
Appendix A — Palaeontological

1.—List of places where Cambrian fossils have been collected.

Durness District (Sheet 114)

1. Old quarry, close to road, Bailamhuic, Durness.
2. Baile na Cille (Balnakiel) Bay, below old church, 1 mile W.N.W. of Durness.
3. On cliff, 500 yards west of Balnakiel old church, 1■ mile W.N.W. of Durness.
4. West side of Loch Croisaphuill, opposite manse, $\frac{3}{4}$ mile west of Durness.
5. On hill-slope, 400 yards S.S.W. of manse, $\frac{3}{4}$ mile S.W. of Durness.
6. East side of Loch Borrallaidh, opposite island, $1\frac{1}{4}$ mile S.W. of Durness.
7. Pier at Keoldale, 2 miles S.W. of Durness.
8. Quarry at Post Office, Durness.
9. Cnoc Ach na h' Anaile, near road, 2 miles S.S.W. of Durness ("*Serpulite Grit*").
- 9a Cnoc Ach na h' Anaile, near road, 2 miles S.S.W. of Durness (*Salterella* Limestone).
- 9b Shore at Keoldale road-end.
10. Quarter mile west of Loch Meadaidh, 2 miles south of Durness.
11. Bealach Mor Burn, where road crosses, $3\frac{3}{4}$ miles south by east of Durness.
12. Hill-slope, near Pictish Tower, south side of burn, $\frac{1}{4}$ mile from road, 4 miles south by east of Durness.
13. Allt Ach a Chorrain, $\frac{3}{4}$ mile S.S.W. of Loch Meadaidh, 3 miles south of Durness.
14. Allt Ach a Chorrain, left branch of burn, $\frac{3}{4}$ mile S.S.W. of Loch Meadaidh, 3 miles south of Durness.
15. River Dionard, Drochaid Mhòr, $5\frac{1}{2}$ miles south by west of Durness.
16. Knoll, west of road, $\frac{1}{4}$ mile S.S.W. of No. 15 locality.
17. At shepherd's house, Rudha Ghrudaidh, head of west branch of Kyle of Durness, 4 miles S.S.W. of Durness.
18. Streamlet near Ghrudaidh shepherd's house, head of west branch of Kyle of Durness, 4 miles S.S.W. of Durness.
19. Shore cliffs, Port Odhar, 4 miles N.W. of Durness.
20. Eilean nan Cas leac, $4\frac{1}{2}$ miles N.W. of Durness.
21. An Garbh-eilean, 6 miles N.W. of Durness.
22. Dubh-sgeir, near Eilean Hoan, 3 miles east of Durness.

Eireboll (Sh. 114)

23. An t-Sron, Camas an Duin, 1 mile south of Heilem Inn, Loch Eireboll.

Inchnadamph (Sh. 101, 107)

24. Roadside, north of Ardvreck Castle, 2 miles N.N.W. of Inchnadamph.

25. Knockan Craig, near Elphin, 11 miles S.S.E. of Inchnadamph. Ullapool, (Sh. 92, 101.)

26. Ullapool River, 1 mile north of Ullapool.

27. At bridge, ½ mile east of Ullapool.

28. North shore of Loch Broom, 1 mile S.S.E. of Ullapool,

29. Allt Rìgh Iain, at roadside, 9½ miles south of Ullapool.

30. Burn, 400 yards N.E. of Loch an Nid, 12¼ miles south of Ullapool.

Kinlochewe (Sheets 82, 92)

31. Abhuinn Bruachaig, 1¾ mile E.N.E. of Kinlochewe.

32. Abhuinn Bruachaig, a little further down stream.

33. Burn, Meall a Ghubhais, 3½ miles W.N.W. of Kinlochewe.

Achnashellach and Kishorn (Sh. 81, 82)

34. Allt nan Dearcaig, 1½ mile N. of Achnashellach Station.

35. Court Hill, Kishorn.

Skye (Sheet 71)

