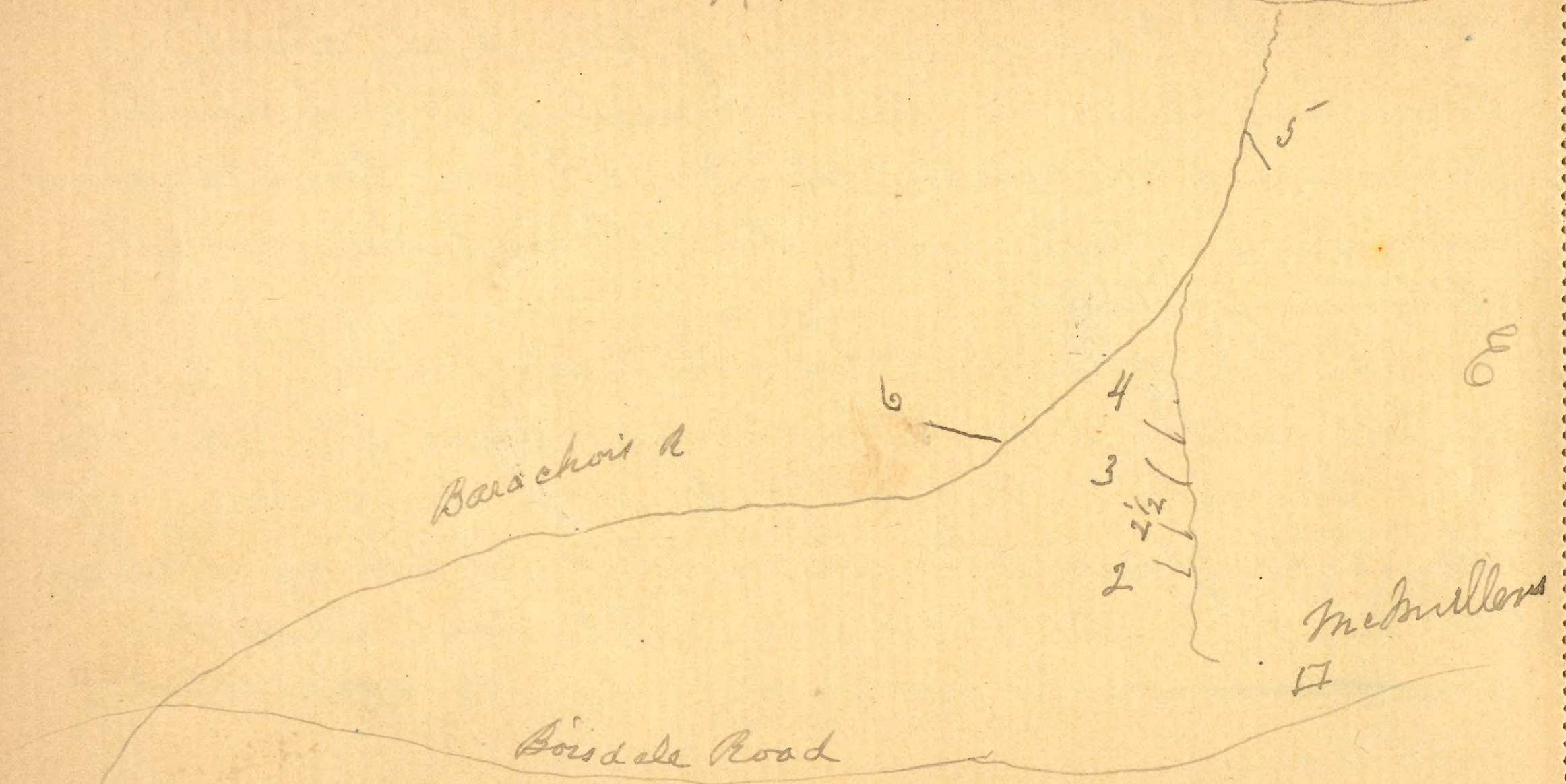


Monday, June 10th,
 Searched along the east bank of
 Barachois River to the N. during the forenoon.
 Found a few shells at No. 5 on the diagen
 about 1 mile from the Boisdale road.
 Obtained 25 spec.

In the afternoon located trilobites and shells
 on the west bank of Barachois R. above
 the Branch. This is No. 6 on diagram, and
 the dip appears to carry this bedding below
 the shales at No. 4, on the East Branch.
~~Secured 80 spec shells of~~
 trilobites.

N.

