

*Proper mid-Atlantic  
of Laurentian.  
By James H. Cook  
who in N. Devon*

*Red = Laurentian including Hudsonian.  
Blue = Copper-bearing rocks of T. Superior (Laurentian)  
Purple = Silurian & older - East by way of Laurentian  
Chief Laurentian in Mackenzie valley*

*Green = Cambrian with some of the  
Laurentian.  
Yellow = Part of Laurentian etc. on the edge  
of the Laurentian.  
Umbra = Ursa Stage, & Dev. of  
Hudson Bay & N. end of  
Greenland Land.  
o = Maps in search expedition  
Arctic Exped. 1855-56*

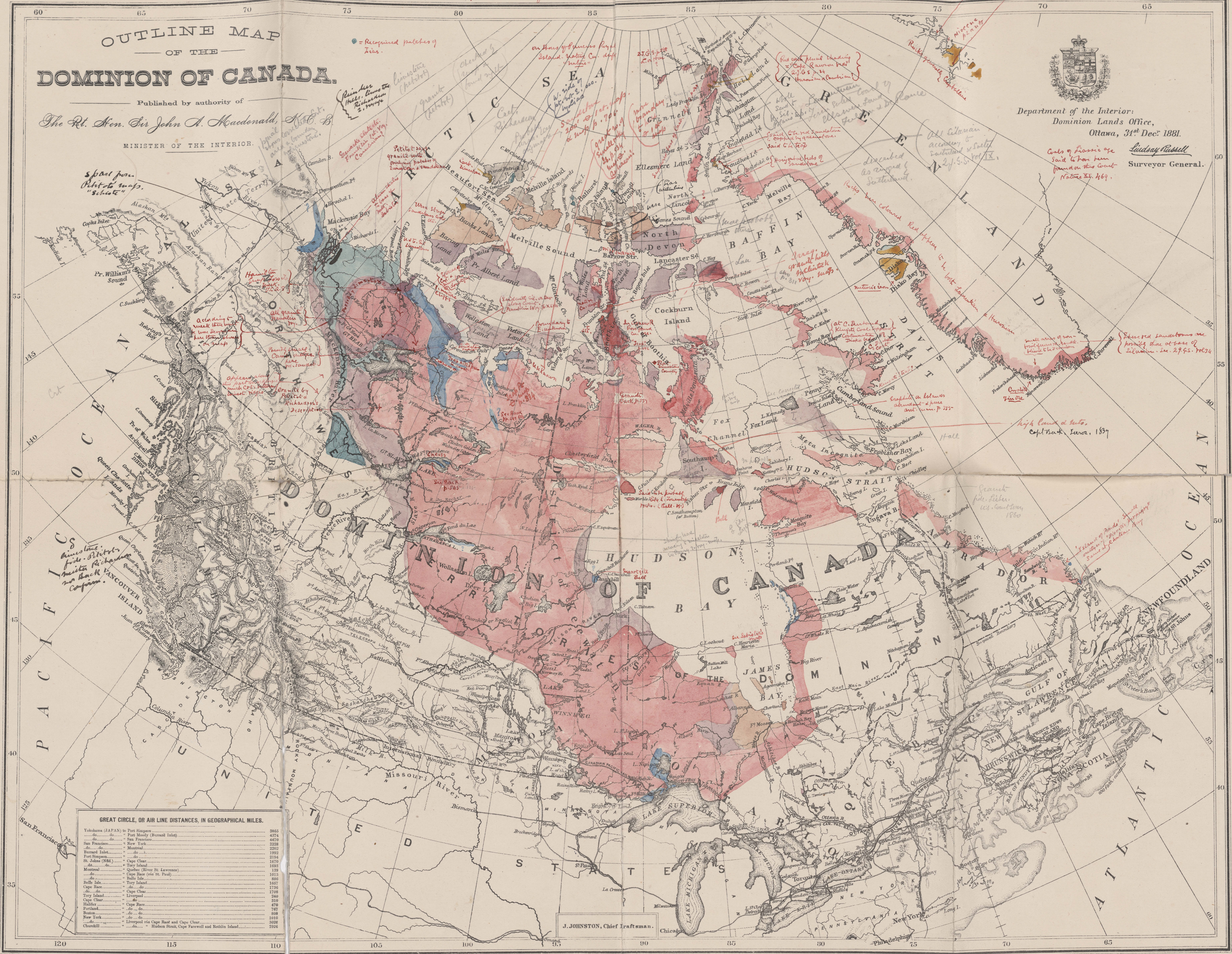
# OUTLINE MAP OF THE DOMINION OF CANADA.

Published by authority of  
**The Rt. Hon. Sir John A. Macdonald, K.C.B.**  
MINISTER OF THE INTERIOR.



Department of the Interior:  
Dominion Lands Office,  
Ottawa, 31<sup>st</sup> Dec. 1881.

*Lindsay Russell*  
Surveyor General.



GREAT CIRCLE, OR AIR LINE DISTANCES, IN GEOGRAPHICAL MILES.

Yokohama (JAPAN) to Port Simpson	3865
San Francisco to Port Moody (Burns Bay Inlet)	4274
San Francisco to New York	4470
Buenos Aires to Montreal	2202
Buenos Aires to Port Simpson	1922
Port Simpson to Cape Clear	2154
St. John (N.B.) to Cape Clear	1670
Montreal to Cape Clear	1693
Quebec (River St. Lawrence) to Cape Clear	132
Cape Baso (via St. Paul) to Cape Clear	1013
Bath Inlet to Cape Clear	886
Bath Inlet to Cape Clear	1657
Cape Baso to Cape Clear	1756
Portland to Cape Clear	1708
Hobart to Cape Clear	2440
Cape Clear to Cape Baso	310
Portland to Cape Clear	470
Bath Inlet to Cape Clear	787
New York to Cape Clear	1010
Liverpool to Cape Baso and Cape Clear	2028
Chambly to Hudson Strait, Cape Farewell and Booth Inlet	2226

J. JOHNSTON, Chief Draftsman.

*Costs of Pianos are said to have been found on the coast of Labrador. Nature 23, 469.*

*high level of water, Cape York, Jan. 1897*

*Grant Hill, St. John's, N.S., 1860*

*Small islands of sand and gravel found on the coast of Labrador. Nature 23, 469.*

*Small islands of sand and gravel found on the coast of Labrador. Nature 23, 469.*

*Small islands of sand and gravel found on the coast of Labrador. Nature 23, 469.*

*Small islands of sand and gravel found on the coast of Labrador. Nature 23, 469.*

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*Small islands of sand and gravel found on the coast of Labrador. Nature 23, 469.*

*Small islands of sand and gravel found on the coast of Labrador. Nature 23, 469.*

*Small islands of sand and gravel found on the coast of Labrador. Nature 23, 469.*



Acute Geology  
1885  
G. D. S. S.



Arctic Geology

Permalife.

-- By Standard

The Hollinger Corp. - Arlington, Va.

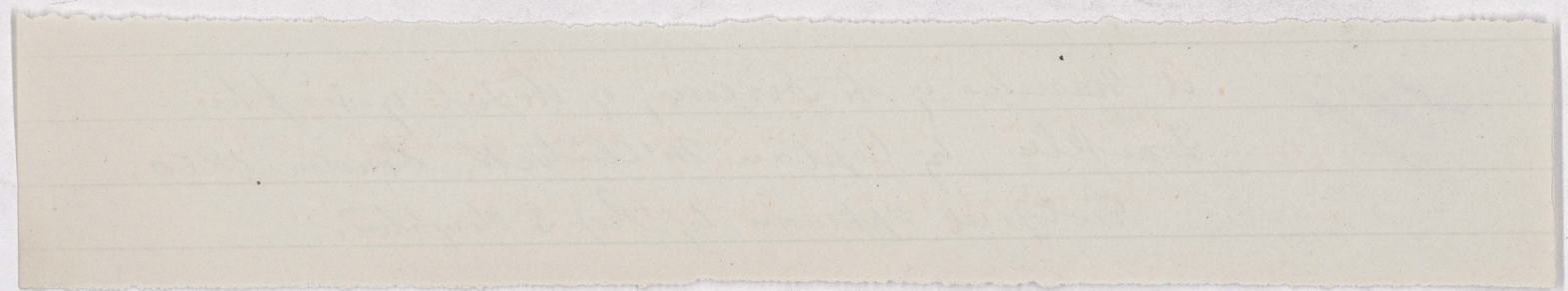


~~new~~  
~~edition~~  
~~1860~~

60

A Narrative of the Discovery of the Lake of Sir John  
Franklin by Captain M'Clintock. London. 1860.  
Zoological Appendix by Prof. S. Houghton.





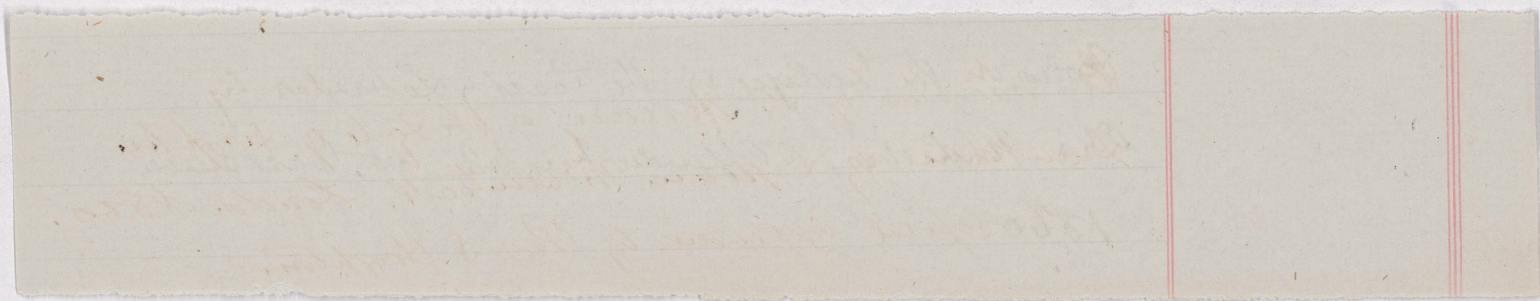


Notes on the Geology of the Coast of Labrador by  
Oscar M. Libber. Appendix No. 42. U.S. Coast Survey

1860.

60







chap. on Geol. bot  
Too general  
to me

61

1861

The Polar Regions by Sir John Richardson, Edinburgh.



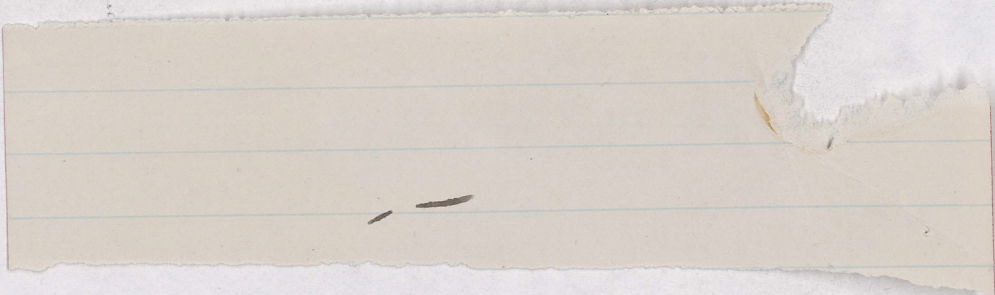




see Edward Osborne. "Pioneer." 1851

James Sed. also Suglyfield.







