



BULLETIN 308

LOWER DEVONIAN (LOCHKOVIAN) BIOSTRATIGRAPHY AND
BRACHIOPOD FAUNAS, CANADIAN ARCTIC ISLANDS

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APPENDIX 1

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APPENDIX 1

FAUNAL LISTS FROM ISOLATED OUTCROPS

GSC loc. C-26806, Prince of Wales Island

Skenidioides robertsensis Johnson, Boucot, and Murphy (14p, 6d)*
Schizophoria fossula n. sp. (33v, 31d, 15a)
Salopina submurifer Johnson, Boucot, and Murphy (84v, 82d, 32a)
Gypidula sp. (1p, 2d)
Mesodouwillina sp. 1 (78v, 17d, 80a)
"Uncinulus" sp. (2a)
Ancillotoechia gutta gutta Johnson, Boucot, and Murphy (45v, 71d, 380a)
Ancillotoechia? sp. (1d)
Atrypa nieczlawiensis? Kozłowski (2v, 3a)
Howellella sp. 1 (280v, 201d, 77a)
Cyrtina sp. (4v, 1d)
Conocardium sp. (7a)
gastropods (85)
corals (4)
silicified fauna at this locality

GSC loc. C-26808, Prince of Wales Island

Ancillotoechia sp. (1v, 2a)
Howellella sp. 1 (9v, 4d, 2a)
trilobites (14)
indet. gastropods
indet. pelecypod

GSC loc. C-26809, section 2, Prince of Wales Island

Iridistrophia sp. (3v, 1d)
Howellella sp. 1 (5v, 2a)
trilobites

GSC loc. C-26810, section 2, Prince of Wales Island

Schizophoria sp. (1v)
Iridistrophia sp. (2v, 3d)
Mesodouwillina sp. (23v)
"Uncinulus" sp. (1v, 1d)
Ancillotoechia gutta Johnson, Boucot, and Murphy (17a)
Atrypa sp. (1d)
Howellella sp. 1 (25v, 12d, 24a)
Ambocoelia? sp. (1v, 2a)
Lingula? sp. 1
indet. pelecypod
trilobite fragments (105)

* v = ventral valve; d = dorsal valve; a = articulated valve

GSC loc. C-26841, Prince of Wales Island, Reef

Schizophoria fossula n. sp. (35v, 37d, 3a)
Gypidula pelagica (Barrande) (22v, 19d, 1a)
Grayina magnifica (Kozlowski) (3v, 3d)
Leptaena nassichuki n. sp. (1v, 6d)
Eoschuchertella sp. (8v, 5d)
Cymostrophia? sp. (4v)
Ancillotoechia gutta? Johnson, Boucot, and Murphy (1v, 1a)
Machaeraria? sp. (1a)
"Tadschikia"? sp. (2v)
indet. rhynchonellids (7)
Atrypa nieczlawiensis Kozlowski (18v, 25d, 13a)
Spinatrypa sp. (3v, 2d, 3a)
Coelospira sp. (1v)
Notoparmella gilli Johnson (1a)
Protathyris sp. (3v, 4a)
Howellella sp. (20v, 10d, 1a)
Acanthospirifer sp. (16v, 10d, 4a)
indet. smooth brachiopods (6)
Platyceras sp. (1)
indet. ostracode (1)
indet. tabulate coral (1)
indet. fish and fish spines

GSC loc. C-26845, Prince of Wales Island, Reef

Schizophoria sp. (1v, 1d)
Gypidula pelagica (Barrande) (113v, 49d, 1a)
Grayina magnifica (Kozlowski) (6v, 5d)
Leptaena nassichuki? n. sp. (7v, 11d)
Eoschuchertella sp. (10v, 1d)
Leptostrophia? sp. (1v)
Mesodouwillina sp. (2v)
Ancillotoechia gutta? Johnson, Boucot, and Murphy (4v, 1d)
indet. rhynchonellids (12)
"Tadschikia"? sp. (1v, 3d, 1a)
Atrypa nieczlawiensis Kozlowski (35v, 98d, 1a)
Spinatrypa sp. (4d)
Notoparmella? sp. (2d)
Howellella sp. (27v, 31d)
Acanthospirifer sp. (5v, 1d)
indet. spirifer (1v)
indet. spirifer, strong ribs (2d)
indet. brachiopods (10)
Orbiculoidea? sp. (2)
Platyceras sp. (1)
indet. fish and fish spines

APPENDIX 2

DESCRIPTIONS OF MEASURED SECTIONS

Section 1

Prince of Wales Island, Smith Bay
Air photograph A16189-84
Co-ordinates: 2.6X, -3.5Y

Unnamed formation
(base at 0 m)

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
1	Dolomite (limy): finely crystalline, thin to medium bedded, wavy, undulatory, badly fractured; light olive-grey to grey-brown, weathering pinkish grey-white to pale yellow-orange; quite fossiliferous, large (8 cm height) gastropods, solitary horn corals?; some tiny vugs (2-3 mm) partially infilled with sparite. At 4.0 m, gastropod and coral? sample, GSC locs. C-26801, C-26802; at 6.0 m, algal stromatolites become common, numerous gastropods, bedding becomes thinner and more fractured, GSC locs. C-26803, C-26804	9.5	9.5

Top of section, no more exposure.

Section 2

Prince of Wales Island
Air photograph A16189-84
Co-ordinates: 1.5X, 1.0Y

Unnamed formation
(base at 0 m)

1	Lime mudstone: thin bedded, wavy; medium to dark grey, weathering pale yellow-orange; yellow-orange shale partings present; well indurated, platy; rare brachiopods, rare tiny trilobites (pygidiums); unit sparsely fossiliferous. At 2.0 m, GSC loc. C-26809	4.0	4.0
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Unit	Lithology	Thickness (metres)	Height Above Base (metres)
2	Lime mudstone: thin bedded, nearly lenticular, blocky; medium dark grey, weathering pale yellow-orange; less argillaceous material than previous unit; quite fossiliferous; fossils confined to small lenses within beds, rare fossils scattered in pods, trilobites, crinoids. At 4.25 m, GSC loc. C-26810	4.0	8.0

Isolated outcrops

Prince of Wales Island, Smith Bay
 Air photograph A16189-85
 Stratigraphically above section 3
 Co-ordinates: -0.7X, -0.3Y

Lime wackestone-packstone: medium to thick bedded, undulatory; brownish grey, weathering light olive-grey to grey-brown; fetid, well indurated, very fossiliferous; common large crinoids, brachiopods, colonial corals, slightly argillaceous, fossils dispersed throughout beds as well as on top of bedding planes, appear to be lime mud intraclasts 1.5-4 cm in length. GSC loc. C-26818; unit is below reef

Downstream from reef
 Co-ordinates: 0.0X, 0.0Y

Dolomite: calcareous?, finely to very finely crystalline, thin to medium bedded; medium dark grey to olive-grey, weathering greyish yellow-orange, well indurated, quite fractured, numerous wispy dark grey-black laminations, blocky in places; rare inarticulate brachiopods, Lingula, slightly fetid. GSC loc. C-26820

Above previous unit, about 1 m of lime mudstone: thin to medium bedded; medium dark grey, weathering medium grey to yellow-grey; rare large brachiopods, Iridistrophia johnsoni n. sp., present. GSC loc. C-26821

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
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Reef

Lime wackestone-packstone: thin to medium bedded; medium grey, weathering grey-brown to grey-orange; moderately indurated; brachiopods common, crinoids extremely abundant, rare trilobites, rare fish fragments. GSC loc. C-26841; above this, GSC loc. C-26842. Crinoidal horizon grades upward to a lime mudstone with argillaceous lenses fairly common; upper beds are more thinly bedded, platy, and weather to pale yellow-orange; approximately 10-15 m of beds here at toe of reef

Lime mudstone-dolomite: medium to thick bedded, blocky; medium dark grey to olive-grey, weathering medium brown; well indurated, argillaceous, fractured; reef flank. GSC loc. C-26843

Lime mudstone-wackestone: massive; medium dark grey to medium grey, weathering light grey to yellow-grey; well indurated, fossiliferous, common crinoids; few common colonial corals, favositid types; abundant stromatoporoids and algal? structures. Reef core. GSC loc. C-26844

There are approximately 25 m of beds in this creek; upper units are lumpy bedded lime mudstone with grey-green argillaceous seams with abundant crinoid remains.