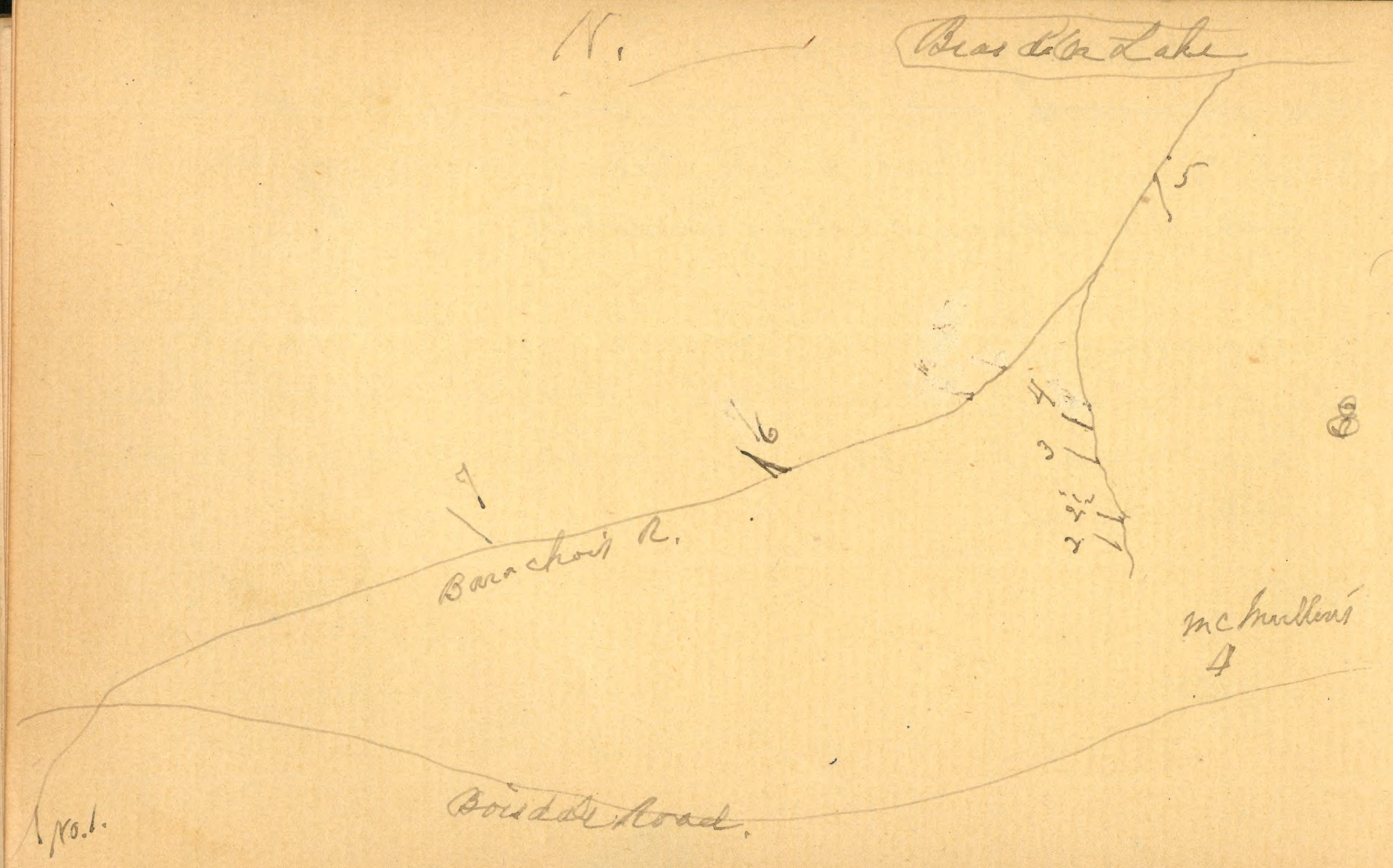
Beasdale Lake



III No. 1.

Tuesday June 11th 6.
 In forenoon worked on bedding No. 4 on
 East Branch. Exhausted the locality by noon.
 Got 37 spec. shells of Trilobites.

Afternoon - Located fossils on East Branch
 25 ft. lower than No. 2. Small trilobite heads
 & tails and few small shells - collected 87 spec.
 This No 2 1/2



7.

Wednes. June 12th.
 In forenoon worked horizon No. 6
 on West bank of Barachois R. A narrow
 strip of meadow lies between the high cliff of
 shales and the river. This bank belongs to
 Kenneth McMullens. Found heads & tails of
 trilobites - 50 spec. in all.

In afternoon opened another horizon about
 50 ft. ~~above~~ ^{below} No. 6 This bedding only a
 short distance north of the Boulders road.
 Got 150 shells and 1 trilobite.
 This No. 7 on Diagram.

No.

Head of the Lake



Thursday June 13th

8.

In morning worked on No. 1 which was worked on June 8th. Secured 220 shells of trilobites. In afternoon searched ravines on ^{west} shore of Barachois River without success. Just at night found indications of trilobites on West Bank of Barachois River 100 ~~feet~~ ^{higher} than No. 5. Shall work this locality tomorrow. Will be No. 8 on Diagram. Apparently lower than the horizons on East Branch.

Boisdale Road

No. 1

Friday June 14th

9

Worked the new bed found last night.

Trilobites abundant, some shells.

Secured in all 140 specimens, mostly trilobites.
Quite a number nearly perfect.

This bedding very promising. Shall
work it thoroughly. Judged to underly

the bedding on the East Branch.

It is near the top of the bluff. Owner of
the land came down and ordered us off at
noon but succeeded in pacifying him by giving
him \$2 for privilege of working. His name is Hemmett
the Miller. I suppose there was an understanding with him.