63

Report on the Geological & Mineralogical  
Specimens collected by Mr C. F. Hall in Frobisher  
Bay, Am. Journ. Sci & Arts Second Series  
Vol XXX. 1863. p. 293.



Handwritten text on a piece of aged, yellowed paper with a deckled edge. The text is extremely faint and illegible, appearing as light grey or brownish smudges and ghosting of letters across the page. The paper is mounted on a white background.



65  
Preliminary notice of a small collection of fossils  
found by Dr. Hay, on the west shore of Kennedy Channel  
by H. B. Meek  
Am. Journ. Sci. & Art. (second series) Vol X No. 1865  
p. 31.



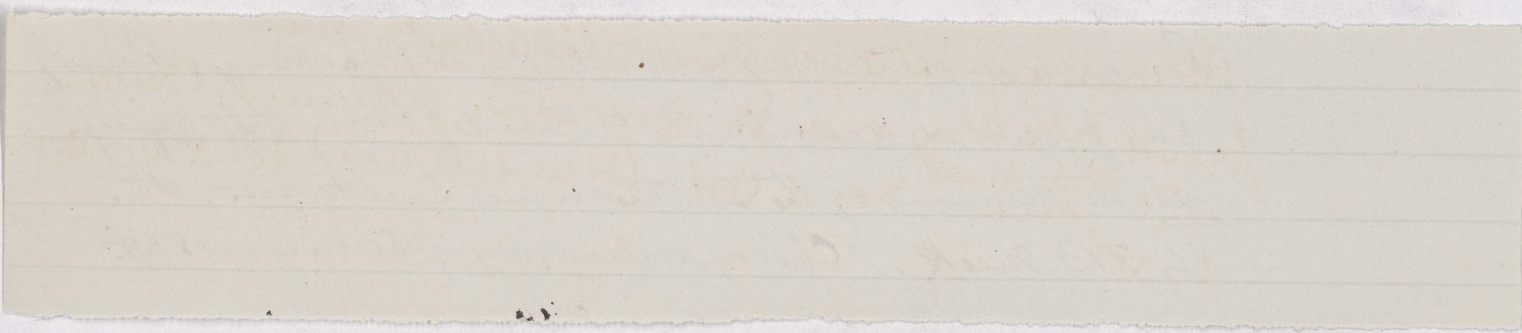
Faint, illegible handwriting on a piece of aged, yellowed paper with horizontal lines. The text is mostly obscured by fading and bleed-through from the reverse side.



68

Remarks on the Geology of the Valley of the Mackenzie River,  
with figures & descriptions of Fossils from that region,  
in the Museum of the Smithsonian Institution, etc.,  
by F.B. Meek. Chicago Academy of Sciences. 1868







Geol. wapp  
Linné be  
wunder

Flora Fossilis Arctica. Dr Oswald Her

Vol. I. 1868. ~~Der arctische americanische~~

~~Archipel.~~ Vol. IV. <sup>1878</sup> Die Miocene Flora des

Grinnell-Landes. Vol. VI. 1880 Beiträge

Zur Mioceenen Flora von Nord-Canada:

(Vol II. 1871. Fossile Flora der Bären Insel

78







Scientific results of the "Polaris" Arctic Expedition,

74 Nature. Vol IX, 1874. p. 404.



Handwritten text on a strip of aged, yellowed paper. The text is written in a cursive script and is extremely faint, appearing as light brown or tan ink. The paper has a rough, torn edge on the top and bottom. The text is arranged in approximately four lines, though the individual characters are difficult to discern due to fading and the texture of the paper. The overall appearance is that of an old, weathered document fragment.



very little  
appear to  
be chiefly  
stones.

74

A Whaling Cruise to Baffin's Bay etc by A. H. Markham  
London. 1874. Appendix C. List of Geological  
Specimens by R. Etheridge







Manual of the Natural History, Geology & Physics  
of Greenland & Neighbouring Regions etc.

75  
Edited by Prof. J. R. Jones. London. Government.  
1875.





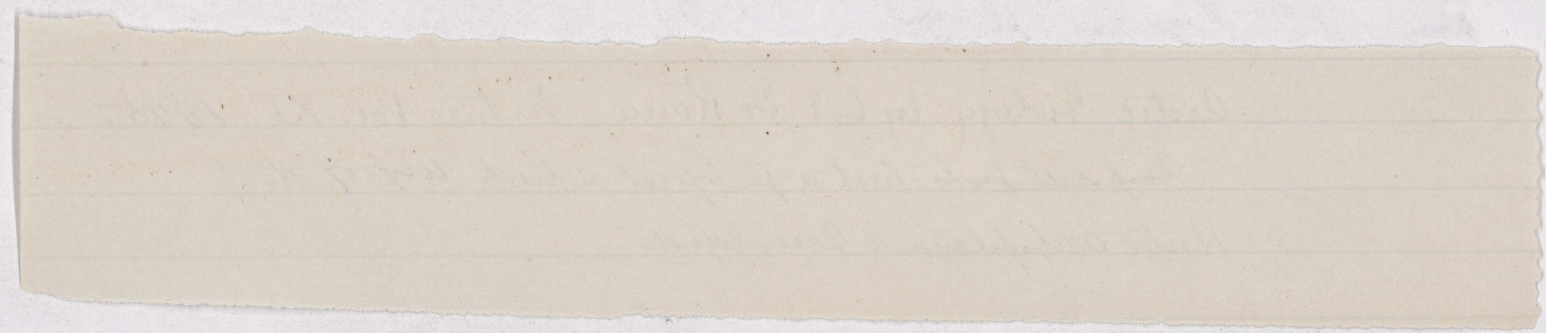
Arctic Geology by C. R. De Rance. Nature vol. XI. 1875,

~~Map with fold~~ with a geological sketch maps of the

Arctic Archipelago & Greenland.

75-





On a Fossil Saurian Vertebra from the Arctic Regions  
by Prof. A. Leith Adams. Proc. Royal Irish Acad.

2nd Series Vol II. 1875

75-





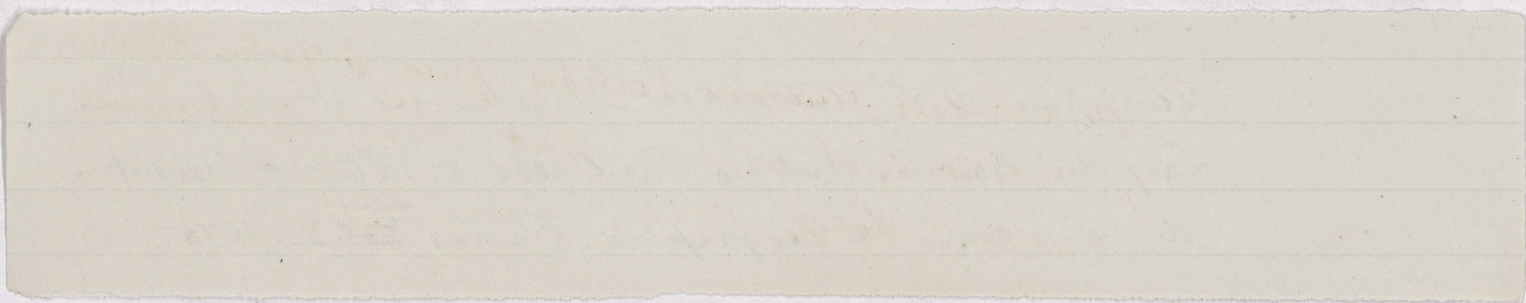
Géographie de l'athabaskaw - Mackenzie et des Grands

Lacs du Bassin Arctique Par l'abbé E. Petitot, Bulletin

de la Société de Géographie, Paris, <sup>Tom</sup>~~Vol~~ IX, 1875.

75-





78

Geology of the Coasts of the Arctic Lands visited by the  
late British Expedition under Capt. Sir George Nares etc  
by Capt. H.W. Fielden & C.E. De Rance. Quarterly

Journal Geological Society, vol. XXXIV (1878) p. 556.

Abstracts of this & the following paper in Am. Journ. Sci. & Art.

(Third Series, vol. XVI, p. 139)

78



*[Faint, illegible handwriting on a piece of aged, yellowed paper with horizontal lines.]*

Notes on Fossil Plants discovered in Grenville Land  
by Capt H. W. Fielden etc. by Prof. Oswald Heer,  
Quart. Journ. Geol. Soc. vol XXXIV. (1878) p. 66.

78



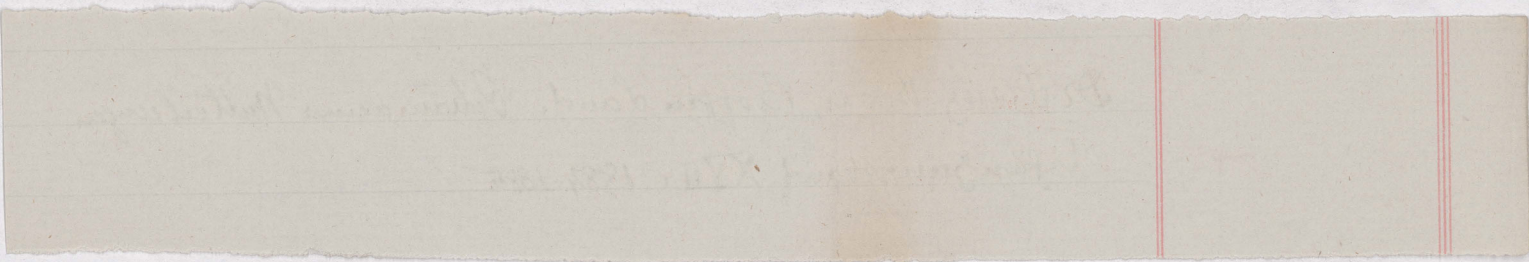


Dr Franz Boas, Baffin Land. Petermanns Mitteilungen

Ergänzungsband XVII. 1884-1885

1885-

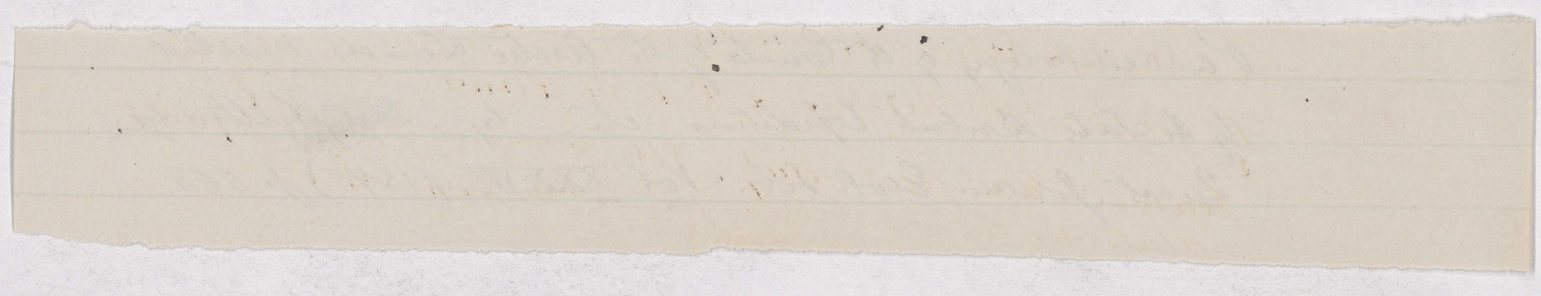




78

Palaeontology of the Coasts of the Arctic Lands visited  
by the State British Expeditions etc. by ~~R.~~ R. Etheridge  
Quart. Journ. Geol. Soc. Vol XXXIV. (1878) p. 568