Prince of Wales Island, Smith Bay
Air photograph A16189-85
Co-ordinates: +0.6X, +0.3Y

Upstream from reef, about 50-60 m. Lime wackestone: thin bedded, wavy; medium grey, weathering yellow-brown to pale yellow-orange; well indurated; argillaceous, extremely fossiliferous; abundant crinoids, common to abundant fish, brachiopods, trilobites, bedding blocky in places. GSC loc. C-26845

Section 3

Prince of Wales Island, Smith Bay
 Air photograph Al6189-84
 Co-ordinates: +2.2X, +1.9Y

This section is stratigraphically above section 2. Approximately 5 m missing.

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
Unnamed formation (base at 0 m)			
1	Lime mudstone: thin bedded, wavy to undulatory; dark yellow-brown, weathering yellow-orange; broken outcrop, quite fossiliferous, common colonial corals, abundant brachiopods, rhynchonellids, atrypids, spirifers; silty-sandy, well indurated, fractured. At 0.25 m, GSC loc. C-26811	0.5	0.5
2	Covered interval; limestone talus	3.5	4.0
3	Lime mudstone: thin to medium bedded, undulatory; medium grey to dark yellow-brown, weathering yellow-orange to brown, fractured, argillaceous, very fossiliferous, orthocone cephalopods, colonial corals, brachiopods, rare solution vugs (relict brachiopods?), crinoids. At 4 m, GSC loc. C26812; at 4.5 m, GSC loc. C-26813; at 5.0 m, GSC loc. C-26814	1.5	5.5
4	Dolomite: finely crystalline, medium to thick bedded, fairly lenticular; medium yellow-brown, weathering light yellow-orange to medium dark grey; well indurated, more resistant than underlying unit 3, sandy, rare fossils, cephalopod, unit slightly calcareous in places, some small vugs, fractured. At 6 m, GSC loc. C-26815	3.5	9.0
5	Lime mudstone: thin to medium bedded, nearly lenticular; medium dark grey, weathering dark grey to yellow-orange; moderately indurated, argillaceous, moderately fossiliferous; brachiopods, trilobites, colonial corals. At 9.5 m, GSC loc. C-26816; at 12 m, different type of brachiopods, mainly strophomenids, bedding slightly platy; at 12 m, GSC loc. C-26817	4.5	13.5

Section 4

Prince of Wales Island, Smith Bay
 Air photograph A16189-85
 Co-ordinates: -1.4X, +5.9Y

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
1	Lime mudstone: thin bedded, nearly lenticular; medium dark grey, weathering greenish grey; argillaceous, sparsely fossiliferous, well indurated, fossils seen in small pockets, rest of bedding has rare fossils, few brachiopods, some in the form of geopetals, fractured. At base, GSC loc. C-26822	1.0	1.0
2	Lime mudstone: thin bedded, slightly undulatory; dark yellow-brown to grey-brown, weathering moderate yellow-brown; flaggy, argillaceous, yellow-orange to grey, argillaceous seams throughout, quite fossiliferous; brachiopods, trilobites, crinoids on bedding planes, moderately indurated. At 1.5 m, GSC loc. C-26823	1.0	2.0
3	Lime mudstone: thin to medium bedded; medium dark grey, weathering yellow-orange, yellow-brown; few argillaceous seams, beds smooth, curved, common brachiopods, crinoids and rare fish, well indurated, fractured, argillaceous seams not as soft and poorly preserved as previous unit. At 2.75 m, GSC loc. C-26824; at 3 m, GSC loc. C-26825 (fish); at 5 m, GSC loc. C-26826; at 5.5 m, GSC loc. C-26827	3.5	5.5
4	As in unit 3, but no more pronounced argillaceous seams. At 7 m, GSC loc. C-26828, trilobites and brachiopods common; at 9.5 m, a 10 cm thick brachiopod horizon, GSC loc. C-26829	5.0	10.5
5	Wackestone-packstone: as in unit 4, but very abundant crinoids, common brachiopods and orthocone cephalopods. At 10.5 m, GSC loc. C-26830. Bedding surfaces are dark brown	1.0	11.5
6	Lime mudstone, as in unit 4, rare pelecypod, common brachiopods. At 13.5 m, GSC loc. C-26831; at 14.5 m, GSC loc. C-26832	3.0	14.5

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
7	Covered interval	3.5	18.0
	Top of section, top of creek valley. This section may be equivalent to parts of section 5		

Section 5

Prince of Wales Island, Smith Bay
Air photograph Al6189-85
Co-ordinates: -2.7X, +8.0Y

Unnamed formation
(base at 0 m)

1	Argillaceous lime mudstone-shale: very thin bedded, platy; olive-black, weathering light greenish grey; few argillaceous seams, poorly indurated, quite fractured, inarticulate brachiopods, few to common. At base, GSC loc. C-26833	2.5	2.5
2	Lime mudstone: thin to medium bedded, fairly lenticular; medium dark grey, weathering light olive-grey, well indurated, slightly petroliferous; rare brachiopods, trilobites, faint laminations, slightly fractures. At 2.75 m, GSC loc. C-26834	1.0	3.5
3	Argillaceous lime mudstone: thin to medium bedded, undulatory; medium dark grey to olive-grey, weathering yellow-grey; badly fractured, well indurated; common brachiopods, trilobites, fish, cephalopods, pelecypods, gastropods. At 4.5 m, GSC loc. C-26835; at 4.5 m, GSC loc. C-26836	1.3	4.8
4	Lime mudstone: thin to medium bedded, fairly lenticular; olive-grey, weathering yellow-orange; well indurated, block, rare yellow-orange argillaceous seams; slightly fractured; common brachiopods, trilobites, few crinoids and gastropods. At 5 m, GSC loc. C-26837; at 6.5 m, GSC loc. C-26838; at 8.0 m, GSC loc. C-26839, <u>Monograptus uniformis</u> ; at 9.5 m, GSC loc. C-26840	4.7	9.5

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
Air photograph Al6189-86 Co-ordinates: -3.1X, -1.8Y			
<u>Isolated outcrop</u>			
About 6 m of beds.			
Lime mudstone, thin to medium bedded; medium dark grey, weathering olive-grey; well indurated; few trilobites, <u>Warburgella rugulosa canadensis</u> . At 3 m, GSC loc. C-26855. These beds are stratigraphically below section 6			
<u>Section 6</u>			
Prince of Wales Island, Smith Bay Air photograph Al6189-86 Co-ordinates: -2.1X, -1.5Y			
Unnamed formation (base at 0 m)			
1	Lime mudstone: thin to medium bedded, lenticular; brownish grey, weathering light grey; well indurated, fetid, fractured, rare trilobites. At base, GSC loc. C-26856	3.8	3.8
2	Lime mudstone: thin to medium bedded, slightly undulatory; medium grey-brown, weathering light grey-brown to yellow-orange; well indurated, fetid, less resistant than unit 1; poorly preserved (few) brachiopods. At 4.7 m, GSC loc. C-26857; at 5.5 m, GSC loc. C-26858; at 6.2 m, GSC loc. C-26859, more brachiopods here; few yellow-orange argillaceous lenses seen in places; unit becomes lime mudstone to wackestone as some beds are full of fossils; at 8 m, GSC loc. C-26860	7.7	11.5
3	Lime mudstone-wackestone: very thin to thin bedded, platy, recessive; grey-brown, weathering light grey; poorly indurated, fossiliferous, badly fractured, fetid, brachiopods, trilobites. At 11.7 m, GSC loc. C-26861; at 13.7 m, GSC loc. C-26862	2.3	13.8
4	Covered interval	1.2	15.0