Beas & Lake

Barachois Glen

2 last yr.
5 this year 5

Barachois Glen
Called last year Mr. Clavin Brook

Bois de la Route

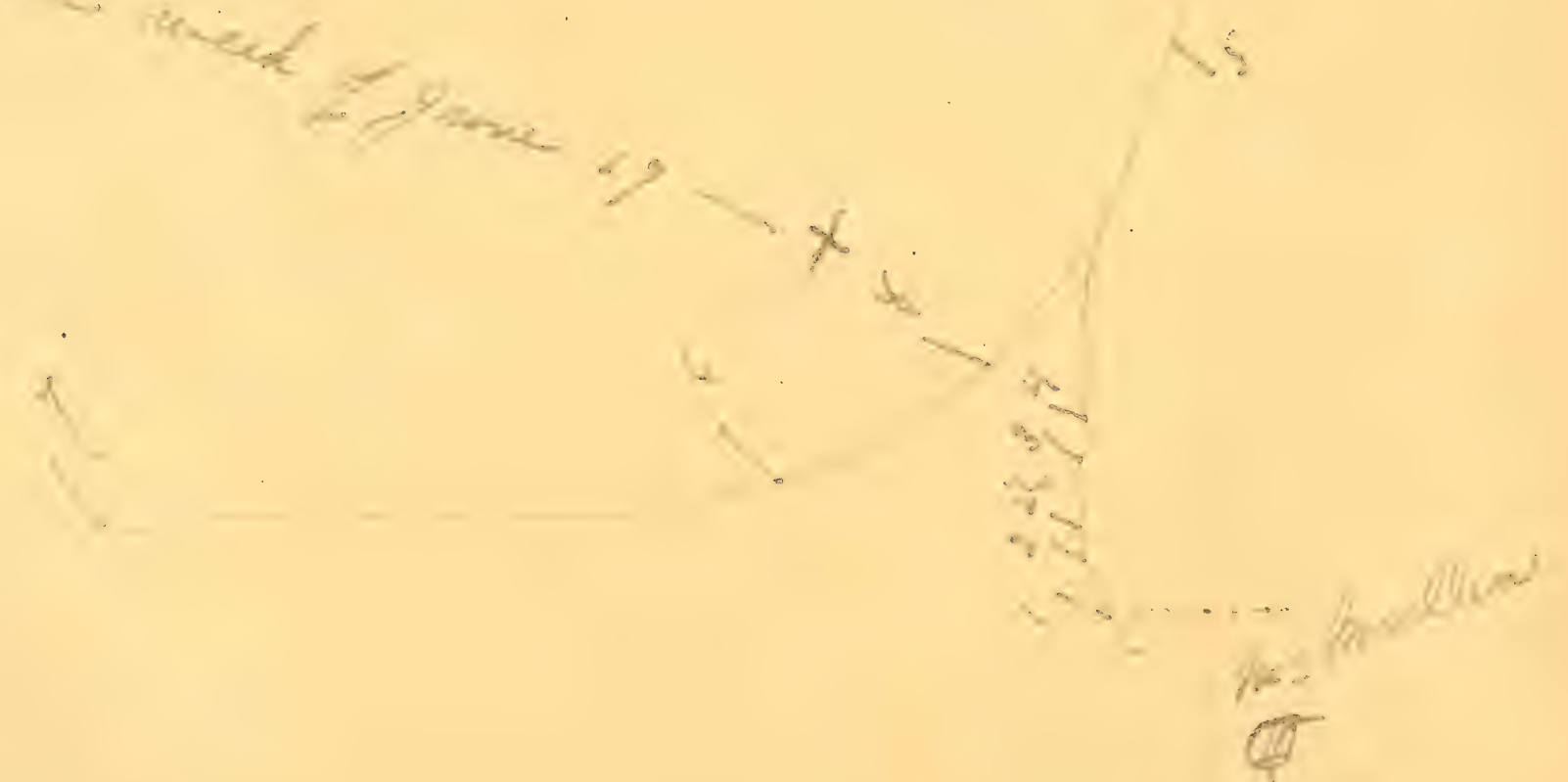
Saturday June 10th 05

10.

Searched down Barachois Glen towards
Barachois. ~~Some~~ Some ground gone over
last year. Found one bedding lower than
the one worked last year. Got 40 shells.
Then went up the Glen to the ravine
worked last year and collected 90 shells.

Rest at the Lake

Worked the week of June 17



Monday June 17th

11.

Worked on Locality or horizon No. 5 on Barachois Rivert. The first locality got opened. Got 120 good specimens of all Trilobites, Shells, Hyolithes, & some things not seen before. Must have secured nearly 100 spec. of Trilobites if two or three spec. Several of them extra fine ones.

June 18th worked as yesterday. Got 140 good spec. mostly Trilobites & a few fine shells.

Wednes. June 19th

12th

On No. 8 today.

Shall follow up this bedding.
Got 145 spec. some very complete
Trilobites, but not as good as yesterday.
Found today fine *Hyolithes* and some
very peculiar forms with which I
am not familiar.

Whole number of spec. collected
since June 3rd to date 229.

~~Wednesday~~ Thursday.
June 20th.

13

Still working No. 8. Working deep into
the bluff in hard shale. 135 specimens today.
Several whole trilobites and very fine
ones, too. Also fine *Hyolithes* and a
number of the peculiar forms found
yesterday.

This locality a famous one

14

Friday June 21st. Collected 150 spec on
No. 8. 10 whole trilobites. Most of the specimens
trilobites and fair heads & tails.

Saturday June 22nd

Worry to record that No. 8 was
exhausted today. Got 105 spec. only 3 whole
trilobites. About 50 ft ~~lower~~ ^{higher} found a
few fragments of trilobites and some small
shells 15 in number - In all today 120 spec.
This last locality No. 9

Monday June 24th

15

Raining today but went about 2 miles
down Barachois Glen, 3 miles from
Barachois, where I worked last year.
Worked under an umbrella. Found shells
very abundant and similar to those in No. 1.
on Barachois River. Worked under difficulty
on account of the weather but secured
300 small shells. Many of them very fine.

Have collected & packed to date 2,774 spec.

Tuesday June 25th

16th

Very wet day. No work.

Labels in bundles for the
17th page are extract on the labels
for 16th page - should be 17th pg.

Weds. June 26th

17

Worked today in mine in Baschois
like same as on Monday.

Collected 200 shells.

Found 200 ft higher up a horizon
carrying *Dictyonema*. Collected a
few but at night. May work there
again.

Thurs. June 27 - Went towards the head of
Barachois River 2 miles S of Bissell road
Found several outcrops of dark shales, thin bedded
evidently Upper Cambrian, along the river on high
cliffs. At one point $\frac{1}{2}$ mile N. of the bridge
on the MacNeil farm road collected 100
shells and a few *Dictyonema*.

June 28 Collected 100 shells in cliff in Barachois
glen - $\frac{1}{2}$ miles from Barachois - a new locality
on east side of the glen close to Upper Litchfield
Mountain on John Morrison's land.

Also collected 50 spec of *Dictyonema* 3 miles
from Barachois southwest of above locality.

Sat, June 29th

17

On what I understood Mathew to call
Stechminian at Barachiss. Unable to find any
fossils at the point he designated. On the shore
of the Lake opposite that point I found
two bands of hard calcareous rock in the
shales showing many fragments of shells.
Obtained in one band ~~a few~~ ^{one} small pupal
shells. A Lingule.

This is north of Cadron
Station near deep cut on the way to
Georges River $\frac{1}{2}$ mile north of the station



Monday, July 1st

Went to Barachois again and searched the Etchemmian again but could not find any of Mathew fossils.

Collected 20 specimens of the fragmentary fossils on the horizon worked Saturday and represented in Diagram opposite page.

July 12th Dr. Mathew states today that there is no Etchemmian at Barachois. Says that it was a slip of his tongue when he said Etchemmian.



Mc Adams shore,
Folded strata.

Matthew did not work
these bedding at all.
The specimen he named
he found in lower shale
on the shore
So says Mr. Mc Phee, who
peered with him!

July 2nd
Drove 12 miles to Mc Adams shore
at East Bay Escanaba. Got there at noon
and secured board and lodging with John
Mc Adams. After dinner went to the shore
and found outcrop of shales coming down
within 10 or 15 ft. of the water. Examined the
shales along the shore and found several
horizons carrying shells. Collected 80
specimens from No 4 & 5 of the diagram.