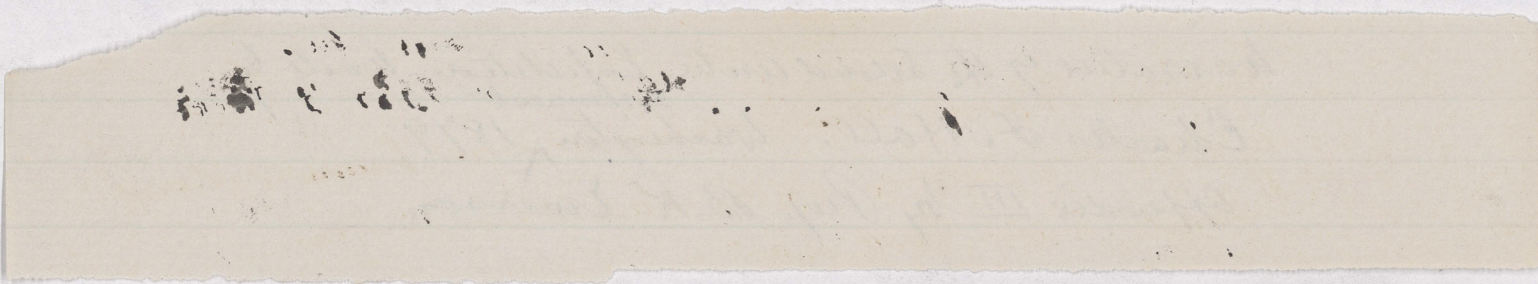
Narrative of the Second Arctic Expedition made by

Charles F. Hall. <sup>Government</sup> Washington, 1879

79

Appendix III by Prof. B. K. Emerson.





Is there any warrant for Silurian Saurians on S. Shore of  
St. Lawrence as shown on maps of Ishister? (part of shore R).

Saurians in Speitzbergen in beds referred to Trias (L. de la Roche)  
Hulke. referred to Z. J. G. S. 34 p. 560





35-

Narrative of a Second Voyage in Search of a North West  
Passage etc. 1829-33 by Sir John Ross. London 1835-  
Appendix on Zoology by Lieut. Ross.



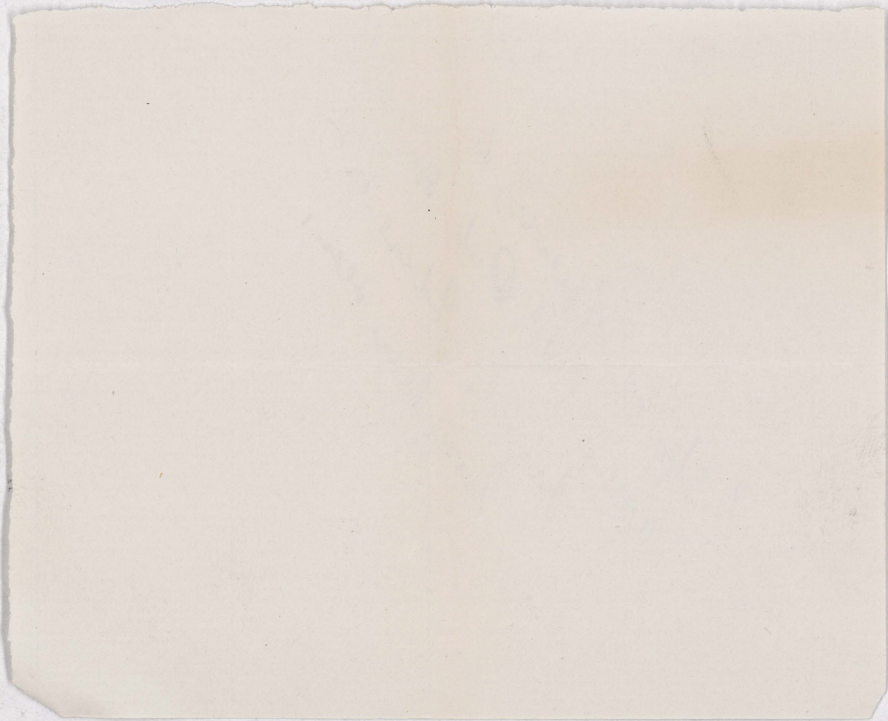
29

82 - Bells outlets

85-  
Reports of R. Bell in Reports of Geological  
Survey of Canada ~~special~~ 1877-78, 1879-80,  
~~also~~ 1882-84 & 1885. Also The Geology of  
Hudson's Bay & Strait in the Report of the Hudson's Bay  
Expedition 1885 - Department of Marine & Fisheries  
Ottawa & Geology & Economic Minerals of  
Hudson Bay & Northern Canada (abstract) in  
Trans. Royal Soc. Canada Vol II. Sect IV. p. 241.



? should refer us to  
address R. D. Aubrey  
Amos, there is  
his name seen.

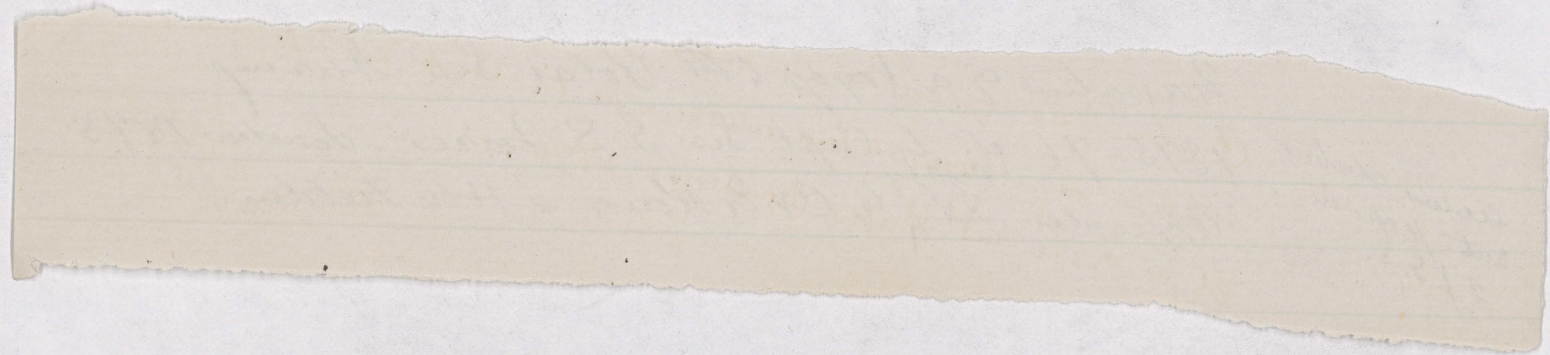


Narrative of a Voyage to the Polar Sea during  
1875-76 etc by Capt. Sir. G. S. Nares. London. 1878  
Appendix <sup>Evology</sup> ~~AV~~ by C. S. De Ranca & H. W. Fielden.

seems identical  
with paper in  
Lij. G. S.

78





75

Carte Géologique de la Terre par Jules Marcou &  
Explication d'une seconde édition de la Carte Géologique  
de la Terre par Jules Marcou, 1875.

Handwritten text on a piece of aged, yellowed paper with a scalloped right edge. The text is written in cursive and is extremely faint, appearing as light grey or brownish marks. The paper has a small dark spot on the left side and some minor staining on the right side.



Report from the Select Committee on the  
Hudson's Bay Company etc. London  
Government, 1857 (Geological map)

57

*Faint, illegible handwriting on lined paper.*

*Faint, illegible handwriting on the right side of the paper, possibly a date or reference number.*

no. 111  
now

57

Map of the north-west part of Canada etc  
by J. Devine. Toronto. March 1857 (Geological  
indications)



*[Faint, illegible handwriting on aged, yellowed paper with red vertical lines.]*

Arctic Explorations by Dr Elisha K. Kane

Am. Journ. Sci. & Art. (Second Series) Vol XXIV 1857

57  
p. 235.





scattered  
geol. notes

57

A personal narrative of the discovery of the North-west  
Passage by A. Armstrong M.D., Late Surgeon & Naturalist  
to His "Investigator". London, 1857

Handwritten text on a long, narrow strip of aged, yellowish paper. The text is written in a cursive script and is mostly illegible due to fading and the angle of the strip. The strip is torn at the top and bottom edges. The text appears to be a list or a series of entries, possibly names or dates, but the specific words are difficult to discern. There are approximately 10-12 lines of text visible on the strip.

The Discovery of a Northwest Passage by H. M. S.

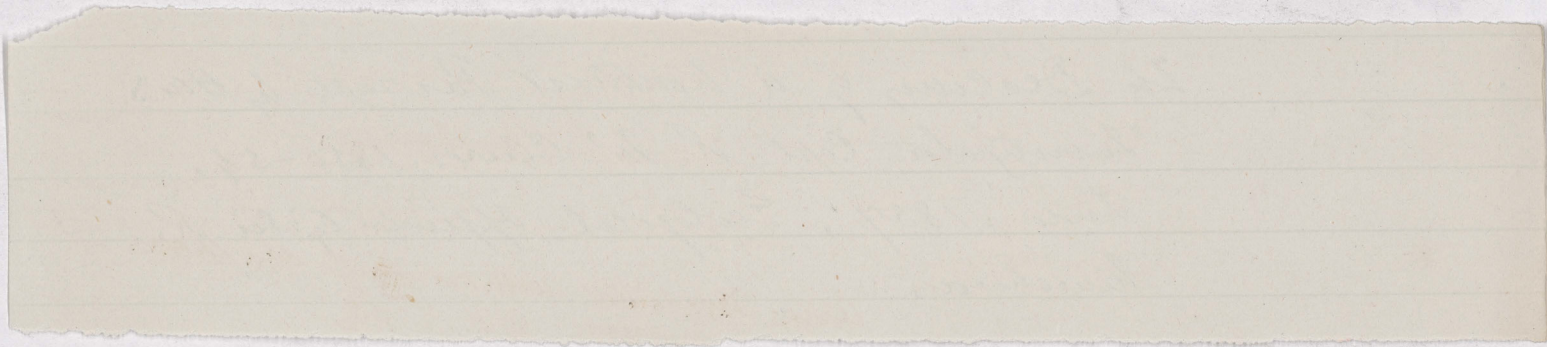
"Investigator" Capt. R. M. Clure, 1850-54.