36. Top of limestone knoll, Suardal, 1½ mile south of Broadford Hotel.

37. West side of Bealach a Ghlinne, 1¾ mile south of Broadford Hotel.

38. South slope of Ben Suardal, 2½ miles S.S.W. of Broadford Hotel.

39. Ben Suardal, side of Bealach a Ghlinne, 1½ mile south of Broadford Hotel.

40. West side of Ben Suardal, 2 miles S.S.W. of Broadford Hotel.

41. Slope, east of turnpike road, Suardal.

42. At Loch Lonachan, 3 miles south of Broadford Hotel.

43. Slopes, north and N.W. of Loch Lonachan, 2¾ miles south of Broadford Hotel.

44. Slope, west of Allt a Mhuilinn, 1¾ mile south of Broadford Hotel.

45. Shore of Loch Slapin, 5 miles S.W. of Broadford Hotel.

46. Shore of Loch Eishort, ¼ mile north of Ord, 6 miles south of Broadford Hotel.

47. Burn at head of wood, ¾ mile east of Tokavaig, 7½ miles south of Broadford Hotel.

ii. List of fossils from the *Olenellus*-Zone (Lower Cambrian)

	Lower Cambrian (<i>Olenellus</i> -Zone)	Lower Cambrian (<i>Olenellus</i> -Zone)	Lower Cambrian (<i>Olenellus</i> -Zone)	Lower Cambrian (<i>Olenellus</i> -Zone)	Locality number
	Quartzite	Fucoid Shales	Serpulite Grit	Ghrudaidh Limestone	
ECHINODERMATA					
<i>Eocystites</i>, Billings					
<i>Eocystites</i> , sp.		x			29, 32, 34
ANNELIDA					
Boring annelides					
<i>Planolites</i> (worm casts)				x	33
<i>Scolithus</i>,					
Haldeman					
<i>Scolithus, linearis</i> ,					x
Haldeman					
<i>Scolithus</i> , sp. II.					x
(common pipes)					
<i>Scolithus</i> , sp. III.					
("trumpet" pipes) =					x
<i>Arenicolites</i> , Salter					
Worm Castings					
(so-called Fucoids)		x			
ANNELIDA (?)					
<i>Coleoloides</i>,					
Walcott					
<i>Coleoloides</i> , sp.		x			29
<i>Hyolithes</i>,					
Eichwald					
<i>Hyolithes</i> ,					
<i>terranovicus</i> ,		x			29
Walcott					
<i>Hyolithes</i> , sp.		x			23, 24, 25, 26, 28, 29, 30, 32, 33
<i>Salterella</i>, Billings					
<i>Salterella</i> ,					9, 9b, 17, 18, 23,
(<i>Serpulites</i>),			x	x	24, 26, 27, 28, 29,
<i>Maccullochi</i> (Salter)					30, 32, 34
<i>Salterella pulchella</i> ,					9a, 16, 23, 24, 26,
Billings		x		x	27, 28, 29, 31, 34, 35
<i>Salterella rugosa</i> ,					16, 23, 24, 26, 27,
Billings				x	28, 29, 31, 34
<i>Salterella</i> sp.		x			29, 47
BRACHIOPODA					
<i>Acrothele</i>,					
Linnarsson					
<i>Acrothele subsidua</i> ,					
White		x			29, 33

<i>Archaeoscyphia minganensis</i> , Billings	x	x	x	12, 19, 21, 36, 37, 38, 39, 40, 43.	Calciferous. Mingan Islands, Canada.
<i>Archaeoscyphia</i> sp.	x	x	x	19, 36, 37, 39, 41.	
Calathium , Billings					
<i>Calathium</i> (<i>Receptaculites</i>) <i>Anstedti</i> , Billings	x		x		
<i>Calathium</i> (<i>Receptaculites</i>) <i>calciferum</i> , Billings			x	36, 40.	Calciferous. Mingan Islands, Canada.
<i>Calathium</i> (<i>Receptaculites</i>) <i>elegantulum</i> , Billings			x	37, 39.	Calciferous. Mingan Islands, Canada.
<i>Calathium</i> (<i>Receptaculites</i>) <i>pannosum</i> , Billings			x	42, 43.	No. 2 Quebec Group. Point Lam, Canada.
<i>Calathium</i> (<i>Receptaculites</i>) sp.	x	x	x	12, 19, 36, 37, 38, 40, 42, 43.	NOTE.-In Newfoundland the genus ranges from G.-K. of Billings' Table.
Rhabdaria , Billings					Calciferous.
<i>Rhabdaria</i> , sp.	x	x	x	36. 37, 39, 40, 43, 44.	Mingan Islands, Canada.
Trichospongia , Billings					
<i>Trichospongia</i> sp.	x	x	x	36, 38, 40, 43	Calciferous. Mingan Islands, Canada.
Sponge , indet.	x	x	x	12, 19, 21, 36, 37, 42, 43.	
ACTINOZOA <i>Coral</i> (?)	x			12.	
TRILOBITA Asaphus , Brongniart					