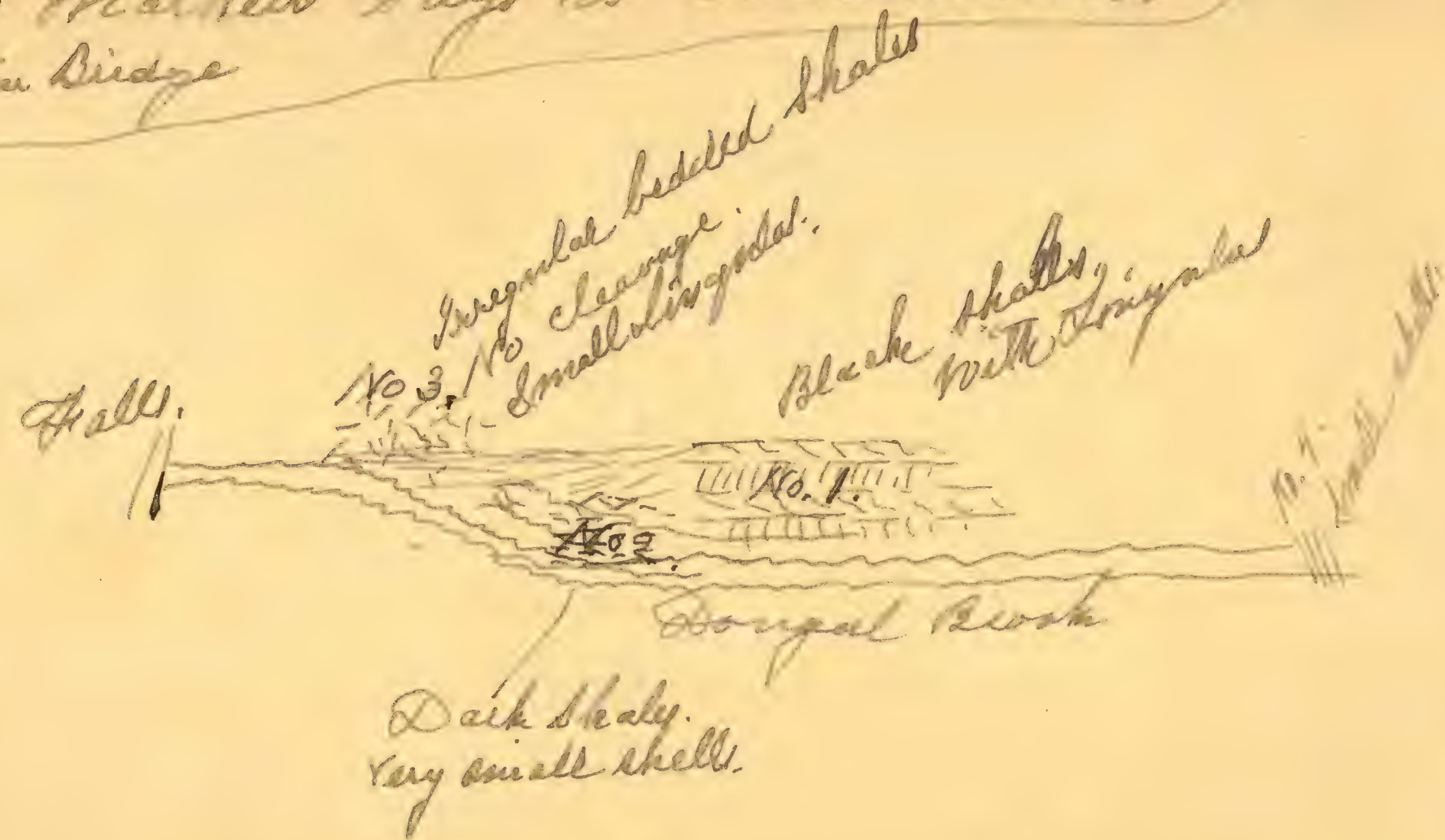
Wednes. July 3^d.

22.

Collecting from all the beddings on
the Adam's shore.

125 spec. in all. Very good.

This Mather says is Etcheminian.
 July 12th Mason Bridge



200 Yds below No. 1 found small shells in pinkish grey shale.

Thurs. July 4th Etcheminian 23^d

Hired Mc Adam to carry us to the Indian River localities six miles from Mc Adams shore. Examined shales along Indian River as far as the bridge at foot of Mc Pheis Hill. Climbed Mc Pheis Hill and hired Vincent Mc Phee to show the way to the fossil beds worked by Dr. Mather on Daugat Brook 1 1/2 miles N. of Mc Pheis. This brook runs into Indian River. Just below the Falls collected 45 fine Lingulas, No. 1 on Diagram. In a strata a few feet lower found very small shells in No. 2. In No. 3 very fine small Lingulas. July 12 Mather says this is all Etcheminian. 200 Yards below the Falls found a thin bed of pinkish grey shale with numerous very small shells. No. 4 collected on all 259 spec.

Friday July 5th Stemurian 27
In morning Mr Phee took us to a small
brook on west side of the road on the hill
leading below his house where in a coal black
massive-like shale we found several species of
brachiopods. Collected 125 specimens here.

In the afternoon worked on ~~Gregg~~ Brook
and collected a few shells - 25. ^{W. gregua} gregua

Just at night went down on Mr Adams shore
and collected 46 of the beautiful shells in
the red colored shale bed outside but deep in
blackish

No 1st 199 in all

all

Specs collected & date 7. 7. 07

Saturday, July 6th.

25

Neil Johnson came for us from Upper Litchfield
Creek. Got back there about noon.

In afternoon finished boxing up specimens
and packed baggage & tools to go to
Walth Sidney on Monday.

Monday, July 8th

26-

Hired team to cart 5 Boxes of specimens
to North Sidney - 14 miles, for \$2.50
Hired Johnson for \$1- to carry myself and
baggage & tools to Brisdale R.R. Station -
6 miles. To take train for N. Sidney.