London, 1857. Geological Appendix by Sir R.

Murchison.

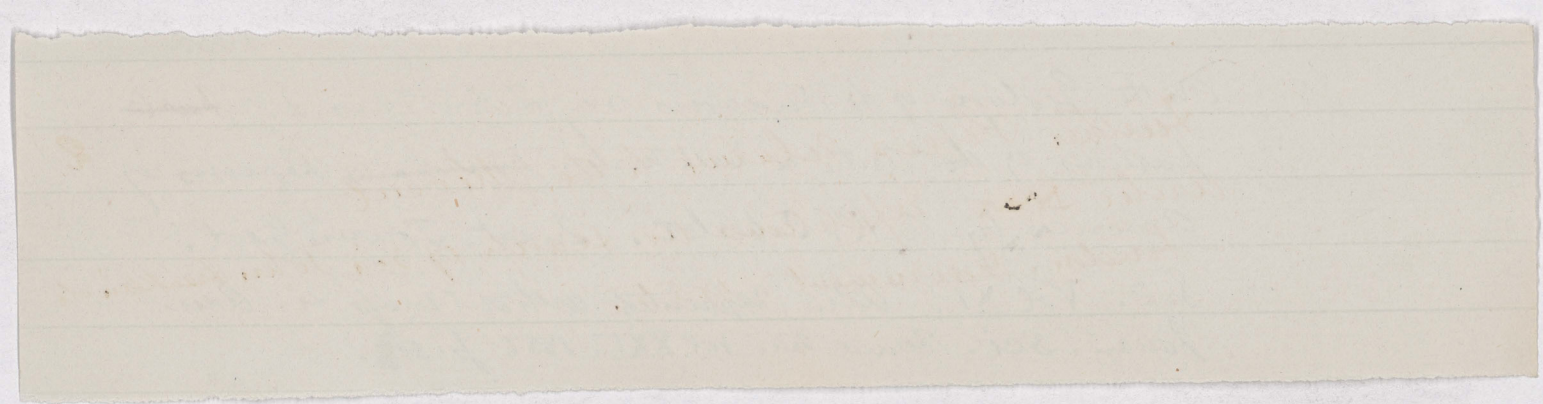
57





On the Geology of the Hudson's Bay Territories & of ~~part~~  
portions of the Arctic & North Western ~~portions~~ of Regions of  
America by A. K. Isabert. Quart. Journ. Geol.  
Soc. Vol XI. Also reprinted without maps in Am.  
Journ. Sci. Second Ser. Vol XXI. 1856 p. 313.

5-6





2

Further Papers relative to the Recent  
Arctic ~~Sea~~ Expeditions in search of Sir John Franklin etc  
London. Government, 1855.

55



On some additions to the Zoology of the Arctic Regions  
by J. W. Sæter, Report of the British Association  
for the Advancement of Science, 1855.

55-





Can I see  
this book.

55-

The Last of the Arctic Voyages, <sup>etc 1852-54</sup> by Sir E. Belcher  
London 1855 - Appendix by J. W. Salter on arctic  
Carboniferous Fossils, & by Prof. Owen on the remains of  
an Ichthyosaurus from Esmouth Island.





53

On Arctic Silurian Fossils of J. W. Salter. Quart. Journ  
Geol. Soc. Vol IX. 1853 p. 312

At the ...  
...  
...  
...  
...

53

On the Geological & Glacial Phenomena of the Coasts of  
Davis' Strait & Baffin's Bay by R. C. Sutherland M.D.  
Quart. Journ. Geol. Soc. Vol <sup>1853</sup> LX, p 296.



Handwritten text on a piece of aged, yellowed paper. The text is extremely faint and illegible, appearing as light brown or tan ink. The paper has a rough, torn edge on the top and bottom. The handwriting is cursive and spans across the width of the strip.

Chiefly descriptive  
of Sel. fossils.  
a few good  
localities.

52

Journal of a voyage in Baffin's Bay & Barrow Straits  
in 1850-51 by P. C. Sutherland, London 1852,

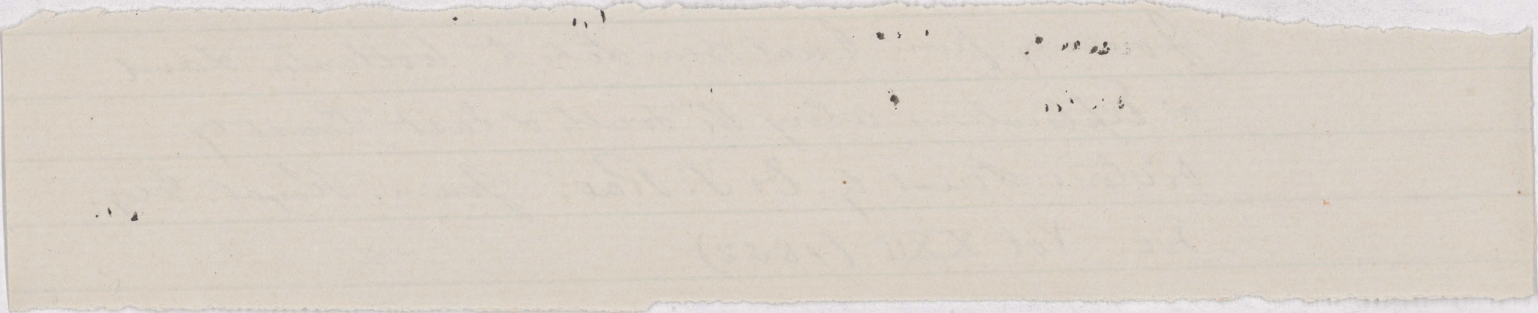
Geological Appendix by J. W. Salter.





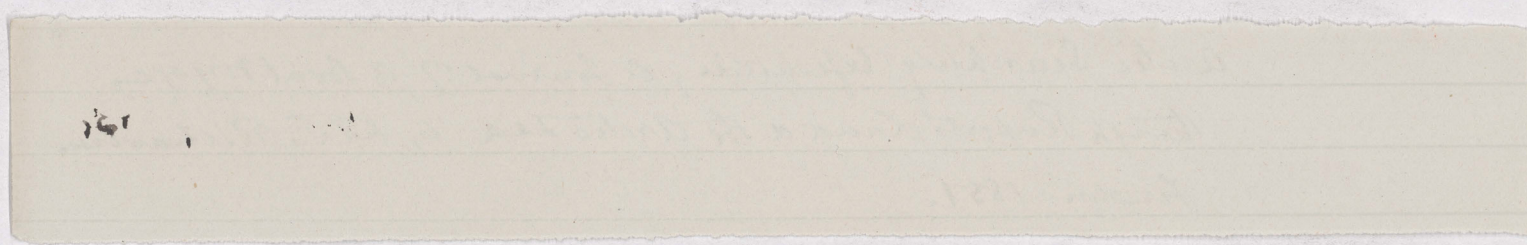
52

Journey from Great Bear Lake to Wollaston Land  
& Explorations along the South & East Coast of  
Victoria Land by Dr J. Rae. Journ. Royal. Geog.  
Soc. Vol XXII. (1852)



Arctic Searching Expedition, a Journal of a Boat Voyage  
through Ruperts' Land & the Arctic Sea by Sir J. Richardson  
London. 1851.

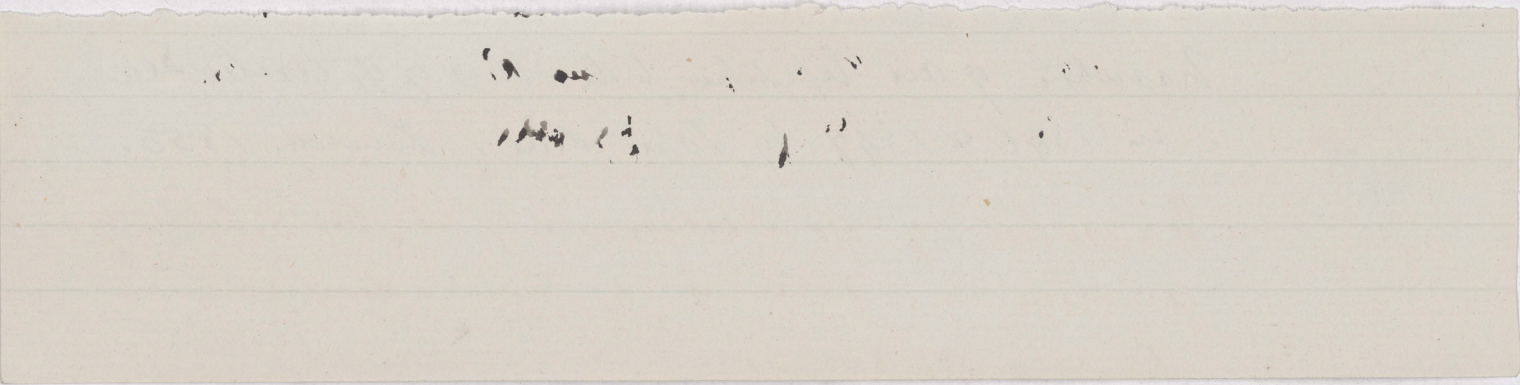
51





50

Narrative of an Expedition to the Shores of the Arctic Sea  
in 1846 & 1847 by John Rae, London, 1850.



Narrative of the Discoveries of the North Coast of  
America etc. 1836-39 by Thomas Simpson.

43

London, 1843.

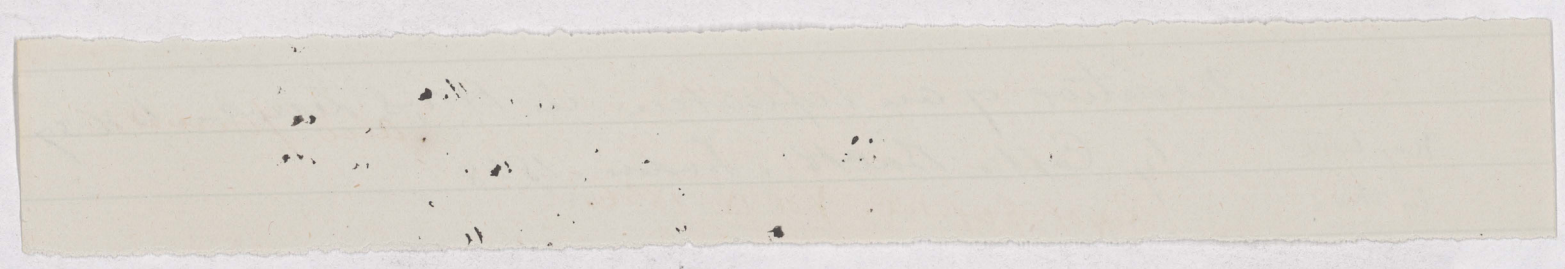
Handwritten text, likely bleed-through from the reverse side of the paper. The text is extremely faint and illegible due to fading and the texture of the paper. It appears to be organized into several lines, possibly representing a list or a series of entries.