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
5	As in unit 2	4.8	19.8
6	Lime mudstone: thin to medium bedded, nearly lenticular; medium grey, weathering pinkish grey to grey-brown; well indurated, fractured, blocky, fetid; few fossils, brachiopods, trilobites; yellow-orange argillaceous lenses fairly common. At 20.7 m, GSC loc. C-26863; at 24 m, GSC loc. C-26864	6.2	26.0
7	Lime mudstone-wackestone: thin to medium bedded, fairly lenticular, blocky; medium dark grey, weathering medium grey-brown; well indurated, fetid, fractured; almost a coquina of brachiopods in places, spirifers (small). At 27 m, GSC loc. C-26865; at 29.5 m, GSC loc. C-26866	5.0	31.0
8	Covered interval, recessive	5.5	36.5
9	Lime wackestone, packstone: thin to medium bedded; medium light grey, weathering yellow-orange-brown bedding; blocky, fairly dense, not brittle, quite fossiliferous, abundant brachiopods, lesser amounts of other elements. At 40.6 m, GSC loc. C-26867	4.3	40.8
10	Lime mudstone: thin bedded, platy; medium to light grey, weathering light olive-grey; somewhat recessive, although well indurated; some dark grey laminations present; fractured. At 41.6 m, GSC loc. C-26868	1.2	42.0
11	Lime mudstone: thin to thick bedded, fairly lenticular; light grey, weathering medium brown-grey to yellow-orange-grey; well indurated, blocky, forms a small cliff at top of creek. At 48 m, GSC loc. C-26869	6.0	48.0
Top of section.			

Section 7

Prince of Wales Island, Smith Bay
 Air photograph A16189-86
 Co-ordinates: -5.6X, +3.9Y

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
Unnamed formation (base at 0 m)			
1	Lime wackestone: medium bedded, block, undulatory; dark yellow-brown, weathering light grey to light olive-grey; well indurated, slightly fetid; fractured, fossiliferous, rare brachiopods, abundant bryozoans on bedding planes, rare colonial corals; yellow-orange argillaceous lenses on some bedding planes. At 0.25 m, GSC loc. C-26847	1.5	1.5
2	Lime wackestone-packstone: thin bedded, slightly undulatory; dark grey to greyish black, weathering medium light grey; well indurated argillaceous seams, fetid, extremely fossiliferous, brachiopods, crinoids, trilobites. At 1.75 m, GSC loc. C-26848	0.5	2.0
3	Lime mudstone-wackestone: thin to medium bedded, fairly lenticular; medium dark grey, weathering medium light grey to grey-brown; well indurated, fetid, fossiliferous; common brachiopods (rhynchonellids), crinoids; fossils are dispersed throughout beds, but locally are concentrated in lenses of 3-10 cm; many brachiopods are disarticulated, but rhynchonellids are articulated. At 2.5 m, GSC loc. C-26849; at 4.70 m, GSC loc. 26850, lense full of orthids and strophomenid brachiopods, quite argillaceous; at 6.25 m, GSC loc. C-26851, zone of packstone-grainstone orthids and strophomenids, coquina of these brachiopods; at 8.8 m, GSC loc. C-26852, small packstone-grainstone lense with tremendous amounts of rhynchonellids, lesser strophomenids and orthids; at 10.2 m, GSC loc. C-26853, bedding rubbly here, fossils rare, few crinoids, rare poorly preserved brachiopods	9.5	11.5

This section is partially equivalent to the upper beds of section 6.

Section 8

Prince of Wales Island, Drake Bay
 Air photograph Al6189-109
 Co-ordinates: -4.4X, -3.7Y

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
Unnamed formation (base at 0 m)			
1	Argillaceous lime mudstone-shale: very thin to thin bedded, occasionally medium bedded, platy; medium dark grey to olive-grey, weathering light olive-grey to greenish grey; unit contains thin yellow-orange argillaceous seams; moderately indurated, slightly fetid, rare brachiopods, slightly fractured. At base, GSC loc. C-26871; at 2 m, GSC loc. C-36872, 2 large brachiopods collected; at 3 m, GSC loc. C-26873, brachiopods fairly common; at 3.5 m, GSC loc. C-26874, thin lenses of fossils in one bed; at 4 m, GSC loc. C-26875, common brachiopods (<i>Atrypa</i>), trilobites; interbed of lime mudstone, thin to medium bedded, nearly lenticular; medium grey, weathering yellow-orange; well indurated, blocky, rare fossils, brachiopods, trilobites; silty, more resistant than unit below, rare fish	6.0	6.0
2	Lime mudstone: thin to medium bedded, blocky, slightly undulatory; medium grey to olive-grey, weathering moderate yellow-brown; well indurated, slightly fractured, silty, few yellow-orange argillaceous seams; common brachiopods and gastropods; fetid. At 6.8 m, GSC loc. C-26876	2.5	8.5
3	Unit of intertonguing and channelling of soft argillaceous lime mudstone and more indurated silty lime mudstone-siltstone	6.0	14.5
	Unit A - silty lime mudstone-siltstone: thin to medium bedded, nearly lenticular; light grey, weathering to greyish orange; well indurated, unfossiliferous (macro), slightly fractured. At 9 m, GSC loc. C-26877		

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
	Unit B - argillaceous lime mudstone-shale: very thin to thin bedded, undulatory; medium grey, weathering light yellow-grey; badly fractured, moderately indurated (lumpy bedded), rare brachiopods (<i>Atrypa</i> sp.), iron stains on bedding planes; dark grey to black laminations common, slightly silty. At 10 m, GSC loc. C-26878		
	Units A and B grade laterally upstream into calcareous siltstone which contains rare brachiopods, few argillaceous seams, rare poorly preserved fish at base. At 16.8 m, GSC loc. C-26879		
4	Lime mudstone: thin to medium bedded, fairly lenticular; medium grey, weathering olive-grey to yellow-orange; well indurated, quite silty, rare brachiopods, few argillaceous seams, rare poorly preserved fish at base. At 16.8 m, GSC loc. C-26880	2.5	17.0
5	Interbedded lumpy bedded silty lime mudstone-wackestone (A) and (B): well indurated, silty lime mudstone; lumpy bedded units have abundant fossils; near top of unit, argillaceous seams are rare and bedding becomes medium; on bedding planes, rare colonial corals (favositids). Channelling evident here; unit A is the channel infill	9.0	26.0
	Unit A - silty lime mudstone: thin to medium bedded, block, undulatory; medium light grey, weathering light grey; well indurated, rare brachiopods present. At 19 m, GSC loc. C-26882		
	Unit B - argillaceous lime mudstone-wackestone: thin bedded, undulatory, lumpy; medium grey, weathering greenish grey; common grey-green argillaceous seams; very fossiliferous; common colonial and solitary corals, gastropods, brachiopods, few orthocone cephalopods; these units thin and thicken laterally. At 18 m, GSC loc. C-26881; at 20 m, GSC loc. C-26883, lense of abundant, articulated brachiopods		