<i>Asaphus</i> (<i>Isotelus</i>) <i>canalis</i> (?), Conrad	x		10.	Zones F.-M. of Billings. Port au Choix, Point Rich, Table Head, Bonne Bay, Newfoundland. Zones F., G., H. It N. of Billings. Port au Choix, Cape Norman, Newfoundland. The genus <i>Bathyrurus</i> ranges from B. to P. of Billings.
<i>Batliyurus</i>, Billings				
<i>Batliyurus</i> <i>Nero</i> , Billings		x	21.	
<i>Batliyurus</i> sp.	x	x	12, 21.	
?				Table Head, Newfoundland.
<i>Conocoryphe</i>. <i>Corda</i> <i>Conocoryphe</i> (<i>Conocephalites</i>) <i>chippewaensis</i> , Owen		x	x	19, 21.
<i>Conocoryphe</i> sp.		x		19.
<i>Solenopleura</i>, <i>Angelin</i>				The genus <i>Conocoryphe</i> is confined to the Cambrian Formation'
<i>Solenopleura</i> <i>tumida</i> (?), Walcott				<i>Olenellus</i> zone. Washington County, New York, U.S., America.
Olenoid trilobite (? <i>Ellipsocephalus</i> , Schlotheim)			x	21.
				Middle and Upper Cambrian.

Trilobite, fragment of (? <i>Lonchocephalus</i> = <i>Conocephalites</i> = <i>Couocoryphe</i>) BRACHIOPODA Camerella , Billings		x		5.	
<i>Camerella antiquata</i> , Billings	x	x		5.	Olenellus-zone. Swanton, Vermont, U.S., America.
Orthis , Dalman <i>Orthis</i> sp. Orthisina , D'Orbigny			x	21.	
<i>Orthisina festinata</i> , Billings		x	x	21, 43.	<i>Olenellus</i> -zone. Swanton, Vermont, U.S., America.
<i>Orthisina grandoeva</i> (?), Billings				x	43. Calciferous. Canada.
<i>Orthisina (Orthis) striatula</i> , <i>Sad.</i>	x			x	4, 12, 43.
<i>Orthisina</i> LAMELLIBRANCHIATA Euchasma , Billings					
<i>Euchasma Blumenbachi</i> , Billings	x	x		x	12, 19, 21 36, 38, 43. Zones G. & H. of Billings. Port an Choix, Table Head, Cape Norman, Newfoundland. Clear Water Point, Mingan Islands, Canada.
<i>Euchasma Blumenbachi</i> var. l.			x	x	21.

<i>Euchasma Blumenbachi</i> var. II.	x	x	x	19, 21.	
<i>Euchasma Blumenbachi</i> var. III.		x		21.	
<i>Euchasma Blumenbachi</i> var. IV. (<i>Eopteria</i>).		x		21.	Quebec Group. Port an Choix, Newfoundland.
<i>Euchasma Blumenbachi</i> sp.	x	x		42.	
GASTEROPODA					
<i>Bellerophon</i>, Monfort					
<i>Bellerophon</i> (<i>Cyrtolites</i>) <i>palinurus</i> (?), Billings		x		21.	Quebec Group. Stanbridge, Eastern Canada.
<i>Chelodes</i>(Davidson and King)					
<i>Chelodes</i> (<i>Chiton</i>) sp.			x	36.	
<i>Euomphalus</i>, Sowerby					
<i>Euomphalus</i> (<i>Oriostoma</i>) sp. III.	x			3, 4, 12.	
<i>Euomphalus</i> (<i>Oriostoma</i>) sp. IV	x	x		2, 21.	'
<i>Holopea</i>, Hall					
<i>Holopea leiosoma</i> , Billings		x		21.	No. 3 Limestone, Quebec Group. Point 1.4vis, Canada.
<i>Holopea Ophelia</i> , Billings	x		x	38.	Quebec Group. Point Rich, Newfoundland.
<i>Maclurea</i>, Lesueur					

