Record of work done for the Geological Director of the U.S. Geol. Survey on the Cambrian formations on Cape Breton during August and Sept., 1910.

August 9th.
Arrived at Marion Bridge, 12 miles from Sydney at noon. After dinner at a hotel, went on the way to the coal pit brook where the Twelve Cambrian beds of Mr. Kettner's section outcrop. This brook empties into Watah River, a mile and a half east of Marion Bridge. Found outcropping of Cambrian beds along the west bank of the stream and cliff 10 to 25 ft. high. Bedding made up of thin black and grey shale with bands of hard gray and bluish limestone and sandstone. Half a mile or more upstream above the first bridge crossing the the stream close the old sawmill pond found
Many small trilobites and brachiopods. Indeed, these fossils some distance above the bridge and collected a good number of specimens.
Aug. 8th

Folowed the Upper Cambrian Shales on McNeil Brook for one and a half miles towards the 3d Bridge on MacDonald road. See diagram page 2.

Hired Roy McDonald to help me work up some of the very hard sandy bands out of the water on the bed of the Brook. Out of these we secured quite a number of good specimens.

In the afternoon worked down the stream and below the bridge crossed by the Shingle Mill road found Cambrian bachiolites. These were in a hard band in greyish Shales about 10 ft. above the bed of the Brook on the west bank of the stream just below the bridge. Left the fossils in this bed for tomorrow.

See diagram page 2.

Two localities worked Aug. 8th & Aug. 9th.

Afternoon & Afternoon.
August 9th

Worked all day on the shale below the bridge on the Thingle Hill road on We Nails Brook and secured a good number of Brachipods.

August 10th

Made a more thorough search for fossils along the Upper Cambrian of We Nails Brook but found nothing more.

On the hill, going east up Thingle Hill road found a outcropping of limestone with impressions apparently of small Brachipods. Very indistinct but made a collection.

August 11th

Raining very hard all day and not able to do any field work.
Monday, August 13th

Worked all day on Mr. Mathew's Chenman at 16° Codrums Brook. Could not find fossils of any kind.

From the surface of the conglomerates up there are 30 ft. of gray and blue shales with many hard sandy sands. From this to the next brook for about a mile eastward, the shales are covered.

16° Codrums Brook is about 2½ miles west from Marion Bridge, and north of Nica River.
Aug. 14th

Worked on the different beds at McCuddin's Brook until 10 o'clock when a hard rain set in and obliged to quit.
No fossils found.

August 15th

Went 12 miles to Salmon River locality, and 1 mile south of the Salmon River bridges, and half a mile from the limestones seen outcropping by the side of the highway. Found grey shales or flags along the east slope of Gallis Hill, from which some small brachiopods were obtained which may be Etcheminian. This is in the region of the Etcheminian zone of Matthews. No rock however was found on site, but the shales are scattered along the whole hillside.
August 16th

Worked all day on outcroppings of black and bluish and grayish shales on McLean's Brook. This is the Brook one mile east of McCordunis Brook. At first outcropping on the west bank of the Brook found a few small brachiopods. At second outcrop shales are marked in diagram found large Lingulella or Matthewites. Made quite a collection at this outcrop. These evidently belong to the Cenozoic zone of Matthews section.
August 17th.

Forenoon raining.

In afternoon showery but went to McLean's Brook and collected 20 spec. from outcrop No. 2.

August 18th.

In forenoon searched along McKeegans Brook which is one mile and a half West of McBodrum's Brook but found no Cambrian shale.

In the afternoon returned to McLean's Brook and found a good number of specimens from outcrop No. 2. Glenn gone.
Monday August 20

Raining in torrents.

Packed two boxes of specimens and attended to correspondence.

Wrote last week to Mr. Mathew telling him that I could not find any fossils in his Flemingsman. Received a letter from him to day stating that he was not surprised that I did not find them, that they were very rare, said they were in the sandy bands of the slate, shall make another search for them.

August 21

Still raining very hard.

No chance for field work.

Ground up remained and wrote letters.
August 22nd
Still bad weather, but went out to McCleans Brook and worked under an umbrella and collected about 50 fine specimens, these from outcrop No. 2. Showers all day.

August 23rd
Spent the forenoon and until 2 P.M. searching again for fossils at McCleans Brook on Matheus Etchemin's. Found nothing. Went from there to McCleans Brook and finished the day on No. 2. Got about 40 specks.
August 24th

Reached along Morrison's Brook 2 1/2 miles east of Marion Bridge, South side Mind River. Found in the Cambrian shales there some fine and peculiar trail markings. In ravine near Mr. Morrison's home found a few Dictyonema (Brachiopods).

In afternoon searched along Little Trout Brook half a mile east of Morrison's Brook, found there on the farm of Daniel Chamberland a few nice brachiopods and trilobite tails.