Stayed overnight in Sidney at Leonida Hotel

Tuesday, July 9th

Shipped boxes at N. Sidney. Via Clant Linn to
Telephoned for team from Marion Bridge. ^{Washington}
got there just before sundown.

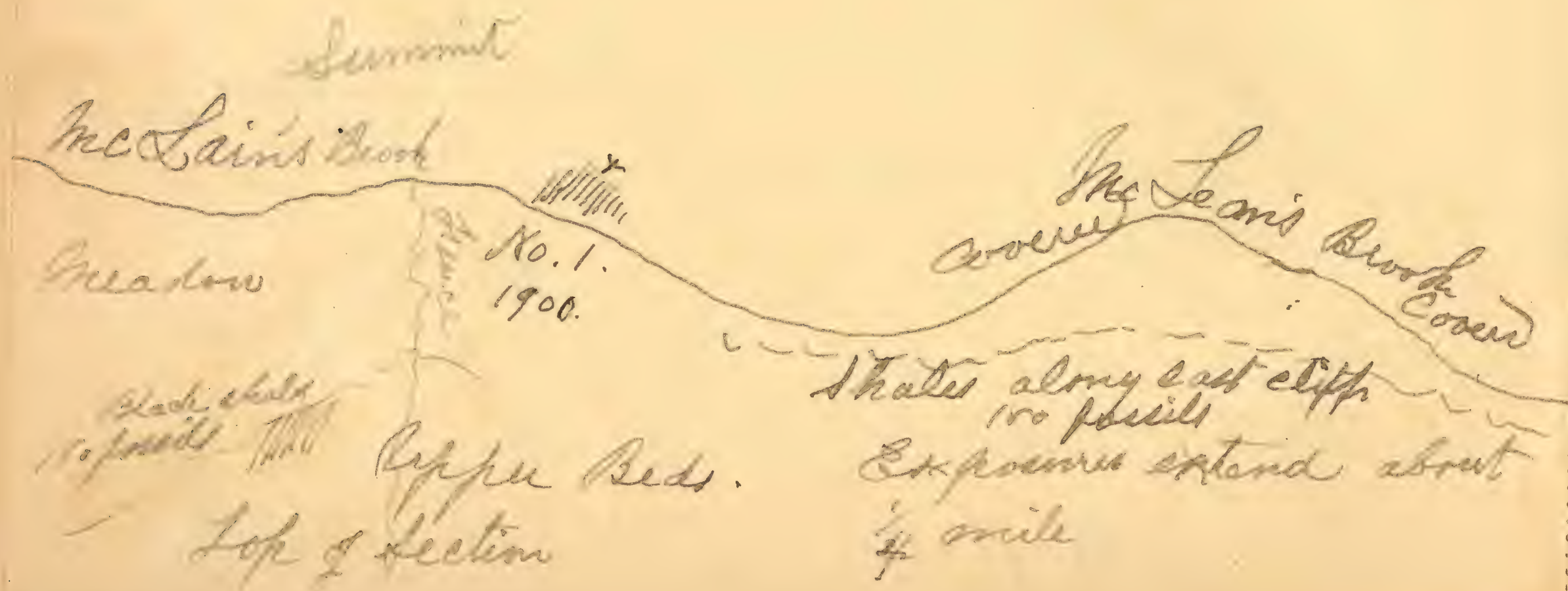
Wednesday July 10th.

27

Worked on McAdams' Brook till 10 o'clock
Raining a little and bushes to wet. Went over
to Mc Lane's Ravine. Worked awhile on No. 3
of last year's diagram. No success.

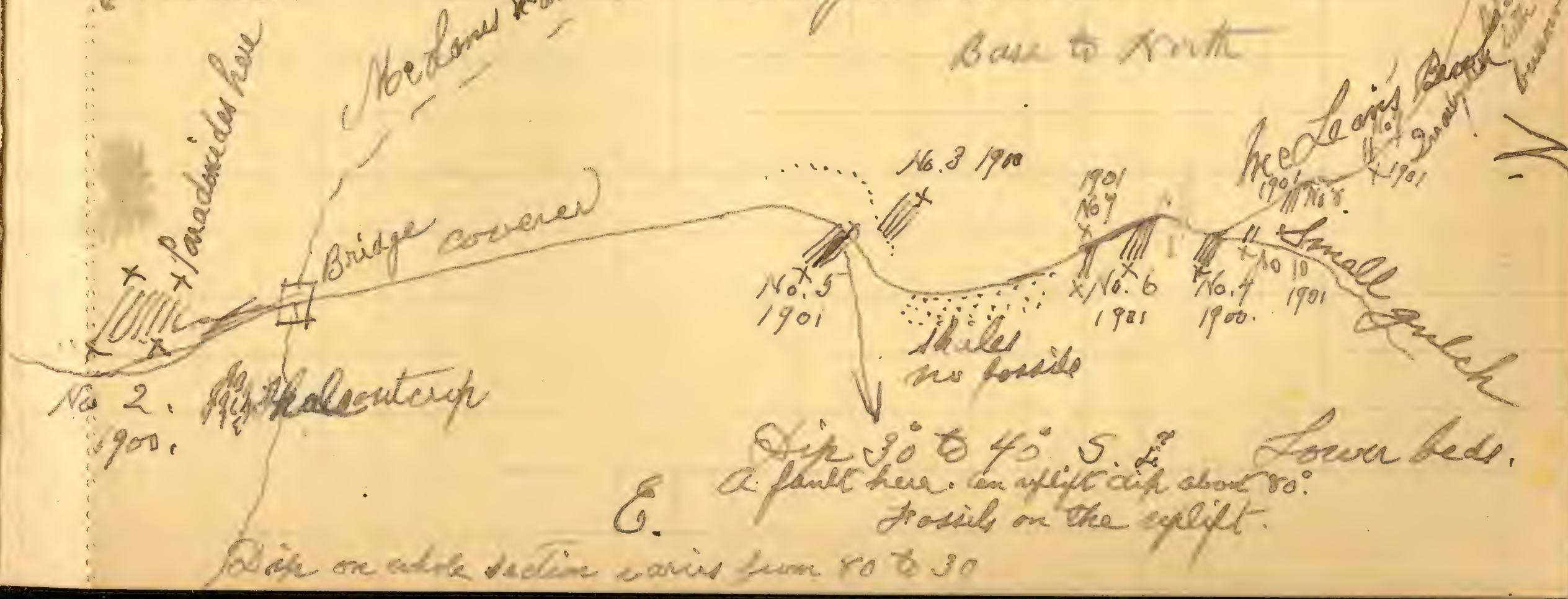
At 2 P.M. found a new outcrop of fossils
on the east side of the river in the high
bank. Fossils numerous and finely preserved.
These over the shales of No. 3. Collected 125 fine
specimens. Bedding No. 5 of Diagram on
next page. Nov 1901

On Page 40 all the beds of the section are represented as measured from the base.