<i>Maclurea acuminata</i> , Billings			x	M.	Zones K. -M. of Billings. Table Head and Point Rich, Newfoundland. Zones J., K. L & M. of
<i>Maelurea crenulata</i> , Billings	x	x	x	5, 19, 20, 31, 36, 37, 39, 45, 53.	Billings. Table Head and Point Rich, Newfoundland. Zones J., K., L. & M. of
<i>Maclurea Emmonsii</i> , Billings			x	36, 41, 43.	Table Head and Point Rich, Newfoundland. Zones F., G.,
<i>Maclurea oceana</i> , Billings	x	x	x	2, 5, 12, 14, 19, 20, 21, 36, 37, 38, 39, 40, 41, 42, 43.	H. of Billings. Pistolet Bay, Port an Chola, Cape Norman, Newfoundland.
<i>Maclurea Peachi</i> , Salter	x	x	x	1, 2, 13, 19, 21, 36, 37, 38, 39, 40, 41, 43, 45.	Cf. operculum of <i>M. matutina</i> . Geology of
<i>Maclurea</i> sp. I. (<i>operculum</i>)	x	x	x	1, 2, 21, 36, 37, 39, 43, 44.	Canada. p. 115, fig. 25. Calciferous Group. Lake St. Louis.
<i>Maclurea</i> sp. II.	x	x	x	12, 19, 21, 36, 37, 38, 39, 40, 41, 43.	Cf. operculum, Palmozoic Fossils of Canada, p. 243, fig. 229.

<i>Maclurea</i> sp. III	x		x	36, 37, 38, 39, 40, 41, 43. .	Cf. operculum, Palsozoic Fossils of Canada, p. 243, fig. 288. Cf. operculum, Palmozoic Fossils of Canada, p. 243, fig. 230.
<i>Maclurea</i> sp. IV.	x	x	x	19, 20, 36, 40, 41, 43.	Zones F., G., H. of Billings' Table. Cape Norman, Newfoundland.
<i>Maclurea</i> sp. V. Murchisonia , D'Archiac et De Verneuil	x	x	x	5, 36, 37, 43, 44.	
<i>Murchisonia</i> (<i>Ectornaria</i>) <i>Adelina</i> , Billings	x	x	x	12, 20, 43. .	Zone G. of Billings. Calciferous. Cape Norman, Newfoundland.
<i>Murchisonia</i> (<i>Hormotoma</i>) <i>angulocincta</i> , Salter					
<i>Murchisonia</i> (<i>Hormotoma</i>) <i>Anna</i> , Billings	x	x	x	5, 19, 20, 21, 38, 45.	Calciferous. Canada.
<i>Murchisonia</i> (<i>Hormotoma</i>) <i>antiqua</i> , Donald.		x		21.	
<i>Murchisonia</i> <i>Artemesia</i> , Billings	x	x	x	12, 20, 37, 43.	Calciferous. County of Leeds and Grenville, Canada. Zones H.-K. Pistolet Bay, Point Rich, Table Head, Burnt Cape, Newfoundland.
<i>Murchisonia</i> , <i>Augustine</i> (?), Billings	x		x	19, 36, 38	

<i>Murchisonia bellicincta</i> , Hall	x			x	2, 19.	Trenton and Hudson River Group. New York, U.S. America.
<i>Murchisonia (Lophospira) borealis</i> , Donald.	x	x		x	2 12, 21, 36, 39.	Trenton and Hudson River Group. Allumette Island, Canada.
<i>Murchisoni (Hormotoma) gracilis</i> , Hall.	x	x	x	x	2, 4, 5, 7, 8, 12, 19, 20, 22, 37.	Black River Limestone, Loraine and Hudson River Group. Pauquette Rapids, River Ottawa, Canada.
<i>Murchisoni (Hormotoma) gracillima</i> , Salter.	x	x	x	x	2b, 4, 5, 7, 8, 12, 19, 20, 22, 37.	
<i>Murchisoni linearis</i> , Billings	x	x			5, 12, 20, 21.	Calciferos. Birch Island, Mingan Islands, Canada. Black River Limestone.
<i>Murchisoni (Ectomaria) pagoda</i> Salter	x			x	2, 36, 38, 41, 45.	Pauquette Rapids, River Ottawa, Canada.
<i>Murchisoni (Ectomaria) pagoda</i> var. <i>orientalis</i> , Donald.		x		x	21, 36, 37, 39, 41, 43.	
<i>Murchisoni (Ectomaria) pagoda</i> var. <i>Peachi</i> , Donald.	x			x	5, 12, 20, 37.	
<i>Murchisoni</i> sp.				x	10, 19, 39.	