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
6	Argillaceous lime mudstone-shale: very thin to thin bedded, platy; medium grey, weathering medium grey to yellow-orange; little argillaceous material on bedding planes; the odd bed is more argillaceous and contains a few brachiopods and crinoids, well indurated; slightly fetid, silty. At 26.5 m, GSC loc. C-26884	1.5	27.5
7	Argillaceous lime mudstone: thin to medium bedded, nearly lenticular, blocky; medium grey to olive-grey, weathering light olive-grey to grey-brown; well indurated, silty; thin yellow-grey argillaceous seams between beds, slightly fossiliferous, rare brachiopods and few crinoids. At 29.5 m, GSC loc. C-26885; at 42 m, GSC loc. C-26886; at 47 m, unit becomes more silty, and yellow-orange in colour (siltstone?); at 49 m, GSC loc. C-26887. Near top, bedding is thin to very thin	28.0	55.5
8	Lime mudstone: thin to medium bedded, blocky, lumpy; light olive-grey to brownish grey, weathering yellow to orange-brown; well indurated, silty, slightly fetid, rare crinoids, rare brachiopods. At 57 m, GSC loc. C-26888; at 60.5 m, GSC loc. C-26889	6.0	61.5
9	Sandstone: very fine grained, platy, lenticular; medium light grey, weathering brownish grey to dusky yellow; red-orange stains on bedding planes, moderately indurated, recessive unit, rare dark grey laminations. At 67.5 m, GSC loc. C-26890, one large trilobite pygidium from float	6.5	68.0
10	Broken outcrop: rubble, silty, lime mudstone: thin bedded; medium dark grey, weathering dusky yellow to yellow-grey; well indurated in places, platy, lenticular in places, numerous large colonial corals seen in rubble; some beds have yellow-orange to grey silt layers near the top; probable sandstone interbeds are covered by talus. At 73 m, GSC loc. C-26891, poorly preserved brachiopods in talus	12.0	80.0

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
11	Silty lime mudstone: thin bedded; medium light grey, weathering brownish grey; well indurated, blocky, lumpy in places, few yellow-orange argillaceous seams, rare crinoids; toward top of unit argillaceous seams become more abundant; also in places large colonial corals in life position, rare brachiopods, gastropods. At 85.5 m, GSC loc. C-26892	9.0	89.0
12	Covered interval: rubble is very fine grained sandstone and silty lime mudstone; compare with unit 9	5.0	94.0
13	Silty lime mudstone to calcareous siltstone: thin to medium bedded, variably undulatory and somewhat lumpy; medium light grey, weathering yellow-grey; well indurated, blocky, few yellow-orange argillaceous lenses; dark grey laminations in places, rare crinoids. At 95 m, GSC loc. C-26893	3.5	97.5
14	Lime mudstone: thin bedded, undulatory, lumpy; medium grey, weathering brown-grey; well indurated, numerous yellow-grey argillaceous seams convoluted, slightly fetid, few crinoids. At 99 m, GSC loc. C-26894	5.5	103.0
15	Covered interval: grass, limestone rubble	26.5	129.5
16	Dolomite: finely crystalline, thin to medium bedded; medium grey to light olive-grey, weathering yellowish-grey; blocky, well indurated, porous, some vugs 5 mm in diameter, partially infilled with calcite; slightly fetid, rare colonial corals, poorly preserved; unit caps hill in surrounding areas. At 131 m, GSC loc. C-26895	2.5	132.0

Top of section.

Section 9

Prince of Wales Island, Drake Bay
 Air photograph A16189-109
 Co-ordinates: -0.5X, +3.5Y

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
Unnamed formation (base at 0 m)			
1	Very fine grained sandstone to siltstone: thin to medium bedded, lenticular, platy; light grey to light olive-grey, weathering light grey to dusky yellow; well indurated, dolomitic, weak calcite cement in places; fine dark grey-black laminations, black organic remains, lenticular in shape, rare burrows?. At 1 m, GSC loc. C-26896, small load casts on bottoms of beds; at 7 m, GSC loc. C-26897	8.5	8.5
2	Dolomite: very finely to finely crystalline; medium to thick bedded; medium light grey, weathering yellow-orange-grey; well indurated, silty, massive looking; debris contains some large gastropods and colonial corals poorly preserved; some large vugs partially infilled with calcite, some argillaceous seams present, faint dark grey laminations. At 9 m, GSC loc. C-26898	2.0	10.5
3	Very fine grained sandstone: very thin to thin bedded, undulatory; medium light grey to olive-grey, weathering yellow-grey; lower part contains argillaceous lenses, very thin shale partings between beds, well indurated, dolomitic. At 11 m, GSC loc. C-26899; at 12.5 m, GSC loc. C-26900	8.0	18.5
4	Dolomite: very finely crystalline, thin bedded, undulatory; medium dark grey-brown, weathering yellow-grey-orange; argillaceous seams common; faint dark grey-black laminations, well indurated, silty, rare large vugs partially infilled with calcite. At 19.5 m, GSC loc. C-26901	4.5	23.0
5	Siltstone to very fine grained sandstone: thin bedded, platy; medium grey to light grey-brown, weathering yellow-orange-grey; well indurated, rare crinoids, rare colonial corals. At 27 m, GSC loc. C-26902, numerous load casts on bottom of beds	18.0	41.0

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
Broken section.			
Continue downstream, trace unit from 18.5-23 m downstream for more section; now in the limestone facies, 0.4 km downstream from section start, abundant brachiopods in lumpy bedded limestone unit. GSC loc. C-26903.			
1	Lime mudstone: thin bedded; medium dark grey, weathering yellow-grey to medium grey; well indurated; silty, yellow-grey argillaceous seams; few crinoids, rare brachiopods. This unit exhibits channelling and crossbeds. At 17 m, GSC loc. C-26904	3.0	18.0
2	Lime mudstone: medium bedded; medium dark grey, weathering medium grey to yellow-orange; well indurated; appears to be breccia; contains stromatoporoids? and colonial coral heads, not in growth position. Corresponds to unit 4 upstream, however along strike this unit thins and thickens	5.0	23.0
3	Argillaceous lime mudstone interbedded with calcareous shale: laminar; thin bedded, medium dark grey, weathering yellow-grey to grey-brown; poorly indurated, fissile, silty; few crinoids, rare brachiopods, more limy units are more indurated. At 23.5 m, GSC loc. C-26905; at 24.5, GSC loc. C-26906, horizon of abundant tiny brachiopods and rare fish	5.0	28.0
4	Lime mudstone-calcareous siltstone: thin bedded; lenticular, platy; medium dark grey, weathering yellow-grey; well indurated, very silty; rare brachiopods. At 28.5 m, GSC loc. C-26907, abundant fish; at 32 m, GSC loc. C-26908, poorly preserved common brachiopods, few trilobites, gastropods and pelecypods	5.5	33.5

Isolated outcrops

Prince of Wales Island, Cape John Dyer

Co-ordinates: -8.9X, -1.6Y

Lime mudstone: very thin to medium bedded, lenticular, platy-block; medium dark grey to brownish grey, weathering grey-orange to dusky yellow; very silty, very well indurated; very thin beds more argillaceous than medium beds; rare brachiopods, rare poorly preserved fish in talus, common high-spined gastropods at one horizon; beds dip upstream. GSC loc. C-26909

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
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Upstream from previous unit
Co-ordinates: -6.9X, -1.2Y

Lime mudstone-wackestone: thin bedded, undulatory; medium dark grey, weathering yellow to orange-grey; well indurated, silty, common crinoids, brachiopods. GSC loc. C-26910, rare high-spired gastropods and rare ostracodes

Section 10

Prince of Wales Island, Cape John Dyer
Air photograph A16153-18
Co-ordinates: -5.6X, +0.4Y

Unnamed formation
(base at 0 m)

- | | | | |
|---|---|-----|------|
| 1 | Lime wackestone: thin bedded, undulatory; medium to dark grey, weathering yellow to orange-grey; well indurated, fetid, abundant crinoids, few brachiopods and rare trilobites, few yellow-grey argillaceous seams between beds. At 1 m, GSC loc. C-26911 | 2.0 | 2.0 |
| 2 | Lime mudstone-wackestone: thin bedded, undulatory and lenticular in places; medium dark grey, weathering yellow-brown to yellow-grey; fetid, slightly silty, green-grey argillaceous seams; well indurated; rare crinoids, solitary horn corals, brachiopods, also common to abundant fish at upper levels. At 3.5 m, GSC loc. C-26912; at 6.0 m, GSC loc. C-26913; at 9.1 m, GSC loc. C-26914; at 9.5 m, GSC loc. C-26915; at 9.7 m, GSC loc. C-26916; at 9.8-9.9 m, GSC loc. C-26917; at 10 m, GSC loc. C-26918; at 10.2 m, GSC loc. C-26919; at 10.4 m, GSC loc. C-26920; at 10.6 m, GSC loc. C-26921. | 9.5 | 11.5 |