28

Thursday July 11th
 Collected 148 shells at No. 5 same as yesterday. In afternoon found another fossil bearing strata at No. 6. many small long beaked lingula. collected 43 specimens here, shall work & obelus. it again tomorrow.
 Base to North



Friday July 12th.

29

Worked on No. 6 collected 100 spec
Dr. Mathew came at noon.
Spent afternoon in going over the
McLean section.

Asked him to go to Mc S. Drums brook
but he said that he could not.
Said he had no time to do so

Saturday, July 12th

30-

Worked part of the forenoon on No. 56
specimens very fine. Took out 80 more.

Found a bedding 30 ft higher having
a few large shells, got 20 spec^s of these
and a few small shells. Could find no
more ~~this~~ No 7 Went to No 2 of last year and
began excavating there. Uncovered the
fossil band. Shall work it on Monday
No 2 is the Paradise bed.

Monday July 15th.

31

Working on No. 2 - Paradoxides zone.
Collected 100 shells & fragments of
Paradoxides.

Tues. July 16th

Made fine collection of 125
specimens on No. 2 Paradoxides zone.
Good Hyolithes & 1 Bryozoa-like form (fine)
Best shells yet found on this bedding.

5.437 to date

Wednesday July 17

32

Wet morning. Packed & boxed specimens

Afternoon went on No. 2 McClellan's beach
and got 68 spec. *Strombocyclon* &
large shells & fragments of *Palaeodonta*

Thursday July 18th

33.

Went to the Mount Brook locality 4 miles east of Marion Bridge, on Mathew's Etchemin. Found exposures along the Bengal road for 2 1/2 miles of Etchemin slates, or greyish brittle slates resting on small thickness of red and purpleish and greenish shale. The outcropping is about half a mile wide with base on McJannet Lake with summit toward Mount Brook. Worked hard all day but utterly failed to find any signs of fossils. Shall go over there again.

Worshour of Pleasant

Mathew says this is the best outcrop of Etchemin he has ever found but states that he has no fossils from there. 10 She Stone

Friday July 19th

34

Every indication of a rainy day. Thought not best to go to the locality visited yesterday.

Went to McLean's Brook and made some measurements of beddings. Found two new outcrops of fossils above the fork of the small gulch and the brook. The first new outcrop is 30 ft. lower than No. 7 of 1900. as shown on the diagram. This bed is No. 8 of this year's diggings.

The fossils ^{in two bands} all found ~~for~~ 18 inches ^{apart} of the beddings at 1 inch hard band at the top carrying a very small Lingulella of the size, and smaller, below this rock band are several species of Brachiopods. Collected 100 specimens. Just at night found another layer of fossils 6 ft ^{above} ~~below~~ a thick bedding of Quartzite.

Saturday July 20th.

~~Worked~~ Worked in forenoon on the lower bed of fossils found yesterday. This is No. 9¹⁹⁰¹ and lies about 6 ft above the large 10 ft band of Quartzite. Fossils not very numerous but finely preserved. Secured 60 specimens of long, spindle-shaped and obolus-shaped.

Followed the brook to its source in a swamp to the N.W. where it entirely disappears as a brook. The whole length of the brook is about 1 1/2 miles.

Just at night discovered an outcrop of fossils in the short gulch running to the east just above No. 9. This No. 10
6 new beds of fossils discovered in the same bed 1901
this year. July 19

Monday 22nd

36

Went in forenoon, packed boxes & wrote letters.

Aft. Went on Mc Lains Brook.

Worked the outcrops in the gulch leading east from the brook found Saturday night. Only saw about 30 spec.

Tuesday 23rd. Went again to Mathews Eluvium at Trout Brook. Found no fossils.

On way home stopped at Morrison's brook and collected a few of the trails found there last year. 12 sp

Wednesday July 14

9-161.

ch

etc

UNITED STATES GEOLOGICAL SURVEY.		
SURVEY OF THE		In charge.
No.	Name:	
LOCALITY: Gulch leading from McLean		
Brook to the S. East.		
Bedon 7		
Marian Bridge		
B B		
Collector:	Date: July 22, 1901	Memoranda:
S. Ward Loper	Note Book: 1	
	Page: 36.	

W 2

run Brook

i Brook
e shells

UNITED STATES GEOLOGICAL SURVEY.

SURVEY OF THE

31 of 1900

In charge.

No.

Name:

LOCALITY:

McLavin's Brook
Marion Bridge
Cape Breton

No. 1 of 1900
of Diagram

Collector:

S. Ward Loper

Date:

July 24 1901.

Note Book:

1

Page:

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Memoranda:

UNITED STATES GEOLOGICAL SURVEY.

SURVEY OF THE

3

In charge.

No.

Name:

LOCALITY:

gulch leading from McLeans
Brook to the N. East.
Bedon Y
Marion Budge
O. B.

Collector:

S. Ward Lopez

Date:

July 22 1901

Note Book:

1

Page:

36.

Memoranda:

239
1

Wednesday July 24

In forenoon working on Mc Adams brook
As usual found nothing.

Afternoon on No. 1 on Mc Adams brook
found about 100 of the small shells.

Thurs. July 25th

Drove south 13 miles as far as
Gabrous by way of the French road, coming
back on the Big Ridge road. Found great
outcroppings of the Etchevianian slates and of
the red of Purple & greenish shales especially
on Big Ridge 6 miles south of Marion
Bridge. No fossils to be found.

39

Friday July 26
On McNeil's Brook one mile east
of Marion Bridge on the River road, secured
fine shells. This worked last year.