Ophileta,
Vanuxem

The genus *Ophileta* ranges from E.-P. of Billings. Table Bay, Newfoundland. Calciferous Sand Rock. Beauharnais, near Montreal. (*O. compacta* odours abundantly in the Chau and Bird's-eye Limestone, N. America, which takes its name from the abundance of this fossil.)

Ophileta compacta,
Salter

x

x

x

2, 13, 38.

Ophileta complanata,
Vanx.

x

43,

Calciferous division.

Ophileta Nerine,
Billings

x

37, 43.

Zone F. of Billings. Bay of St. John's, Newfoundland.

Ophileta sp.
I. (U.S.)

x

10.

Ophileta sp.
II.

x

21.

Ophileta sp.
III.

x

2, 3.

Ophileta sp.
IV. (n.s.)

x

Oriostoma,
Lindström

x

22, 43.

Oriostoma,
(*Pleurotomaria*)
Calphurnia,
Billings

x

x

x

12, 20, 21,
43.

Quebec Group. Cape Norman, Newfoundland.

Oriostoma,
(*Pleurotomaria*)
Calphurnia,
var. I.

x

x

x

12, 21.

<i>Oriostoma</i> , (<i>Pleurotomaria</i>) <i>Calphurnia</i> , var. II.	x	x	x	3, 5, 14, 20, 21, 22.	
<i>Oriostoma</i> , sp.	x	x	x	2, 5, 19, 36, 42, 43.	
<i>Oriostoma</i> sp. (near <i>Pleurotomaria</i> : ribbed) <i>Pleurotomaria</i> , DeFrance			x	37.	
<i>Pleurotomaria, Arabella</i> (?), Billings	x	i		19.	Calciferous. County of Leeds and Grenville, Canada.
<i>Pleurotomaria, beekmanensis</i> (l), Whiff.	x	x	x	12, 21, 45.	
<i>Pleurotomaria, calcifera</i> , Billings	x	x	x	5, 12, 19, 21 36, 37, 40, 42, 43.	Calciferous.
<i>Pleurotomaria, canadensis</i> , Billings	x			19.	Calciferous. County of Leeds and Grenville, Mingan Islands, Canada. Black River Limestone. Pauquette Rapids, Ottawa River, Canada. Zone G.-1L of Billings.
<i>Pleurotomaria, Dryope</i> , Billings				2, 12.	Cape Norman, Table Head Newfoundland. Calciferous. St. Genevieve island, Mingan Islands, Canada.
<i>Pleurotomaria, Etna</i> , Billings		x		10, 21.	Calciferous. St. Genevieve island, Mingan Islands, Canada.
<i>Pleurotomaria, gregaria</i> , Billings		x		20.	Calciferous. County of Leeds and Grenville,
<i>Pleurotomaria, lanrentina</i> , Billings		x	x	21, 36, 37, 38, 40, 42, 43.	Calciferous. County of Leeds and Grenville,

<i>Pleurotomaria</i> , sp. (near to do.) .					Mingan Islands, Canada. Calciferous
<i>Pleurotomaria</i> , <i>Ramsayi</i> , Billings.		x		x	10, 11, 21, 36. Ha. Mingan Islands, Canada. Black River Limestone. (l) Chazy. Pauquette
<i>Pleurotomaria</i> ,(<i>Helicotoma</i>) <i>spinosa</i> (Salter)	x		x		12, 21. Rapids, Ottawa River, Canada.
<i>Pleurotomaria</i> , <i>Thule</i> , Salter	x				3. Very near to <i>Murchisonia</i> <i>vontriosa</i> . Calciferous
<i>Pleurotomaria</i> ,(<i>Holopea</i>) <i>turgida</i> , Hall			x	x	21, 36, 38, 40, 43. and Trenton Horizons. North America.
<i>Pleurotomaria</i> , sp. CEPHALOPODA. Actinoceras , Bronnigart	x			x	12, 19, 20, 37.
<i>Actinoceras</i> , sp.	x				2.
<i>Cyrtoceras</i> , Goldfuss					
<i>Cyrtoceras</i> , sp. I. x		x			2, 10.
<i>Cyrtoceras</i> , sp. II. .		x			2, 10.
<i>Cyrtoceras</i> , sp. III.		x			2.
<i>Cyrtoceras</i> , IV		x			3.
<i>Cyrtoceras</i> , sp.					11.
Endoceras , Hall					
<i>Endoceras</i> , sp. I	x		x	x	21.
<i>Endoceras</i> , sp II	x			x	21.