August 25th

Pleasant weather, light rain nearly all day. Went to the Mills Brook by way of the river road, one mile east of Marion Bridge, and near the old dam just south of the river road bridge managed to collect about 75 small brachiopods, these probably from zone middle Cambrian. See diagram, page 2. Also page 22.
Monday August 27th

Head planned to go to Bigelow Brook today 1 mile east of Moine Bridge. Began to rain so stopped at McNeil's Brook and worked on shales south of where collection was made on Saturday. Found very fine trilobites, and between Sholes, declined over 100 nice specimens of several genera, their mostly trilobula or sinuvalis. Some fossilized found in hard limestone bands as in shale. See opposite page.
August 26th.

Went 7 miles out on the Bengal road east from Marion Bridge to the forks of Big Front Brook and Little Front Brook where Mr. Mathew said fossils were to be found, but many were found. Searched the shales along both brooks for many miles and only secured about 25 specimens of trilobite of Paradoxides, these were same as found on the Appalachian of McNeil Brook. Bad weather came on at 4 P.M. I returned to Marion Bridge in driving rainstorm.
August 29th

Went out Big Trout Brook way again to finish up the search in that direction. Searched several ravines leading up from the brooks, found plenty of shale but no fossils. Along the hillsides were fragments of shales and slates like what Mather calls Etchminian but no fossils were in them and none were in situ. People in that vicinity said that Mr. Mather spent considerable time on the open fractures lots of the drift material.

August 30th

Brook eighteen miles to Grand Mira. Found there considerable shale and Etchminian slates but no fossils. On way back on the other side of the river stopped again at salmon river locality described on page 11 and looked for more fossils along Gillis Hill. Found a play fifer. These appear to be Etchminian. Am not sure.
August 31st

Worked all day on McNeil Brook on the east shore of the old mill pond working beyond the point worked the 27th and secured a fine lot of specimen. Just at night found a fault on a ravine at the south end of the pond and here in the reversed shales found some good trilobites.

Diagram with thickness of bedding on next page.
Bridggle Sandstone

Worked through the forenoon on the bedding where the trilobite was found yesterday on the surface at the head of the pond as shown in diagram on opposite page. Exhausted the locality by noon but found quite a number of good trilobites and brachiopods. Some of them fine specimens.
Monday Sept. 3rd

Worked from head of the pond on McCull's Brook from the trilobite ravine (page 30) going south to the bridge at the Shingle Mill road where the upper Cambrian occurs in. Examined all the bedding carefully but obtained few fossils!

September 4th

Worked in afternoon making boxes for packing the specimens. In afternoon went to the Pearson Brook and got 60 specimens of trachipods and fragments of trilobites from outcrop No. 2 - Diagram page 12.
September 5-th

Worked again on Mathew's Etcheminian or McLeod's Brook. Examined every layer of
the shale and hard sandstone bands carefully without discovering even a fragment
of a fossil.

The conglomerate crop out on the west side of the brook near the old dam and a few
dozen above cross over the brook and run northwest into the pasture. Where they cross the brook is seen the contact of the shales.

Next to the conglomerate are a few feet of soft, shale, red, grey, resembling
Kevelin above this are about 30 ft. of Mathew's Upper Etcheminian Shales
and above these in the fracture lot are a few ft of hard, red, somewhat calcareous
sandstone. From this point for one mile everything is covered by McLeod's Brook.
Sept. 6th

Washed on outcrop No. 1 in McDean Valley as shown in the diagram on opposite page. A few specimens were found here Aug. 16th. Today quarried extensively into the cliff and got access to the hard band carrying the fossils and was fortunate enough to obtain a fine lot of over 200 beautifully preserved brachiopods belonging to the Glenoana fauna of Maestricht.

Just at night found outcrop No. 3 some distance up the valley. Evidence here of fine fossils. Same road. Angulates as in No. 2. Shall work this outcrop tomorrow.
Sept. 7th
Worked the outcrop on McLean's Valley, found last evening. This will be outcrop No. 3, as shown in diagram on page 26. Found some very fine brachiopods here. Same species as found in No. 2. Exhumated the find then searched further north and found another outcrop of fossils in a higher bed where small lingulae were very numerous but many of them badly crushed. This lingula outcrop No. 4 in McLean's Valley. Secured a lot of these fossils.

Sept. 8th
In forenoon making boxes for packing specimens. In afternoon packing boxes.

Monday, Sept. 10th
Explored ravines about 3 miles east of Marion Bridge on the north side of Mirot River where told there were Shales. Found no Cambrian Shales there. They lie far above the Cambrian.