Section 11

Baillie Hamilton Island, north coast
 Air photograph A16175-96
 Co-ordinates: -2.7X, +4.1Y

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
Cape Phillips Formation (base at 0 m)			
1	Argillaceous siltstone and shale: very thin to thin bedded; platy, lenticular; dark grey, weathering yellowish grey to blue-grey; moderate to poorly indurated, calcareous, rare inarticulate brachiopods; outcrop quite rubbly; common dark grey to black laminations. At 1.5 m, GSC loc. C-26922; at 14.5 m, GSC loc. C-26923; at 15 m, unit becomes slightly less silty, tending to an argillaceous limestone; at 24 m, GSC loc. C-26924; at 35 m, GSC loc. C-26925, talus, poorly preserved fish and ceratiocerid; at 51 m, GSC loc. C-26926, poorly preserved fossil, conularid?; at 67.5 m, GSC loc. C-26927	82.5	82.5
2	Silty shale to shaly siltstone: laminar to very thin bedded with occasional thin beds, platy, lenticular; medium dark grey to black, weathering yellow-grey to blue-grey; calcareous, moderately well indurated, strongly laminated, dark grey, lenticular. At 83 m, GSC loc. C-26928; at 93 m, GSC loc. C-26929, poorly preserved graptolite found in talus (<u>Monograptus?</u>); at 107.5 m, GSC loc. C-26930, rare poorly preserved brachiopods, coarse ribbed	35.5	118.0
3	Lime mudstone: thin bedded, platy, lenticular; medium grey, weathering yellow-grey to blue-grey; well indurated, slightly silty, dark grey to black-grey laminations present; poorly preserved ceratiocerids and brachiopods seen in talus. At 120.5 m, GSC loc. C-26931, talus, poorly preserved spiriferid brachiopods, inarticulates; at 129 m, GSC loc. C-26932	15.5	133.5
4	Broken outcrop: limestone talus, appears similar to unit 3 but covered with talus. At 145 m, GSC loc. C-26933	21.5	155.0

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
Contact with overlying formation conformable.			
Unnamed formation			
5	Lime mudstone: thin bedded, lenticular to slightly undulatory; medium dark grey, weathering grey-brown to yellow-grey; well indurated, slightly silty, cliff former, rare orthocone cephalopods, tiny fragmented debris. At 156 m, GSC loc. C-26934	3.0	158.0
6	Argillaceous lime mudstone: laminated to thin bedded, lenticular; medium dark grey, weathering yellow-grey to grey-brown; dark grey laminations in intervals up to 5 m thick; silty, well indurated, rare crinoids, few tiny vugs infilled with sparite, rare ostracodes. At 159 m, GSC loc. C-26935; at 164 m, GSC loc. C-26936, inarticulate brachiopods, poorly preserved; at 176.5 m, GSC loc. C-26937; at 184 m, GSC loc. C-26938, few brachiopods	27.0	185.0
7	Lime mudstone: thin to medium bedded, fairly lenticular; medium dark grey, weathering light yellow-grey to grey-brown; well indurated; some yellow-grey argillaceous seams, rare crinoids and brachiopods. At 202 m, GSC loc. C-26939, horizon of abundant brachiopods; at 210.5 m, GSC loc. C-26940, common brachiopods and rare trilobites	41.0	226.0
8	As in unit 7, but much more silty and weathering yellow-orange. At 226 m, GSC loc. C-26941; at 236.5 m, GSC loc. C-26942, horizon of abundant brachiopods, large strophomenids; at 237.5 m, GSC loc. C-26943, coquina of brachiopods (strophomenids)	16.0	242.0
9	Lime mudstone: thin bedded, somewhat undulatory; medium light grey, weathering light grey to yellow-grey; well indurated, slightly silty, common yellow-orange to grey argillaceous seams; rare crinoids and brachiopods in lower part. At 242.5 m, GSC loc. C-26944; at 247 m, GSC loc. C-26945, horizon of abundant crinoids and brachiopods; at 255 m, GSC loc. C-26946	14.0	256.0
10	Covered interval; limestone talus	1.0	257.0

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
11	Lime mudstone-wackestone: thin bedded, undulatory, lumpy; medium grey, weathering yellow-grey; argillaceous, very well indurated, contains abundant skeletal debris and brachiopods, common crinoids, rare colonial corals; slightly silty. At 258.5 m, GSC loc. C-26947; at 259 m, GSC loc. C-26948; at 263 m, GSC loc. C-26949; unit increases in sand and silt content upwards; also some beds are packstone; at 266 m, GSC loc. C-26950; above 266 m, unit becomes rubbly and poorly exposed, common colonial corals; at 268 m, GSC loc. C-26951	13.0	270.0
12	Covered interval; sandy lime mudstone; poorly preserved brachiopods, large colonial corals (favositids)	11.5	281.5
13	Covered interval; blue-grey lime mudstone-packstone with silicified fauna. At 285-286 m, GSC loc. C-26952, common gastropods, brachiopods, few corals and bryozoans, rubble collection	10.0	291.5
14	Sandy lime mudstone: thin bedded, rubbly outcrop; light olive-grey, weathering dark grey to yellow-grey; well indurated, fetid; few silicified remains, bryozoa and corals, some crinoids, few vugs 2-3 mm in diameter, partially infilled with sparite, dolomitic. GSC loc. C-26953	0.5	292.0
15	Covered interval; limestone talus	7.5	299.5
16	Lime packstone: rubbly outcrop; thin bedded, blocky; pale yellow-brown, weathering medium light grey to blue-grey; tiny fossiliferous fragments, few ostracodes, some brachiopods. GSC loc. C-26954	0.5	300.0

Section 12

Baillie Hamilton Island, south coast
Air photograph A16175-93
Co-ordinates: +5.8X, +2.1Y

Cape Phillips Formation
(base at 0 m)

- 1 Argillaceous silty shale: very thin bedded, platy; medium dark grey, weathering yellow-grey to blue-grey; poorly indurated, rubbly outcrop, dark grey

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
	laminations, calcareous, slightly fetid; dip 35° to east. At 1 m, GSC loc. C-26955; at 30 m, GSC loc. C-26956, poorly preserved inarticulate brachiopods and ceratiocerids	38.5	38.5
2	Covered interval: lithology probably same as underlying unit 1	18.5	57.0
3	Siltstone to silty lime mudstone: thin bedded, slightly undulatory; light to medium grey, weathering yellow-grey; well indurated, calcareous; rare brachiopods and trilobites, pelecypods and gastropods; unit contains thin yellow-grey argillaceous seams; also poorly preserved graptolite fragments in talus. At 58 m, GSC loc. C-26957	9.0	66.0
4	Covered interval: siltstone and shale debris. At 66 m, GSC loc. C-26958, graptolite seen in talus, <u>Monograptus</u> :	6.0	72.0
5	Argillaceous siltstone interbedded with silty lime mudstone: thin bedded, nearly lenticular; light olive-grey to grey-brown, weathering yellow-grey to blue-grey; moderately well indurated, strongly calcareous, fractured; poorly preserved ceratiocerids and cephalopods; dark grey to black laminations, fetid. At 95.5 m, GSC loc. C-26959	46.5	118.5
6	Lime mudstone: thin bedded; medium light grey, weathering light grey; very well indurated; fetid, silty. At 119 m, GSC loc. C-26960	1.0	119.5
7	As in unit 5. At 121 m, GSC loc. C-26961; at 147 m, GSC loc. C-26962	29.5	149.0
8	Covered interval; siltstone talus	4.5	153.5
	Contact with overlying formation conformable.		
Unnamed formation			
9	Silty lime mudstone-calcareous siltstone: thin bedded, lenticular; medium grey to grey-brown, weathering yellow-grey to grey-brown; well indurated, slightly fetid, some beds have thin laminations of grey-yellow silty material, calcareous. At 154.5 m, GSC loc. C-26963	14.5	168.0