<i>Endoceras</i> , sp.	x	x	x	12, 21, 36, 37, 40, 43.	
Orthoceras , <i>Breynius</i>					
<i>Orthoceras</i> <i>arcuoliratum</i> , Hall (siphuncle of <i>Endoceras</i>)	x				Black River Group and Trenton Limestone Horizons, North America. Probably a siphuncle of Endoceras.
<i>Orthoceras</i> <i>baculoides</i> , Blake	x		x	4, 36.	
<i>Orthoceras</i> , <i>durinum</i> , Blake	x		x	12, 19, 20, 21, 36, 7 , 43, 44.	31 57 Calciferous Sand Rock. See Billings' O.
<i>Orthoceras</i> , (<i>Actinoceras</i>) <i>mendax</i> , Salter	x	x	x	6, 12, 19, 21, 22, 36, 37, 39, 40, 42, 43.	lamarcki,,Mingan Islands, Canada. Also O. priamus, Point Rich, Pistolet Bay. Newfoundland.
? <i>Orthoceras</i> <i>pertinens</i> , Blake.	x	x	x	6, 12, 19, 20, 21, 36, 37, 38, 39, 41, 43.	
? <i>Orthoceras</i> <i>undulostriatum</i> , Hall (= <i>O.</i> <i>durinum</i>), Blake (siphuncle of an <i>Endoceras</i>)	x	x		12, 19.	The form identified by Salter as O. <i>undulostriatum</i> , <i>Hall</i> , is evidently the <i>O. durinum</i> of Blake, which is probably the siphuncle of an Endoceras.
? <i>Orthoceras</i> <i>vertebrale</i> , Hall (= <i>O.</i> <i>mendax</i> , Salt.= <i>O.</i> <i>olorus</i> , Hall)	x	x		2, 12, 21.	

? <i>Orthoceras</i> <i>n. sp.</i> (tapering rapidly)					10.	
? <i>Orthoceras</i> sp.	x	x		x	2, 12, 19, 20, 21, 36, 41, 45.	
<i>Piloceras,</i> <i>Salter</i>						The American species of <i>Piloceras</i> range from zones F. -I. of Billings' Table. In Newfoundland in the Califerous of Lachute
<i>Piloceras,</i> <i>invaginatum,</i> <i>Salter</i>	x	x		x	3, 12, 19, 21, 36, 37, 38, 39, 40, 43.	and in the Bird's-eye and Chazy Limestone, Fort Cassin, Vermont, U.S. America.
<i>Piloceras,</i> <i>invaginatum</i> , var. I.	x	x		x	40.	
<i>Piloceras,</i> <i>invaginatum,</i> var. II.	x	x		x	12, 20, 21, 36, 37, 38, 43.	
<i>Piloceras,</i> <i>invaginatum,</i> var. III	x			x	12, 36, 43.	
<i>Piloceras</i> sp.	x	x		x	2, 19, 39.	
<i>Trocholites,</i> <i>Conrad</i>						Billings records several species of <i>Nautilus</i> from zones F.-K., Newfoundland.
<i>Trocholites,</i> (<i>Nautilus</i>) sp. I	x	x		x	5, 12, 21.	
<i>Trocholites,</i> (<i>Nautilus</i>) sp. II.	x	x			5, 12, 21.	

Trocholites,
(*Nautilus*) sp.
III.

x

20.

Trocholites,
(*Nautilus*) IV.

x

x

5

Trocholites
sp.

x

x

x

1, 11, 19,
36,42, 43.

INCERTAE
CEDIS

Planolites,
Nicholson

x

x

x

Abundant in
certain
horizons of
the
limestones of
the Olenellus
zone and of
the
Calciferous
Sand-rock of
N. America.