Sat. July 27 - Measuring up the
beddings on McNeil's Brook.
Measurements on next page.

Refer also to diagram of brook, page 25.

Section on McCleans Brook. 40.

Descending

Starting at the north fence of the

McClain meadow. Upon Cambrian

70 ft. Black crumbling distorted shales.

20" Covered.

40" Very dark shales, for 4 in. has bands small shells.

No. 1. 1900

50" Covered.

200" Shales on east side ravine. Conformable.

150" Covered.

Middle Cambrian

40 ft. Greyish shales. Paradoxides at 20 ft.

30" Covered.

No. 2. 1900.

50" Greyish shales with hard bands near the

base of the outcrop. No. 3.

30" " " dip 30. at the base of the

1900

50 ft. a fault. here the dip 80 and on

the face of dip numerous fossils. No. 5. 1901

4 1/2 ft. Covered by debris, probably contains shales

30" Regular bedded shales with numerous hard

bands. Small outcrop of shells. Large small.

60 ft. Similar bedding. At the ~~top~~ ^{base} No. 7. 1901

hard rock profile in shells greyish shales.

No. 6. 1901

20 ft. Same shales at the ~~top~~ ^{base} fossils. No. 4. 1900

10" " " is a gash running east from the brook

a few fossils here. No. 11. 1901.

Some shales

20 ft. base of this 20 ft. 2 beds of fossils 18 in

apart carry in lower horizon very

small *Diphyllia* ? No. 8. 1901

10" Quartzite in fractured bands

12" Greyish shales.

Lowest fossil

6" 1 in. band at ~~top~~ ^{base} fine shells. No. 9. 1901

15" Hard Quartzite, almost massive.

30" Greyish shales with calciferous remains

1" Quartzite

80" Coarse greyish shales with calciferous remains

70" Bands of Quartzite

30" Grey shales weathering brown

18" Quartzite weathering nearly white

30" Thin bedded nearly black shales weathering

yellowish brown

20" Covered

15" Thin quartz fractured, blue black shales.

150" McCleans Brook here runs into

large swamp & finally

disappears.

Some of these beddings may be

repetitions, could not, however,

determine them to be such

The fossil horizons were remembered as

discovered in 1900 and in 1901.

Therefore do not care especially in

order. The label excepted.

Monday July 29th

Packing up Baggage and
Specimens and getting ready to go
to Sidney.

Wednesday, July 30th.

42.

Rory McDonald carried self
& Boxes of Specimens & Baggage to
Sidney. Afternoon shipped Boxes
on Steamer Garmouth.

Wednesday July 31st

Very Stormy Day.

73

45

Friday Aug. 2nd,

Went on upper Cambrian beds in
Barachois Glen. Searched bedding nearly
to Barachois. Returned to cliff on east
side of Glen on John Morrison's land
1/2 mile from Barachois worked June 28 -
collected 125 Brachiopods & a few
Dictyonema.

Free
Saturday, Aug. 3^d

Went on to No. 8 on Barachois
River - Paradoxides zone and collected
80 specimens

Monday Aug. 5th

Mudoch Johnson carried me to Mc Phee's on Indian River in the afternoon. Forenoon very stormy.

Got to Mc Phee's at Sundown.

Carried our provisions with us and lodged in Mc Phee house.

Struck ~~bug~~ good & strong.

To match Labels
Ship to 50

50
Tuesday Aug. 6th

Hired McPhee to work with us at \$1.00 per day.
Went to Longal Brook and followed the brook
from Huronian down to the Falls. Collected a few ¹⁰ spec
beachiopods above the Falls. Collected in 1 2 & 3
157 specimens. ~~157~~ In No 1 found good *Hyolithes*.
followed the brook to Indian River tracing the bedding
according to diagram.

Collected a few *Singula* in
dark band, in old quarry above McPhee's house.

18
in all 169

Diagram of Dougal
Brook Section on separate sheet
delivered to Mr. Walcott.

Wednesday Aug. 7th

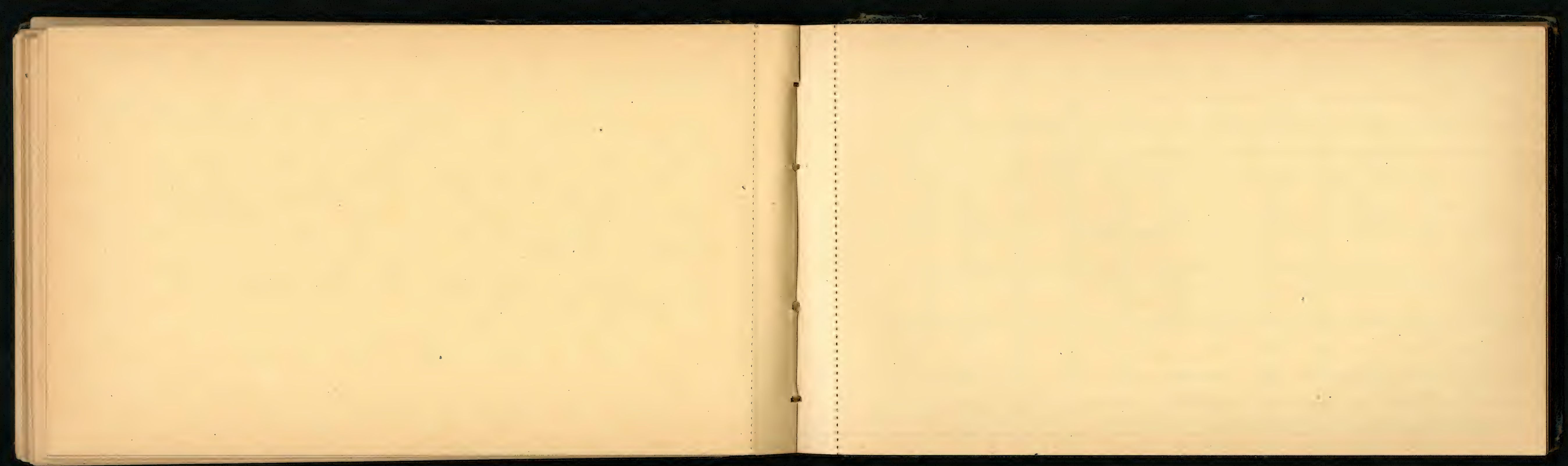
In Wickwar Brook
Called at our previous visit, by Mc Phee,
(Gregawa.) according to Mather's Gregawa (Indian name)
Traced up the beddings and
noted lithological characteristics according to
Diagram and collected in steel grey beds No
37 spec and in dark bed No. 7 specimens.
Fossils not numerous. On Mc Phee's Brook
found 19 specimens in the dark bedding same as
at Dougal Falls No. Afternoon to Dougal Brook and
found fine spec - some New in No. 1 good Hyoliths (shells not seen before
in decomposing rock in jointings. Found & worked 3 higher horizons several
hundred ft. lower. No 5 6 & 7 - In all 70 specimens. ~~Stigmaria affinis~~ ~~Stigmaria~~