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
10	Argillaceous lime mudstone: very thin to thin bedded, lenticular; light brownish grey to medium light grey, weathering yellow-grey; laminated, dark grey, very well indurated; has silty and sandy interbeds, soft sedimentary deformation, cliff former, argillaceous layers show some truncation, calcareous. At 169 m, GSC loc. C-26964	2.0	170.0
11	Silty lime mudstone-siltstone: thin bedded, lenticular; medium light grey-brown, weathering yellow-orange; well indurated, laminated, calcareous; rare ostracodes, inarticulate brachiopods, <u>Lingula</u> , rare articulate brachiopods, spiriferids, ceratiocerids. At 184.5 m, GSC loc. C-26966; at 194.5 m, GSC loc. C-26967	25.0	195.0
12	Covered interval, lime mudstone and siltstone talus. At 209 m, talus changes colour; it is silty lime mudstone, slightly undulatory, weathering yellow-grey to grey-orange. At 210 m, GSC loc. C-26968, talus	20.0	215.0
13	Silty lime mudstone-siltstone: thin bedded, platy, lenticular, smooth; medium grey to light grey, weathering yellow-grey to yellow-orange; well indurated, calcareous, few rare brachiopods, rare gastropods. At 215 m, GSC loc. C-26969; at 215.5 m, GSC loc. C-26970, talus, single specimen of <u>Gypidula pelagica</u> ; at 223.5 m, GSC loc. C-26971, <u>Gypidula pelagica</u>	21.5	236.5
14	Silty lime mudstone: thin bedded, lenticular, smooth; medium light grey to light brownish grey, weathering light yellow-grey; well indurated, rare brachiopods, <u>Atrypa</u> sp. At 238 m, GSC loc. C-26972	7.5	244.0
15	Argillaceous lime mudstone-wackestone: thin bedded, undulatory (lumpy), medium dark grey to grey-brown, weathering yellow-grey-orange; well indurated, argillaceous lenses between beds; common abundant brachiopods, <u>Gypidula</u> , <u>Atrypa</u> , <u>Schizophoria</u> , rare trilobites. At 245 m, GSC loc. C-26973; at 245.5 m, GSC loc. C-26974	2.5	246.5

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
16	Silty lime mudstone: thin bedded, nearly lenticular; medium grey, weathering yellow-grey-orange; well indurated; some yellow-orange traces in middle of beds; grey-brown in laminations. At 249 m, GSC loc. C-26975	5.0	251.5
17	Covered interval; limestone and siltstone talus	2.5	254.0
18	Argillaceous lime mudstone: thin bedded, lumpy in places; weathering light medium grey; well indurated, fetid, sandy in places; common to abundant large colonial coral heads, favositid type, few brachiopods. At 254.5 m, GSC loc. C-26976; at 268 m, GSC loc. C-26977, rare, poorly preserved brachiopods; at 270 m, GSC loc. C-26978, large colonial coral; at 285 m, GSC loc. C-26979, small seam of concentration of abundant brachiopods and common gastropods	33.0	287.0
19	Covered interval to rubbly outcrop; as in unit 18	4.0	291.0
20	Argillaceous lime mudstone: thin bedded, undulatory (lumpy); medium dark grey to grey-brown, weathering light grey-brown to yellow-grey; well indurated, common yellow-grey argillaceous seams, other seams grey-green; few brachiopods, common colonial corals; slightly silty to sandy; some beds have fair amount of tiny communitated debris. At 300 m, GSC loc. C-26980, colonial coral; at 300 m, GSC loc. C-26981; at 303 m, GSC loc. C-26982, few brachiopods	24.0	315.0
21	Broken outcrop alternating with talus	5.0	320.0
22	As in unit 20, common colonial corals, some crinoids. At 324 m, GSC loc. C-26983; at 331.5 m, GSC loc. C-26984, thin unit with common brachiopods and trilobites, rare gastropods and ostracodes	13.0	333.0
23	Covered interval; limestone talus, unit probably as in unit 22		

Unit	Lithology	Thickness (metres)	Height Above Ba (metres)
24	Argillaceous lime mudstone: thin bedded, undulatory (lumpy); brownish grey to medium grey, weathering light yellow-grey; well indurated, slightly fetid, common brachiopods, gastropods, few colonial corals; unit has fossils throughout, but some beds have more than others. At 345.5 m, GSC loc. C-26985; at 351.5 m, GSC loc. C-26986	14.0	354.0
25	Covered interval; limestone talus, weathering yellow-orange; well indurated	6.0	360.0
26	As unit 24; bedding not quite as lumpy; common brachiopods, pentamerids, strophomenids. At 365 m, GSC loc. C-26987; at 371 m, GSC loc. C-26988; at 373 m, GSC loc. C-26989	18.5	378.5
27	Covered interval; limestone talus, weathering yellow-grey-orange; rubble quite fine	19.0	397.5
28	As unit unit 26; moderately indurated, abundant fossils, brachiopods, gastropods. At 403.5 m, GSC loc. C-26990	13.5	411.0
29	Covered interval; limestone talus, quite blocky, rubble	6.0	417.0
30	Argillaceous lime mudstone-wackestone: thin to medium bedded, fairly lenticular; medium grey to grey-brown, weathering medium grey-brown with patches of yellow-orange; well indurated, silty, quite fetid, thin yellow-grey argillaceous seams on bedding planes, quite fossiliferous, small debris, common tiny brachiopods, bryozoans, some colonial corals, trilobites, rare gastropods, solitary corals and orthocone cephalopod. At 418.5 m, GSC loc. C-26991	4.0	421.0
31	Covered interval; limestone talus, debris, coarse blocks to fine rubble	24.5	445.5
32	Argillaceous lime mudstone-wackestone: thin to medium bedded, rare medium bedded, lenticular to slightly undulatory; medium light grey to light olive-grey-brown, weathering light olive-grey; well indurated, silty, yellow-grey argillaceous material on bedding planes, slightly fetid, abundant bryozoans, rare gastropods and		

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
	rare colonial corals; amount of argillaceous material increases upwards and bedding more lumpy. At 446 m, GSC loc. C-26992	2.5	448.0
33	Covered interval; platy, silty limestone from cliffs above	23.0	471.0
34	Silty lime mudstone to calcareous siltstone: very thin to thin bedded, lenticular, smooth, platy; light yellow-grey, weathering medium yellow-grey to yellow-orange; wavy laminations, moderately indurated. At 471.5 m, GSC loc. C-26993	2.5	473.5
35	Covered interval; limestone and siltstone talus	5.0	478.5
36	Silty lime mudstone to calcareous siltstone: thin to medium bedded, fairly lenticular, blocky; medium light grey to light olive-grey, weathering yellow-orange-grey to medium grey; well indurated; rare colonial corals. At 479 m, GSC loc. C-26994; at 483.5 m, GSC loc. C-26995	7.0	485.0
37	Lime mudstone-wackestone: thin bedded, undulatory (lumpy); medium light grey with some pale yellow-brown patches, weathering grey-orange to grey-brown; well indurated, slightly fetid, silty thin yellow-grey argillaceous seams between beds, tiny fragmental debris, crinoids, ostracodes, colonial corals, rare trilobite fragments. At 486 m, GSC loc. C-26996	3.0	488.0
38	Covered interval; limestone talus, common colonial corals in talus	11.0	499.0
39	Argillaceous lime mudstone: thin to medium bedded, fairly lenticular, somewhat uneven, blocky; medium dark grey to brown-grey, weathering yellow-grey-orange to light grey-brown; fetid, well indurated, few to common colonial corals, rare medium grey argillaceous seams, silty. At 499 m, GSC loc. C-26997; at 500.5 m, GSC loc. C-26998, thin horizon of common bryozoans, solitary and colonial corals, ostracodes and brachiopods	2.5	501.5
40	As in unit 37	2.5	504.0