38

very little  
in this.

Narrative of an Expedition in Husk, Terror. 1836-37  
by Capt. Back, London. 1838

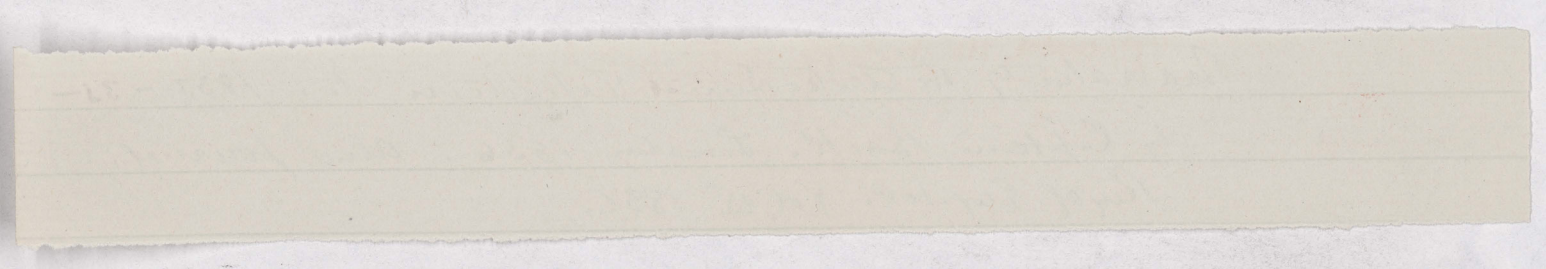


36

Narrative of the Arctic James Expedition etc. 1833 - 35 -

by Captain Back. London 1836. Also Journal,

Reyol. Europ. Soc. Vol IV. 1836.





Chaps in fact,  
but like last,  
seems to refer only  
to Parry's 2  
voyages to the  
Arctic islands  
& 1845

30

Narrative of Discovery & Adventure in the Polar Seas & regions  
by Professors Leslie, Jameson & Hugh Murray, Edinburgh, 1830



Included

29

very little in  
this. Last  
summary table.

Sketch of the Geology of the Arctic Regions etc.

Am. Journ. Science etc. Vol XVII. No. 1. (1829)

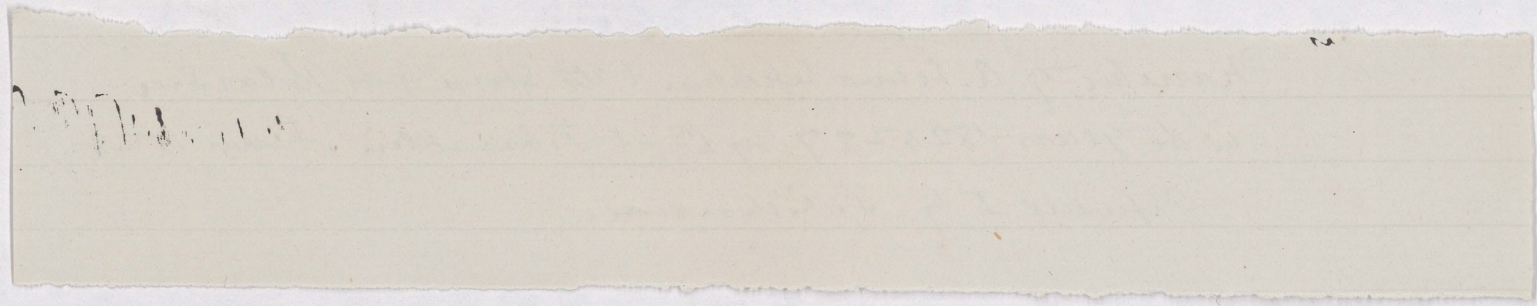




Narrative of a Second Expedition to the Shores of the Polar Sea  
in the years 1825-27 by Capt. J. Franklin, London 1828

28

Appendix I by J. Richardson.



Journal of a Third voyage for the  
Discovery of a North-west Passage etc.

by Capt. W. E. Parry, & London. 1826

Appendix by Prof. Jameson on geology of  
Countries discovered during Capt. Parry's  
Second & Third Expeditions.





a few good  
rules as  
Southampton  
& vicinity.

25-

A brief narrative of an unsuccessful attempt to reach  
Repulse Bay etc. by Capt. G. F. Lyon R.M.; London  
1825.

*[Faint, illegible handwriting on a strip of aged, lined paper.]*

Journal of a second voyage for the discovery of a  
North-west-Passage etc. 1821-23 by Captain  
Parry. London. 1824.

24

3

Received of the Treasurer of the  
Board of Directors of the  
City of New York the sum of  
Five Dollars



Hayes Open Polar Sea

~~Bulcher. Last of the Arctic Voyages.~~

Hall. Voyage of ~~Polaris.~~

See Greeley's book  
See Schwatka's book

Library

This should  
complete

Abstract De Rance.

~~Proc. Roy. Soc.~~  
~~1871~~

~~Parry and Schmitt~~

Brit. Ann. from Sci.

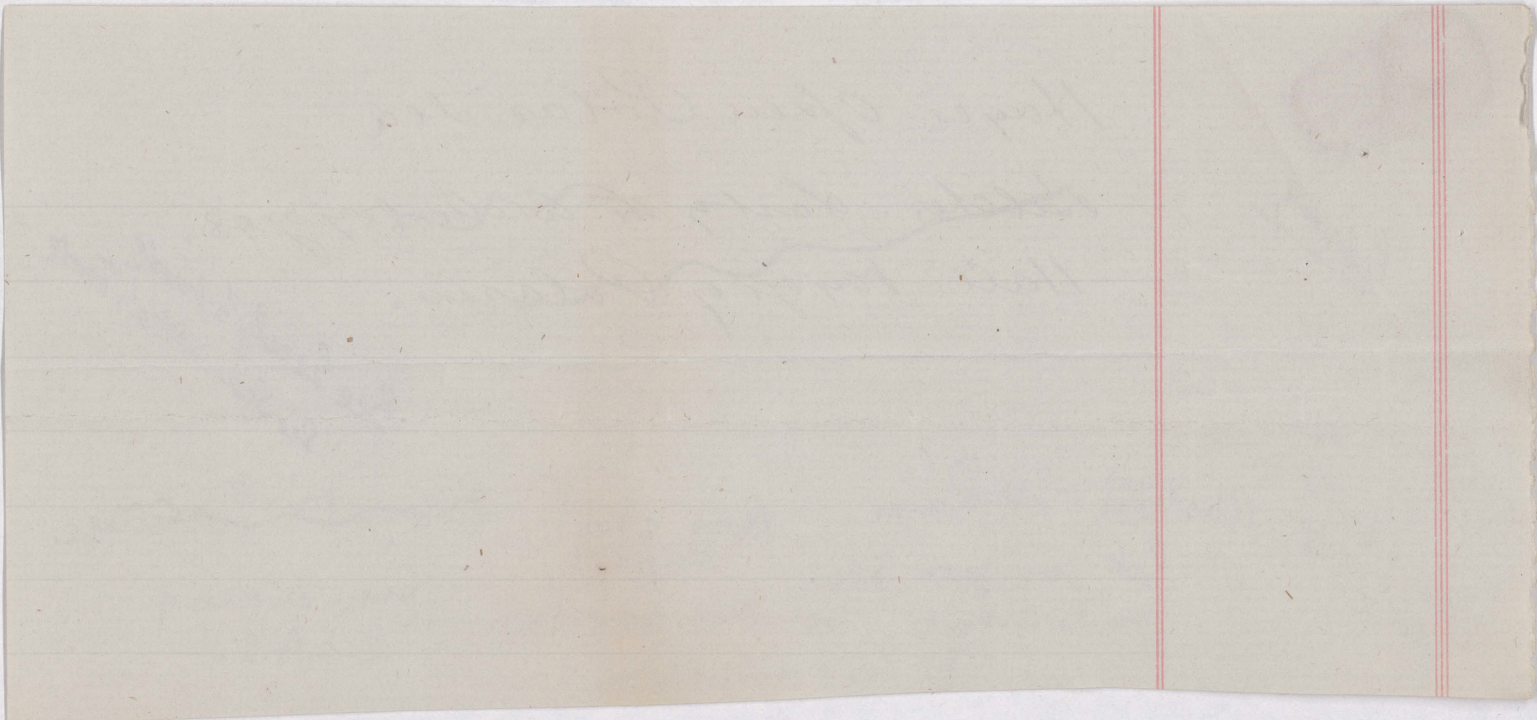
See B. Assn.

~~See Phil. Acad. Sci.~~

See. Index of

2. f. G. S.

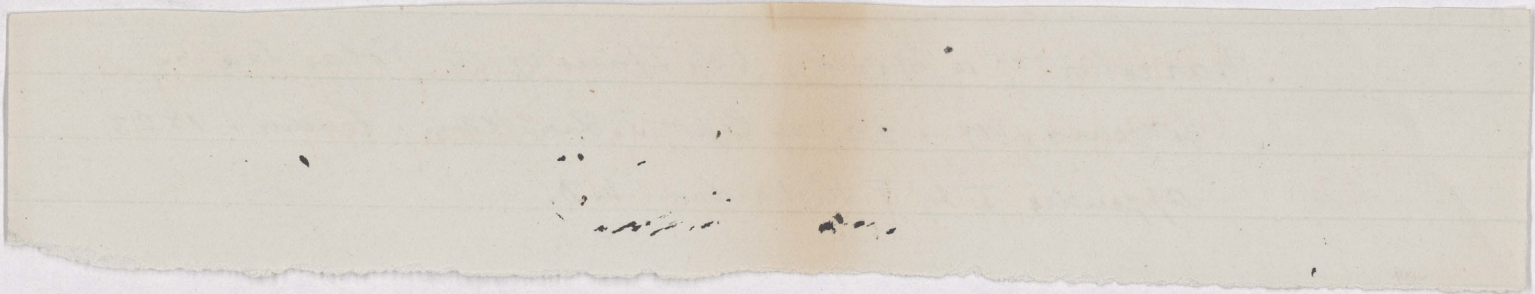
See Royal Society.



Narrative of a journey to the shores of the Polar Sea in  
the years 1819 - 22 by Capt. J. Franklin. London. 1823

23

Appendix I by J. Richardson M.D.