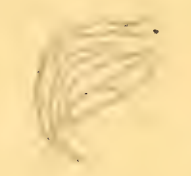
Thursday Aug 5 Returned to Upper Litch
Creek. Left McPhee at 6 A.M.

Reached Johnsons about 2 P.M.

Packed 1 Box specimens and
got baggage ready to start homewards
tomorrow.

Aug 9 Started for Boise at 5 A.M.
to take the train.





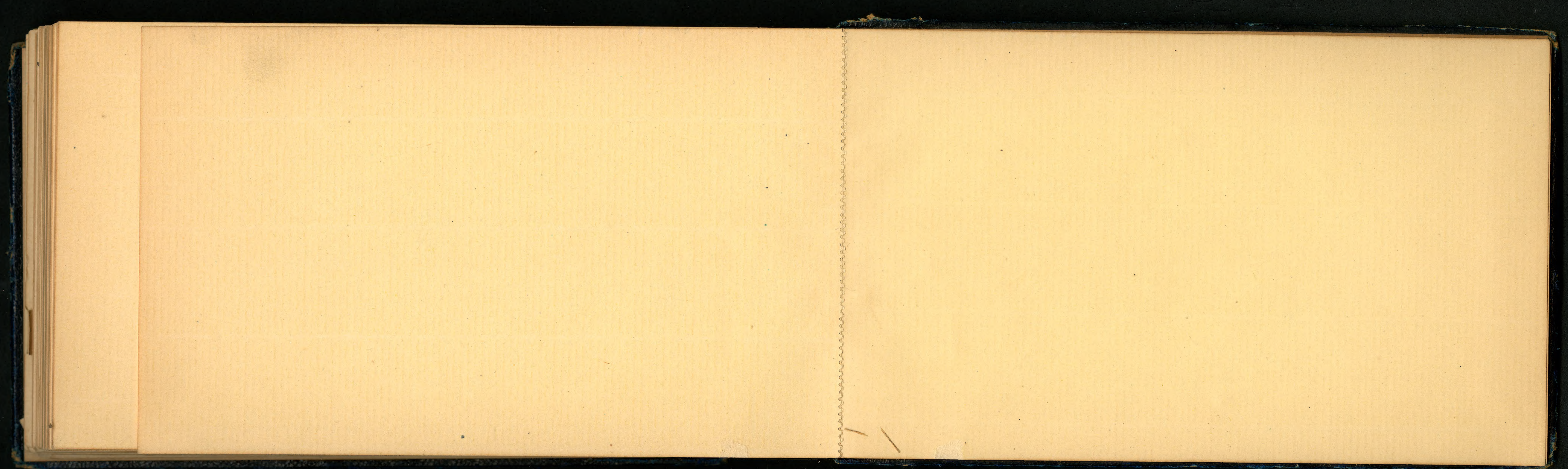
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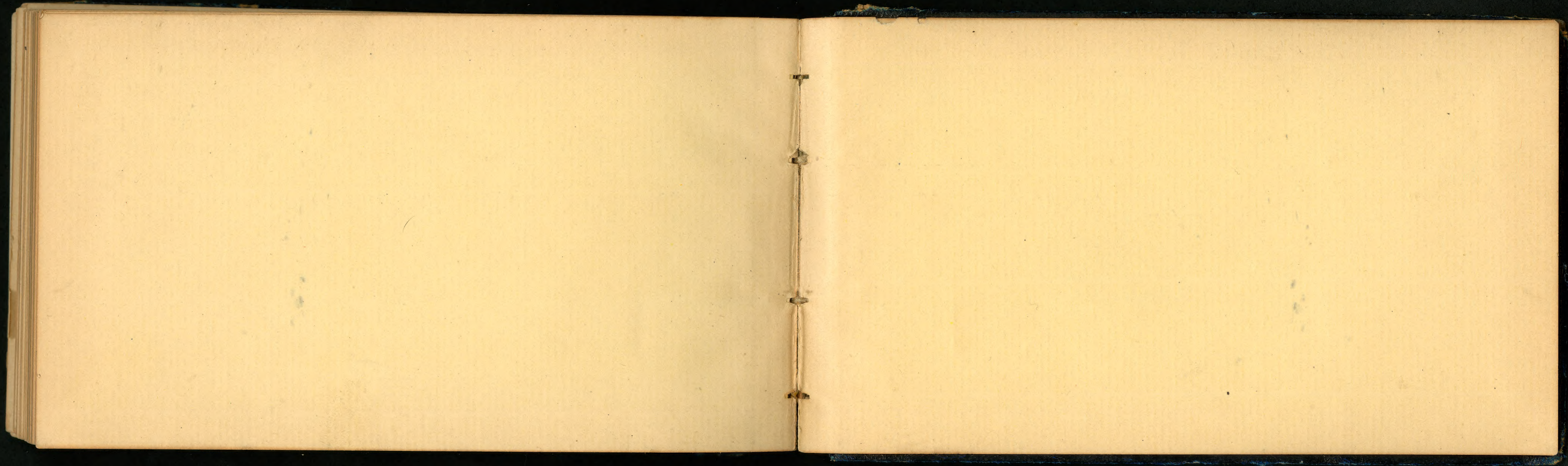
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14
1400
1414

16
1600
1616