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
41	As in unit 39	4.0	508.0
42	Covered interval; limestone talus, somewhat coarse and blocky	4.0	512.0
43	Argillaceous lime mudstone: thin bedded, undulatory (lumpy); light olive-grey to grey-brown, weathering light grey to light yellow-grey; well indurated, fetid, yellow-grey argillaceous seams between bedding planes; abundant colonial corals and rare gastropods. At 513.5 m, GSC loc. C-26999	2.0	514.0
44	Argillaceous lime mudstone: thin bedded, nearly lenticular, smooth; medium grey-brown, weathering yellow-orange-grey; fetid, well indurated, rare yellow-grey argillaceous seams; tiny skeletal debris. At 515.5 m, GSC loc. C-27000	2.0	516.0
45	Covered interval; limestone talus, quite blocky, weathering yellow-orange	4.0	520.0
46	Argillaceous lime mudstone: thin bedded, bedding planes irregular, lumpy in places, lenticular in others; medium brown-grey, weathering dark yellow-orange to pale yellow-brown; well indurated, slightly fetid, few argillaceous seams present; tiny skeletal debris, some ostracodes. At 521.5 m, GSC loc. C-27001	7.5	527.5
47	Covered interval; limestone talus, mainly fine rubble	44.5	572.0
48	Lime mudstone: very thin to thin bedded, nearly lenticular, smooth; medium grey, weathering dark yellow-brown; slightly silty, fetid, well indurated; few to common very thin argillaceous laminations between bedding planes; few gastropods, ostracodes, rare brachiopods; rip-up phenomenon near top of unit. At 574 m, GSC loc. C-27002; at 575 m, GSC loc. C-27003, rip-up phenomenon	4.5	576.5
49	Argillaceous lime mudstone to calcareous siltstone: very thin to medium bedded, lenticular, platy to blocky; medium light grey, weathering pale yellowish brown to light olive-grey; well indurated, laminated in places, slightly fetid, thin yellow-grey argillaceous seams between		

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
	beds with tiny skeletal debris, rare to few ostracodes. At 578 m, GSC loc. C-27004; at 578.5 m, unit is laminar and very thin to thin bedded and less laminated	3.5	580.0
50	Covered interval; limestone and siltstone talus	12.0	592.0
51	Argillaceous lime mudstone; very thin to thin bedded, fairly lenticular, smooth, platy; medium grey, weathering yellow-grey to grey-brown; moderately indurated, slightly fetid, silty, dark grey-brown laminations in some beds; rare to few ostracodes. At 593 m, GSC loc. C-27005	4.0	596.0
52	Covered interval; limestone and siltstone, platy, quite fine debris, probably as in unit 51	6.0	602.0
53	As in unit 51	5.0	607.0
54	Covered interval; very thin bedded, platy, silty, limestone, grey-brown, weathering yellow-grey	3.0	610.0
55	As in unit 51. At 610.5 m, GSC loc. C-27006	1.5	611.5
56	Covered interval	6.5	618.0
57	As in unit 51	3.0	621.0
58	Covered interval	15.0	636.0
59	Argillaceous lime mudstone-wackestone in places, laminar: thin bedded, platy; pale yellow-brown to medium grey, weathering yellow-grey to grey-brown; numerous medium grey and yellow-grey argillaceous seams, very wavy, moderately indurated, slightly fetid, abundant tiny ostracodes, some tiny skeletal fragmental debris, brachiopods. At 636.5 m, GSC loc. C-27007	3.5	639.5
60	Covered interval; limestone and argillaceous material, platy	3.0	642.5

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
61	Argillaceous lime mudstone: thin bedded, slightly undulatory; medium dark grey to brownish grey, weathering light olive-grey to dark yellow-orange; moderately indurated, silty, slightly fetid, some yellow-grey argillaceous seams. At 643.5 m, GSC loc. C-27008	2.5	645.0
62	Covered interval; fine platy, silty shale and lime mudstone talus	4.5	649.5
63	As in unit 61	3.5	653.0
End of section, no more outcrop from here to the sea.			

Section 13

Bathurst Island, Cut Through Creek

Air photograph Al6203-56

Co-ordinates: Base: -0.6X, -1.1Y; top: -0.2X, -45Y

Cape Phillips Formation
(base at 0 m)

1	Shale and mudstone: laminar to very thin bedded, platy, smooth; dark grey, weathering medium dark grey to yellow-grey; calcareous, silty, strongly fetid, poor to moderately indurated, graptolitic, rare pyritized cephalopods. At 1 m, GSC loc. C-27009, graptolites; at 3 m, GSC loc. C-27010, graptolites; at 4.5 m, GSC loc. C-27011, graptolites; at 14 m, unit becomes dolomitic and barren of fossils	21.0	21.0
2	Interbedded dolomitic shale and silty mudstone. Shale: laminar; very thin bedded, platy, smooth; medium dark grey, weathering medium grey to grey-yellow; silty, fetid; poorly indurated; contains few large yellow-orange concretions. Mudstone: very thin to thin bedded; medium dark grey, weathering yellow-grey to grey-orange; moderately indurated; more resistant than shale. At 32 m, GSC loc. C-27012	12.0	33.0

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
3	Mudstone: medium to thick bedded, smooth; medium dark grey to grey-brown, weathering pale olive to dark yellow-orange; well indurated, silty, fetid, fractured. At 34 m, GSC loc. C-27013	4.5	37.5
4	Interbedded shale and mudstone-siltstone. Shale: laminar bedded; medium dark grey, weathering dark grey to dark reddish brown to moderate yellow in places; fissile, dolomitic, fetid. Mudstone-siltstone: thin bedded, smooth; greyish black to brownish black, weathering grey-orange; well indurated, dolomitic, laminated in places, fetid; these units thin and thicken. Shale:mudstone - 6:1. At 41 m, GSC loc. C-27014; at 47.5 m, GSC loc. C-27015, shale weathers to dark red-brown to greenish, very fetid; at 55 m, GSC loc. C-27016, graptolites; at 55.5 m, GSC loc. C-27017; at 59 m, GSC loc. C-27018, poorly preserved tiny graptolites; at 70.5 m, GSC loc. C-27019; at 87 m, GSC loc. C-27020, poorly preserved graptolites; at 110.5 m, GSC loc. C-27021, graptolites	86.5	124.0
5	Covered interval; recessive, probably shale	56.0	180.0
6	Interbedded shale and silty mudstone. Shale: laminar to very thin bedded; dark grey to grey-brown, weathering dark grey; platy, fissile, fetid, silty, dolomitic, recessive. Silty mudstone: thin bedded, smooth; yellow-grey to yellow-orange, weathering medium dark grey to grey-brown; dolomitic, moderately indurated. Shale:mudstone = 6:1	35.0	215.0

Contact between Cape Phillips and overlying Bathurst Island Formation conformable

Bathurst Island Formation

- 7 Interbedded silty to sandy mudstone and very fine grained sandstone. Mudstone: laminar to very thin bedded, platy, flaggy; medium dark grey to grey-brown, weathering medium grey to grey-brown; slightly calcareous, silty, sandy; fetid, moderately indurated.