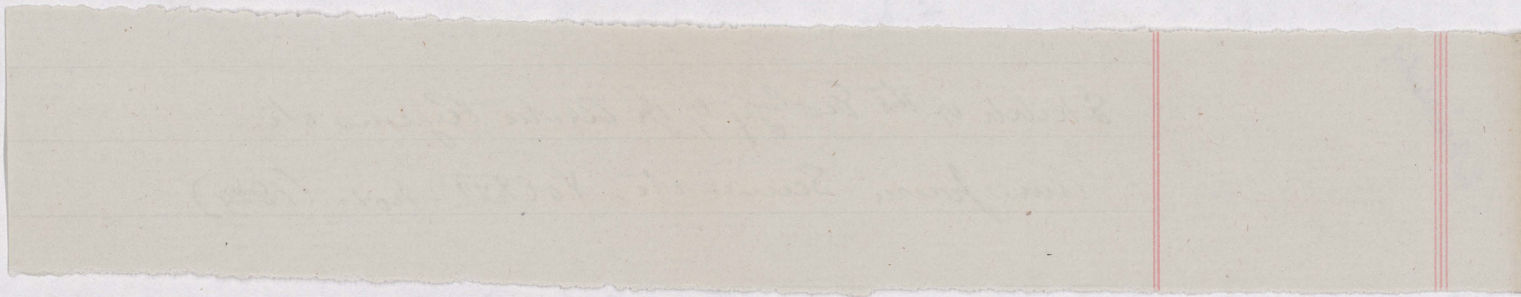
Infrachordata

29

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this. Pass  
summary table.

Sketch of the Geology of the Arctic Regions etc

Am. Journ. Science etc. Vol XVII. No. 1. (1829)





The boundaries of formations on the Wackuge River & in its vicinity <sup>between Athabasca & Slave Lake</sup> are laid down on careful consideration of all data afforded by the writings of Sir J. Richardson & other available authorities, which it is considered unnecessary to quote in detail. A few facts of special interest may however be referred to.

Quoted facts

The region on the Athabasca River & its tributary the Clearwater, to the South of Athabasca Lake characterized by the great abundance of pitch & petroleum deposits & springs, described by Sir J. Richardson & others is not included in the present map. (See Repts. of Progress Geological Survey, 1875-76 p 169., 1882-84 p 32 CC) It is interesting to observe <sup>however</sup> the continued occurrence of such deposits at intervals ~~to the Arctic Sea~~ along the Wackuge valley to the Arctic Sea.

on Slave River

At the Lightning Place of the Hummock, (the part of Wackuge between Athabasca & Slave Lake is named) thirty miles below Fort Chipewyan, the limestone beds were observed to contain mineral pitch in fissures (Journal of a Boat Voyage etc Vol I. p. 137)

forms

About half-way between Athabasca & Great Slave Lakes, the Salt River flows into the Slave River <sup>or a part of the Wackuge from the West, as Richardson writes.</sup> The Salt River flows in from the Westward of about ~~distance~~ way below the portages. We ascended it for twenty-two miles, including its windings, but not above half that distance in a straight line, for the purpose of visiting the Salt Springs from whence it derives its taste & name. Seven or eight Copious saline springs issue from the base of a long even ridge about six hundred feet high, & spreading their waters over an extensive clayey plain, deposit a considerable quantity

Captain Back visited these salt springs in 1833. He writes "There were no mounds like those seen in 1825; but just at the foot of the hill which bounds the prairie in that quarter, there were three springs, varying in diameter from four to twelve feet, & producing pellets of salt, from fourteen to thirty inches in height. The streams were dry, but the surface of the clayey soil was covered, to the extent of a few hundred yards toward the plain, with a white crust of saline particles. (Narrative of the Arctic Land Expedition. 1833-36)



Wackuzee R. between Athabasca & Slave Lakes

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on Slave R. (the part of Wackuzee between Athabasca & Slave Lake is named)

At the Lightning Place of the Hummock, thirty miles below Fort Chipewyan, the limestone beds were observed to contain mineral pitch in fissures (Journal of a Boat Voyage etc. Vol I. p. 137)

forms

About half-way between Athabasca & Great Slave Lakes, the Salt River flows into the Slave River on ~~the upper part of the Wackuzee~~ <sup>the lower part of the Wackuzee</sup> from the west. The Salt River flows in from the westward a short ~~distance~~ way below the portages. We ascended it for twenty-two miles, including its windings, but not above half that distance in a straight line, for the purpose of visiting the Salt Springs from whence it derives its taste & name. Seven or eight Copious & olive springs issue from the base of a long even ridge about six hundred feet high, & spreading their waters over an extensive clayey plain, deposit a considerable quantity

Petitot states that the Caribou Mountains, between Salt River & the Peace River, contain according to the Indians, much Rock Salt. (Bul. Soc. Geog. Paris Vol X p. 140)

Streams renders it only slightly brackish. A few patches of greyish Crystalline gypsum were exposed on the side of the ridge from whence the Springs issue! (Franklin's Tent Journey, at



Wackuzie R. between Athabasca & Slave Lakes

The boundaries of formations on the Wackuzie River & in its vicinity <sup>between Athabasca & Slave Lakes</sup> are laid down on careful consideration of all data afforded by the writings of Sir J. Richardson & other available authorities, which it is considered unnecessary to quote in detail. A few facts of special interest may however be referred to.

Quote facts

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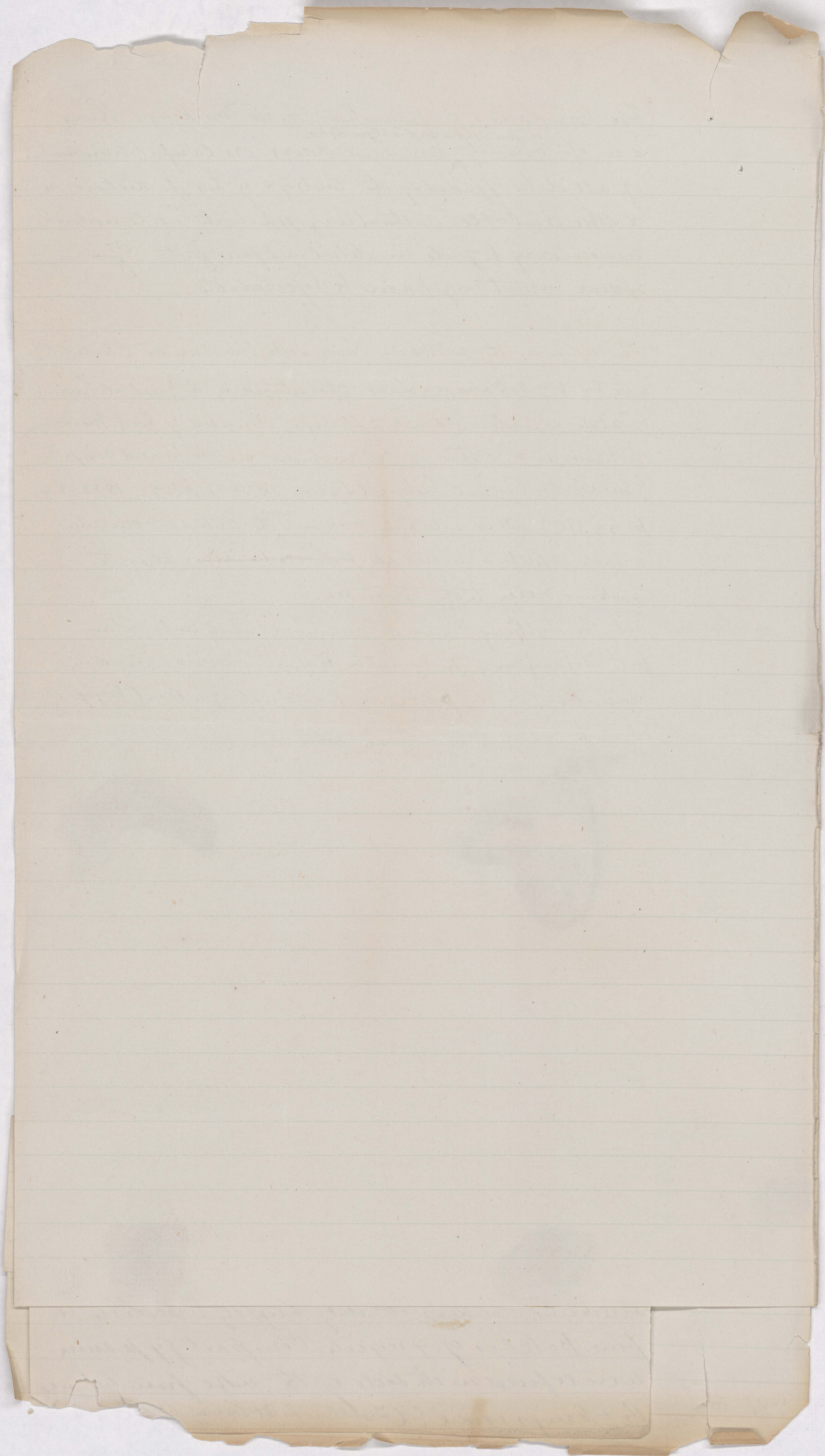
on Slave River

At the Lightning Place of the Hummock, thirty miles below Fort Chipewyan, the limestone beds were observed to contain mineral pitch in fissures (Journal of a Boat Voyage etc Vol I. p. 137)

forms

About half-way between Athabasca & Slave Lakes, the Salt River flows into the Slave River <sup>on upper part of the Wackuzie from the west, as Richardson writes.</sup> The Salt River flows in from the westward a short ~~distance~~ way below the portages. We ascended it for twenty-two miles, including its windings, but not above half that distance in a straight line, for the purpose of visiting the Salt Springs from whence it derives its taste & name. Seven or eight Copious saline springs issue from the base of a long even ridge about six hundred feet high, & spreading their waters over an extensive clayey plain, deposit a considerable quantity of very pure common salt in large cubical crystals. The wetter water flowing into the Salt River gives it a very bitter taste, which it retains until near its junction with the Slave River, when the addition of some fresh water streams renders it only slightly brackish. A few patches of greyish compact gypsum were exposed on the side of the ridge from whence the Springs issue. (Franklin's Tent Survey, etc)







Great Slave Lake.

Richardson describes the west shore of Slave Lake as composed of horizontal strata of limestone, forming a flat country in Franklin's second voyage (Appendix p. XXIV) In his Journal of a Boat Voyage (Vol. I. p. 152) he writes. - "In the vicinity of the westernmost Channel of the delta [of Slave River] & from thence to the effluve of the Mackenzie, the whole southern shore of the Lake is limestone, associated with a bituminous shale, & belonging, as well as can be ascertained from its fossils, to the Erie division of the New York System, which includes the Wasallus shales". He also refers to the limestone as being bituminous, & speaks of fossil shells the cavities of which are filled with bitumen.