Packed my baggage in the evening and tomorrow morning start with my boxes of specimens for Sidney.
Sept. 11th

Got to Sidney at noon.
After dinner shipped
6 boxes to Mr. Walcott on
the Plant Line Steamers Florida,
Monto & Mr. Walcott.

Am to stop here in Sidney
overnight and in the
morning go out 12 miles on
the Southland Railway to
Leitches Creek where I am
told there are many fossils.
This is not far from Mathews
Boisdale Section.

Sept. 12th

A very hard rainstorm
preceding today and wind
blowing a gale.
Will not go out
to Leitches Creek until it
clears up.
Sept. 13th
Took early train this morning from Sidney to Leitches Creek Cross Roads station. At this station hired a team to take myself and baggage out 3 miles to Angus Johnson's at Leitches Creek on Harratine's Lake where they are fossils.
Mr. Angus Johnson could not keep the but a mile farther on found a boarding place with Norman Johnson.
After dinner Angus Johnson went with me to the shore of the Lake. There were no Cambrian Shales there but hard limestones of the Silurian. Nothing else could be done worked there until tomorrow and secured a number of fine specimens.

Finding that it was only an hours drive from Norman Johnson's to Mathew Bridgade Section concluded on the evening to remain with Mr. Johnson and hired him to help me and furnish team to all the points on Mathew's Section. Am to pay him $2.00 per day for himself and team, and $3.00 per week for board.
As Mr. Johnson has always lived until recently at Bridgade which is only 4 miles distant, he knows the whole country and is familiar with the shale outcrops. He also knows localities not worked by Mr. Mathew.
Sept. 14

Mr. Johnson took me 4 miles to Johnson's Rock on his farm at Foisdale, a locality not referred to by Matters. Examined the shales along this brook from the highway where a sawmill is being built. After going over about 1,000 ft. shale, about half way to the fynite on the mountain we found a thick band of coal black shales carrying numerous small brachiopods, apparently *Ephahypetoliths* of the *Bcltina* fauna. Worked this horizon until 2 PM, describing a fine representation of the *fossils.*

Spent the rest of the day searching the shales especlal ly the stream to the fynite on the mountain. This whole stream shows a great effusion of Cambrian shales.
Sept. 15th

Learned last evening of an extensive outcrop of Shales 5 miles south of the junction of Upper Sketch Creek District, we drove down there this morning and found a James who knows the locality, hired him to go with us. In a little ravine 2 miles from Upper Sketch Creek, we found a bees small Brachiosites. This is in what is called Barachois Glen. Going a little further down the Glen and towards the mountain, we found another extensive outcrop of Cambrian Shales on a ravine through which a small Brook runs to McClanid's Brook. This is 4 miles from the mouth of McClanid's Brook, which empties into Little Bear Creek. At this we found a very prolific band in the Shales and obtained a large number of finely preserved Brachiosites. There are evidently Belzoni Brachiosites.

I still paid today for hiring extra men for the guide.

Diagram of locality opposite page.
Monday Sept. 19th
Went this morning to the last locality discovered on Saturday afternoon. Worked there until 10 A.M. and secured a fine lot of well preserved trackoids of several genera and species. Then followed up Dr. Clane's Brooks for two miles skimming several shale beds formed at two or three points a few fossils. At 2 1/2 miles found shales in two little Brooks running into Dr. Clane's Brook. In greigh shales there we found a few Trilobites and fragments of a Trilobite of a large species. From this point went on to DeHugries on the cross road to Brodall where Mr. Mathews had his Headquarters when in this region. Found a few trackoids in the shales south of DeHugries.
Sept. 18

Hard rainstorm all day.

This world.

Sept. 19th

Went to Barachois and examined shales in the R. A. cuttings but found no fossils.

In ravine a short distance south of the Barachois Post Office east of the R. A. on the banks of a little stream found shaled of the Clemus gone and made there a good collection of Silobita and Schizopychus all well preserved. Found two whole Silobita.

Mathews knew nothing of this.
Sept. 20th

Went to Barachois and made search along the R.R. cuttings and along the highway and short of Mainland on Brad D. A Lake from here towards George River came on the Stellimun but could not find any fossils. Went north toward George River until we came upon the intrusive rocks near George River, then returned to Barachois to the ravine worked yesterday here we got about 25 more good specimens among them one perfect trilobite. Examined 2 other small ravines do not see as much more can be done in this region.
September 21, 1855
Storin day
Sept. 22nd
Still raining
Sept. 23rd
Monday Raining
Hand a gale!

Monday Sept. 24th
Mr. Johnson carried
and to North Sidney
Procured boxes and packed
the bundles of the cemets and
delivered them to the
Plant Line to be shipped
to Boston on Oct. 2nd on
the Steamer Florida
No Steamer to Boston this
week. Tomorrow start
Homewards.