Franklin's 2nd voyage

see west fossils etc.

he states that - "Amongst all the Collections under examination from various localities along Mackenzie River & its tributaries, between Clearwater River & the Arctic Ocean a distance of several hundred miles from them are no Cambrian or Silurian forms" (p. 76)

Prof. Meek, in a paper published in the First volume of the Transactions of the Chicago Academy of Sciences (1868) describes a number of fossils obtained from seven or eight localities along Mackenzie River between Clearwater River & the Arctic Ocean, & gives a very clear & succinct account of the geology of the zone derived from the works of Richardson, Sibister & others. The fossils described were collected by Major R. Kennicott who visited this northern country under the auspices of the Smithsonian Institution, & by Messrs R.W. McClure & B.R. Ross of the Hudson's Bay Company. Prof. Meek's paper gives by far the most definite information as to the stratigraphical position of the limestone series of the region. From a locality near Fort Resolution, on Great Slave Lake near the mouth of Slave River he notes *Favosites polymorpha*, *Atrypa reticularis*, a small smooth *Spirifer* (*Martinia*), *Cyrtina Hamiltonensis*, a *Chonetes* a *Productus* a *Lingula* & a *Proetus*. These fossils were obtained from a highly bituminous limestone, & are regarded as Devonian & probably of nearly the horizon of the Hamilton group. They resemble those of the Clearwater River, which flows into the Athabasca south of the limit of the accompanying maps (p. 68) These fossils may be regarded as fixing the age of the flat-lying limestone formation of this vicinity, though Meek states that he is not prepared to deny the existence of Silurian beds also, as represented



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He also refers to the limestone as being bituminous, & speaks of fossil shells the cavities of which are filled with bitumen.

At the extremity of the long northern arm of Great Slave Lake Richardson notes "Clay slate" as occurring in one place at the east side (Franklin's First Journey p. 520) While Petitot ~~shows~~ on his map indicates limestone as forming the east side of the entrance to this arm. Richardson, however, elsewhere states very definitely that the ~~west~~ eastern side of this arm is occupied by "primitive rocks" & shows the same feature on his map (See Journal of a Boat Voyage Vol I p. 147) He there writes. "In 1820 when we crossed Great Slave Lake near the 73<sup>rd</sup> Meridian, we traced the western boundary of these ["primitive"] rocks, from near the mouth of Slave River, northwards by the Reindeer Islands to the north side of the Lake, & continued to travel within their limits up to Point Lake in the 66<sup>th</sup> parallel."

In writing of the same subject (Vol II p. 200) he states that the western border of the "primitive rocks" runs across the outlet of Athabasca Lake to the deep northern arm of Great Slave Lake, & onwards by Martin Lake, across the two ~~two~~ eastern arms of Great Bear Lake, to the Copper Mountains. The indications thus given are confirmed by the notes on Petitot's map in so far as the region between Great Slave & Great Bear lakes is concerned.



(Arctic Land Expedition p. 546)  
Dr Bell ~~also~~ notes red conglomerate & fine grained  
grey & green quartzites as collected by Capt.  
H. P. Dawson R.A., on this arm of the lake, from  
(Trans. Royal Soc. Canada vol II) from which it may  
be inferred that formations besides those above mentioned  
as characteristic also occur in this vicinity.  
Capt Dawson also obtained specimens of specular  
iron in this vicinity. (Report of the Second Hudson's  
Bay Expedition p. 66.)

~~... says~~ the Indians  
obtain flint - grey mark of which they make their pipes.  
The same flint is said by Petitot to be composed of black  
serpentine, which he also notes is used for the manufacture of pipes.  
(Bul. Soc. Geol. Paris vol II p. 143) Specimens of <sup>slaty</sup> ~~woymerian~~  
limestone were obtained by Back from the south side of the  
big island. Similar limestone is associated with the series of  
the Copper River & this is very reason to believe that the  
"trap formation" here should be referred to the same great  
series.

Pebbles of Jasper conglomerate were collected near the east end  
of the lake which evidently ~~exactly~~ resemble the Jasper conglomerates  
of Lake Huron, of Huronian age. These ~~two~~ rocks were,  
however, not seen in place (Arctic Land Expedition p. 547)

himself, though ~~we~~ states that he is not prepared to deny the  
existence of Silurian beds also, as represented



(Arctic Land Expedition, p. 544 & seq)

Back's description & specimens show that the north side of Great Slave Lake from the entrance to the north arm westward, consist of Laurentian rocks. The hills are said to be rocky, low, grey & rounded, & gneiss, porphyry & granite are the prevalent rocks. The large islands & the promontory occupying the centre of the <sup>earlier</sup> ~~western~~ part of the lake are on the contrary "of the trap formation" & exhibit long lines of high mural precipices, sometimes distinctly columnar. ~~The~~ Back compares them to those seen near the Coppermine & believes them to <sup>belong to</sup> ~~be~~ of the same formation. Near the western end of the long island, Peck-the-nu-eh, he ~~describes~~ says the Indians obtain greenish-grey marl of which they make their pipes.

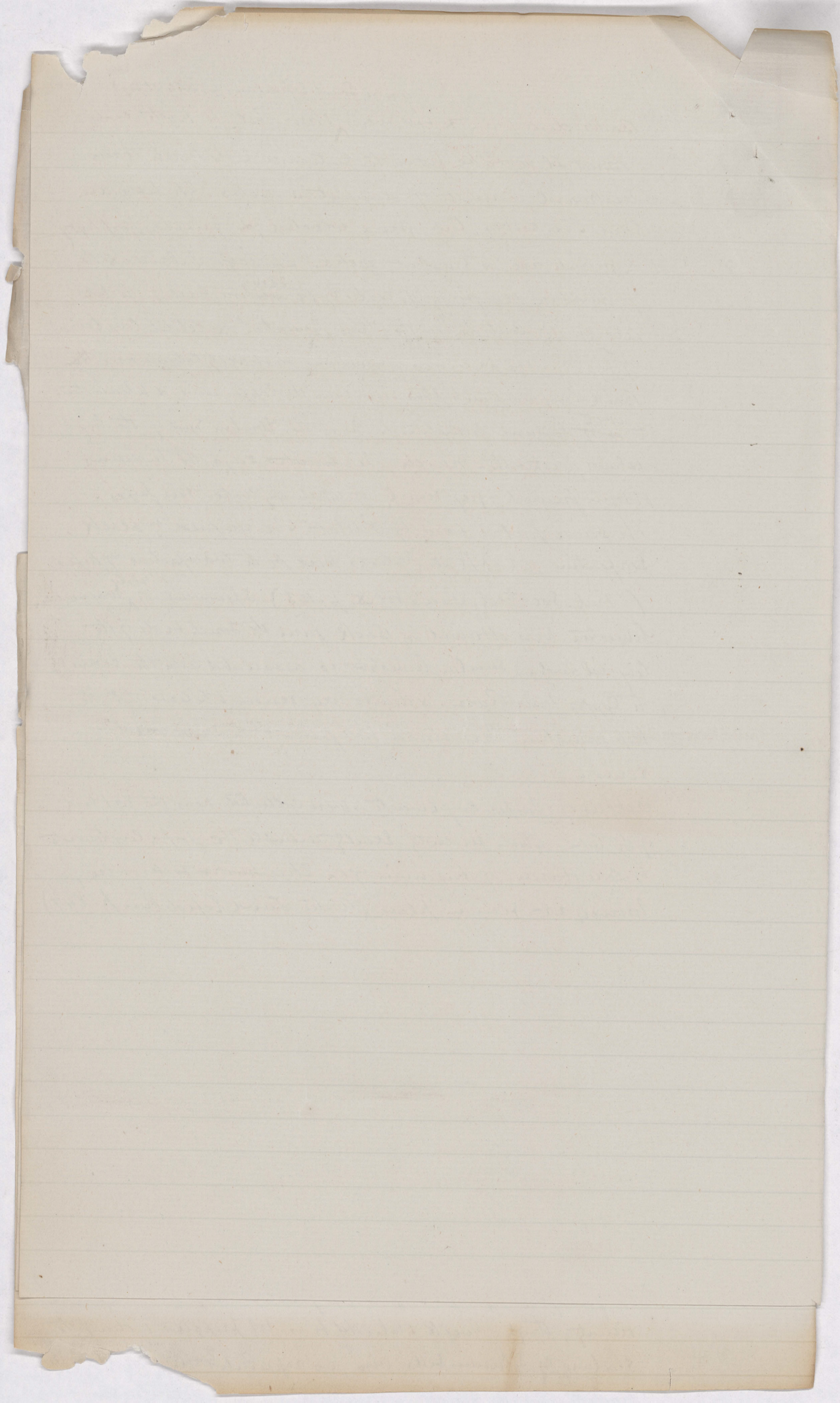
The same marl is said by Petitot to be composed of black serpentine, which he also notes is used for the manufacture of pipes.

(Bul. Soc. Geol. Paris vol II p. 143) Specimens of <sup>slaty</sup> ~~trough~~ <sup>Weymannian</sup> limestone were obtained by Back from the south side of the long island. Similar limestone is associated with the series of the Copper Mine River & there is every reason to believe that the "trap formation" here should be referred to the same great series.

Pebbles of Jasper conglomerate were collected near the east end of the lake which evidently exactly resemble the Jasper conglomerate of Lake Huron, of Huronian age. These ~~however~~ rocks were, however, not seen in place (Arctic Land Expedition p. 547)

himself, though Peck states that he is not prepared to deny the existence of Silurian beds also, as represented







Notes on Greenland from De Rance's articles,

De Rance  
Archalan.

E. Coast

??

"South Greenland. — Prof G.C. Laube, the geologist attached to the second German North Polar Expedition, in his geological map of South Greenland, represents the East Coast, as far as  $61^{\circ}$  N., as chiefly composed of granite & gneiss, which also extends from Cape Farewell to Julianstraab, near which, at the head of Tunnudleortik, red sandstone & amphibolite occur, between which & the sea there is a large arm of hornblende granite with a belt of Zircon granite intervening. Westward is a syenite granite, as far as Nunarsoit.

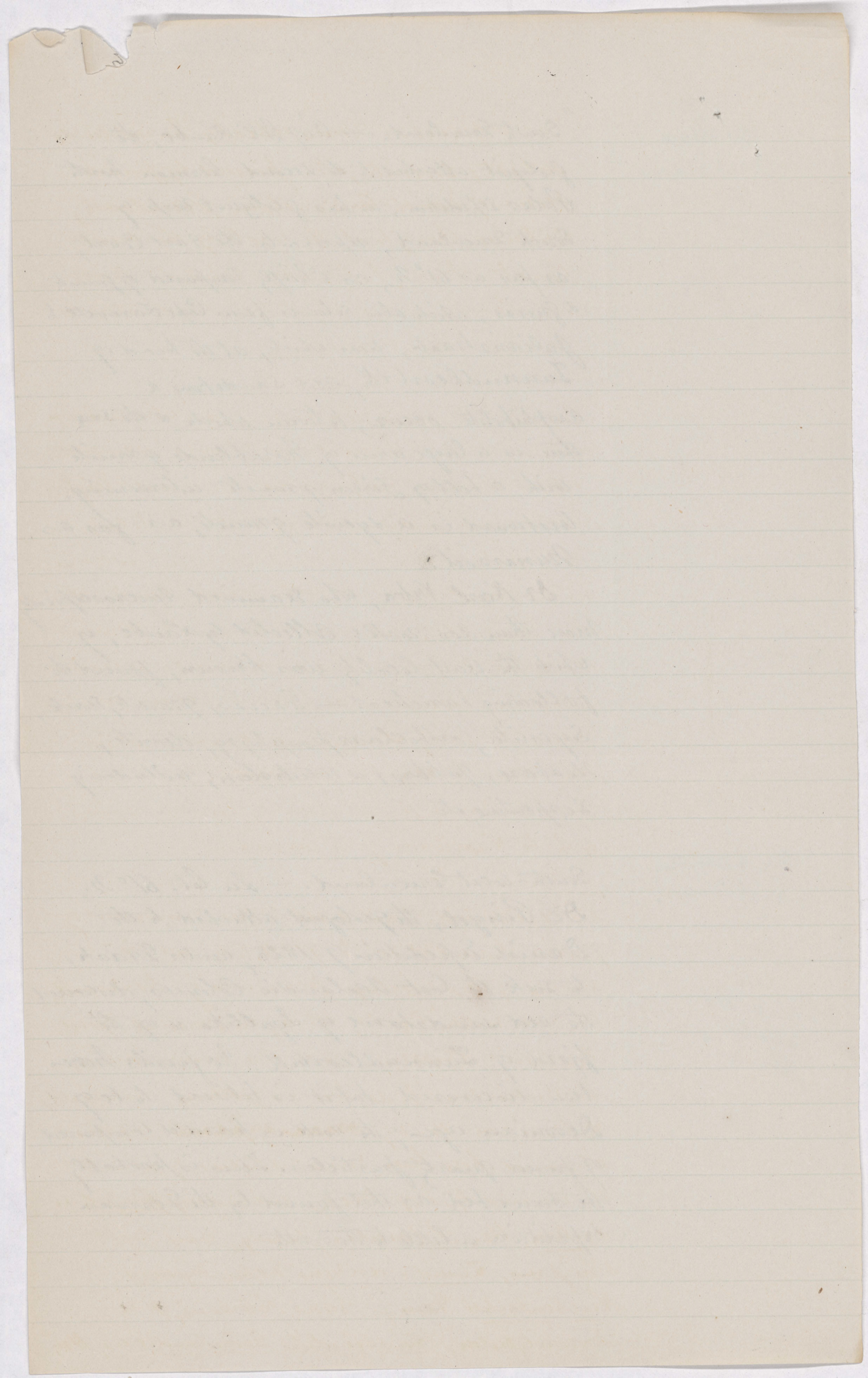
Dr Karl Vrba, who examined microscopically more than 200 rocks collected by Laube, of which the exact locality was known, found the following varieties: — Gneiss, granite, syenite, syenite, orthoclase porphyry, diorite, diabase, gabbro, & weichstein, including serpentine, etc.

De Rance  
base of Selman?

South-west Greenland. — In Lat.  $61^{\circ}$  N., Dr Pingel, the geologist attached to the Danish Expedition of 1828, under Graah, to seek the lost Icelandic Colonies, discovered the red sandstone of Igalliko & of the fjord of Tunnudleortik. No fossils have been discovered, but it is believed to be of Devonian age; the rock is hard & composed of fused quartz particles. This is probably the same bed as that found by the German Expedition a little to the south

See note on Red  
Sandstone  
Selman?







De Rance  
Archaean

"The gneiss, mica schist, hornblende schist, syenite, etc. pierced by granite veins of South & Southern Greenland, continue throughout the whole of the west coast. From it the Greenlanders derive the steatite from which they make their lamps & other vessels.

abstract from  
De Rance

Cryolite, a fluoride of sodium & aluminium, of considerable value in certain chemical manufactures & which has been largely exported, occurs at Eriktok twelve miles from Arksut (lat.  $61^{\circ}13'$  long.  $48^{\circ}9'$ ) It is described as occurring in veins in gneiss & associated with galena, tinstone & other minerals. With regard to the mode of occurrence & character of the Cryolite there is a somewhat extensive literature. [The rocks in which it occurs are almost certainly Laurentian & there is thus some reason to hope that similar valuable minerals may be found elsewhere in association with the Laurentian of the far north.]

De Rance  
Arch  
Cretaceous

"The Greenland coast & islets are composed of gneiss from  $68^{\circ}30'$  to  $71^{\circ}$  N. lat., with the exception of the projecting peninsula of Narsarok, the north-eastern coast of which, in Menak Fjord, consists of Cretaceous rocks, in which, however, no Calcareous beds have as yet been discovered, & from which the only ~~specimens of plants~~ fossils obtained have been several species of plants, determined by Prof. Heer, including *Pecopteris arctica*, H. & P., *P. borealis*, Brong., and eight other ferns, *Lamites arcticus* Göpp., *Sequoia Reichenbachii* Gein., *Pinus Peterseni*, & a *Wormotyledon*, *Fasciculites Groenlandicus*, H. &



*[Faint, illegible handwriting on lined paper]*



Cretaceous  
abstract from De Rance

The Cretaceous rocks are divided by Nordenskjöld into two series Kome strata & the Utau beds. The former rest upon the gneissic strata of the North Coast of Disco. Both series are known to yield Coal. The Kome strata are referred to the age of the Argonian strata of Wernsdorff, the Utau beds that of the Gault of Europe.

De Rance  
Miocene.

"The Western [~~Western~~ <sup>North</sup>] Coast of Noursoak consists of trap, as does also that of the Island of Disco or Kerkertassuak, as far as Siervi or Godharna, where there is a patch of Syenite. The shores of the Waigat Strait, both on the Noursoak & Disco Island side, consist of Miocene beds, which also extend in Disco along the East Coast to Goelham, & are more or less associated with the trap (basalt), which consists entirely, according to Nordenskjöld, of "Consolidated beds of ashes & volcanic sand," which by pressure has assumed a Crystalline form.

"On the East Coast of Disco, sand & sandstone beds form mountains 1500 to 2000 feet, capped by basalt; in Waigat straits these sink, & the basalt reaches the shore, but at a height of 1000 feet, sand, clay, & coal occur.

Uvelonites.  
Abstract from  
De Rance

~~Prof. Nordenskjöld~~

The masses of metallic ores with regard to the telluric or Uvelonic origin of which much discussion has arisen are derived from these Miocene rocks.

See original

Prof Nordenskjöld found them scattered over an extensive area about the South-western corner of Disco Island.



about here  
De Rance p. 468  
The locality mentioned near  
Disco but? exact place.

A bed of graphite eight to ten inches  
thick occurs with sandstone basalt etc  
overlying gneiss, & apparently of Tertiary age,  
occurs at Karsook River [This is probably  
a case of local alteration of a Carbonaceous  
deposit.]

De Rance

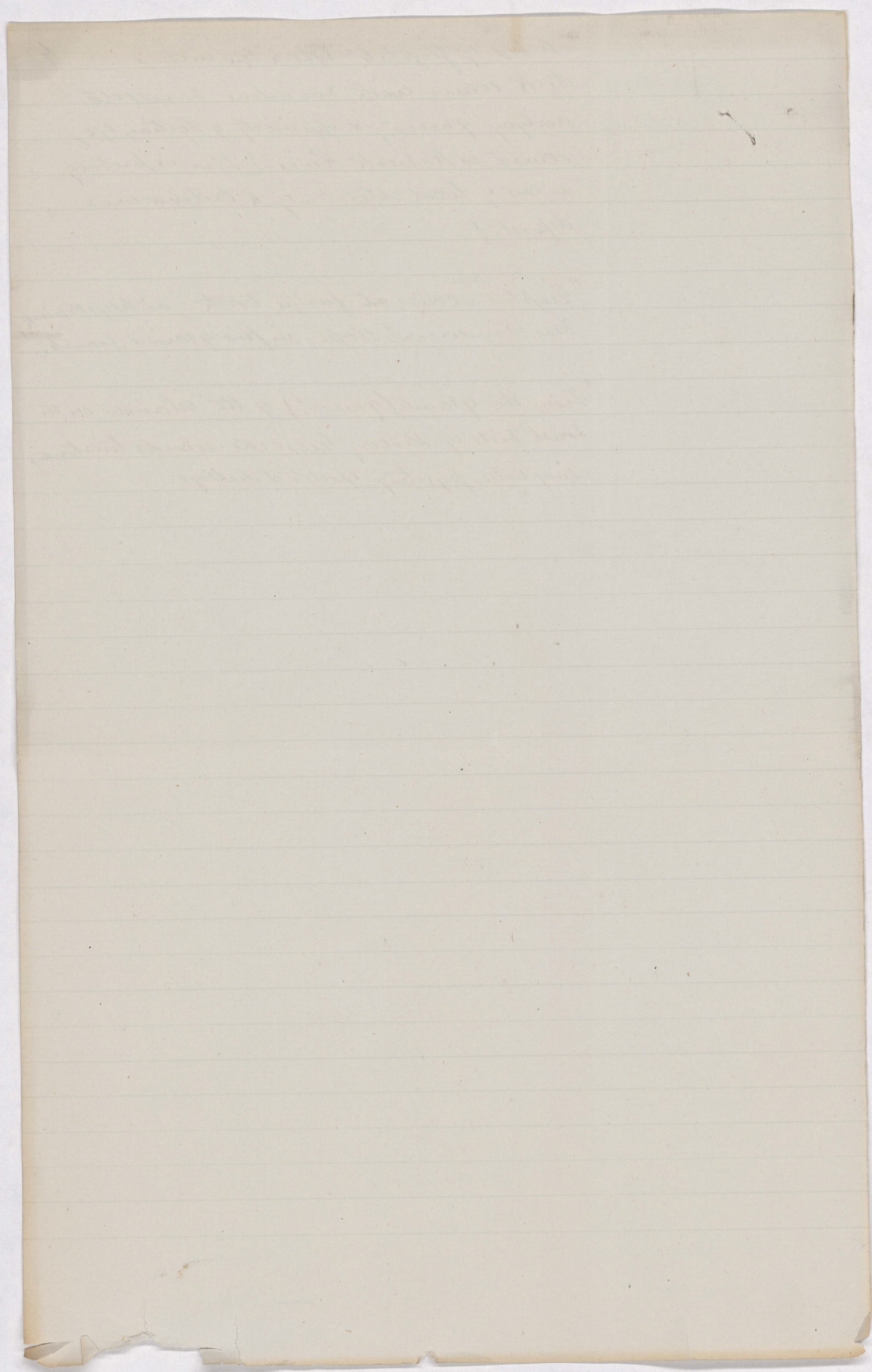
<sup>also</sup>  
"Graphite occurs ~~at~~ further north, at Upperminik  
near Sanderson's Hope, in fine grained granite."

De Rance

"From the granite (gneiss?) of the islands on the  
south side of Disco, Geisecke records tinstone,  
magnetic pyrites, Epidote & diopside."

Notes on E. Greenland  
p. 469. omitted.







Jakob

"In Pinnis Royal Island [Pinnis of Lewis Strait]  
besides the characteristic Silurian limestones, there are  
black basalts & red porphyries, as well as red rocks, less  
altered by heat, but showing a passage into porphyries". (p. 403.)



Part M.S. and References,  
in paper on Arctic Geology  
(All the remaining parts of  
the M.S. are marked  
"all incorporated"; and have  
therefore been destroyed.)

W.B.D.