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
	<p>Sandstone: thin to medium bedded, fairly smooth, very fine grained; medium light grey to brownish grey, weathering grey-orange and moderate yellow-brown; well indurated, slightly fetid, calcareous, argillaceous. Mudstone: sandstone = 1:1. At 219 m, GSC loc. C-27022; at 231 m, GSC loc. C-27023, graptolites; at 235 m, GSC loc. C-27024, tiny brachiopods, poorly preserved; at 246 m, GSC loc. C-27025, graptolites; at 296 m, GSC loc. C-27026, graptolites and brachiopods; at 296.5 m, GSC loc. C-27027, sandstone</p>	90.0	305.0
8	<p>Interbedded mudstone and sandstone, but mudstone is more massive. At 322 m, GSC loc. C-27028, sandstone</p>	19.5	324.5
9	<p>Interbedded sandstone and mudstone, as in unit 7. Sandstone:mudstone = 1:1. At 328.5 m, GSC loc. C-27029, dark grey-brown laminations common; at 350.5 m, GSC loc. C-27039, mudstone; at 354 m, GSC loc. C-27031, poorly preserved graptolites; at 364.5 m, GSC loc. C-27032, sandstone</p>	112.5	437.0
10	<p>Very fine grained sandstone to siltstone: thin to medium bedded, smooth, platy, blocky; medium dark grey to grey-brown, weathering greyish orange, well indurated, calcareous, argillaceous, slightly fetid. At 438 m, GSC loc. C-27033</p>	5.0	442.0
11	<p>Silty mudstone: very thin to thin bedded, platy, smooth; dark grey-brown, weathering medium grey to light yellow-grey; moderately indurated, calcareous, fetid</p>	9.0	451.0
12	<p>Interbedded very fine grained sandstone and calcareous mudstone; as in previous units. Sandstone:mudstone = 1.5:1. At 471 m, GSC loc. C-27034, mudstone; at 493 m, GSC loc. C-27035, mudstone; at 519 m, GSC loc. C-27036, sandstone; at 555 m, GSC loc. C-27037, mudstone</p>	179.0	630.0
13	<p>Interbedded sandstone and mudstone. Sandstone: mudstone = 3:1. Thin-bedded sandstone units are rare, most are very thin bedded, platy and have dark grey to black laminations. At 634.5 m, GSC loc. C-27038. Ripple marks seen in talus here. At 638 m, GSC loc. C-27039, sandstone</p>	10.0	640.0

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
14	Interbedded sandstone and mudstone; sandstone is commonly thin to medium bedded and blocky. At 655 m, GSC loc. C-27040, sandstone; at 657 m, GSC loc. C-27041, mudstone	33.5	673.5
15	Sandstone: very fine grained to silty, laminar to thin bedded, platy, smooth; medium grey-brown to moderate yellow-brown, weathering dark yellow-orange to moderate yellow-brown; argillaceous, calcareous, moderately indurated, fetid; dark grey-brown laminations. At 674 m, GSC loc. C-27042	13.0	686.5
16	Interbedded sandstone and mudstone, as before. Sandstone:mudstone = 5:1. At 696.5 m, GSC loc. C-27043, mudstone	21.5	708.0
17	Interbedded sandstone and shaly mudstone. Sandstone:shaly mudstone = 1:5. Sandstone units form small peaks and shaly mudstone units form valleys. At 711 m, GSC loc. C-27044, sandstone	78.5	786.5
18	Interbedded sandstone and mudstone. Mudstone: laminar to thin bedded, platy; medium dark grey to grey-brown, weathering medium grey; fetid, calcareous, moderately indurated. Sandstone: very fine to fine grained; very thin to thin bedded, platy; medium dark grey to brownish grey, weathering greyish orange; laminated, calcareous; fetid, micaceous, argillaceous, well indurated. Sandstone: mudstone = 5:1. At 807.5 m, GSC loc. C-27045, sandstone; at 816 m, GSC loc. C-27046, mudstone	61.5	848.0
19	Interbedded silty shale and rare fine-grained sandstone. Silty shale: laminar bedded, papery, platy; dusky yellow-brown, weathering light olive-grey to yellow-grey; moderately poorly indurated, calcareous, silty, considerable mica on bedding planes, rare fish? spines. At 853 m, GSC loc. C-27048. Sandstone: very fine to fine grained, thin bedded, smooth, lenticular; pale yellow-brown, weathering greyish orange to pale yellow-brown; argillaceous, calcareous, micaceous, moderately indurated. At 852.5 m, GSC loc. C-27047. Sandstone:shale = 1:10	17.0	865.0

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
20	Sandstone with minor shale interbeds. Sandstone: very fine to fine grained, very thin to thin bedded, smooth, platy; medium olive-grey, weathering pale yellow-brown; argillaceous, calcareous, moderately indurated; in places dark grey-black, thin wispy laminations. At 866 m, GSC loc. C-27049. Thin inner layers of laminae bedded material are quite micaceous. Peculiar weathering phenomena here, bedding is full of cone-shaped depressions; shale increases upward. At 894 m, GSC loc. C-27050, shale; At 898.5 m, GSC loc. C-27051, sandstone	70.5	925.5
21	Sandstone: very fine grained, very thin to thin bedded, smooth; medium dark brownish grey, weathering light olive-grey; dark grey to black wispy laminations, argillaceous, calcareous, moderately well indurated. At 931.5 m, GSC loc. C-27052	30.5	956.0
22	Interbedded sandstone and mudstone; as in previous units. At 963.5 m, GSC loc. C-27053, mudstone	11.5	967.5
23	Interbedded sandstone and silty mudstone-siltstone. Silty mudstone-siltstone: thin bedded; medium dark grey, weathering pale yellow-brown to blue-grey; well indurated, calcareous, laminated, silty. At 971 m, GSC loc. C-27054, abundant sole markings. Sandstone: very fine grained, thin bedded, smooth; medium dark brownish grey, weathering light olive-grey to pale yellow-orange; well indurated, argillaceous, dark grey to black laminations, calcareous. Sandstone:mudstone-siltstone = 1:1. At 988 m, GSC loc. C-27055; at 1095 m, GSC loc. C-27056, poorly preserved graptolites; at 1102 m, GSC loc. C-27057, graptolites, ceratiocerids; at 1114 m, GSC loc. C-27058, graptolites; at 1134 m, GSC loc. C-27059, graptolites; at 1138 m, GSC loc. C-27060; at 1165 m, GSC loc. C-27061, talus, graptolites, not far from original position; at 1170 m, GSC loc. C-27062, talus, graptolites; at 1190 m, GSC loc. C-27063, graptolites	228.5	1196.0
24	Covered interval; recessive	13.0	1209.0

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
25	Sandstone, interbedded with silty, shaly mudstone. Sandstone: very fine grained, thin to medium bedded, smooth; medium dark grey to dark yellow-brown, weathering greyish orange to pale yellow-brown; well indurated, argillaceous, calcareous, slightly fetid. At 1210 m, GSC loc. C-27064. Shaly, silty mudstone: very thin bedded, smooth; dark grey to brownish black, weathering light yellow-grey; moderately indurated, calcareous, slightly fetid. Mudstone:sandstone = 10:1. At 1211 m, GSC loc. C-27065, graptolites; at 1219 m, GSC loc. C-27066, graptolites	15.0	1224.0
26	Sandstone with rare silty mudstone interbeds; as in unit 25. At 1246 m, bed, approximately 22-30 m thick, of medium-to coarse-grained sandstone, medium grey with dark grey patches, calcareous, well indurated and argillaceous. GSC loc. C-27067; at 1250 m, GSC loc. C-27068 abundant sole marks; at 1257 m, GSC loc. C-27069, sandstone with poorly preserved graptolites*	39.0	1263.0
27	Interbedded sandstone and shaly mudstone as before, but more resistant, cliff former. Sandstone: very fine to fine grained, thin bedded, smooth; dark brownish grey, weathering greyish orange and pale yellow-brown; argillaceous, well indurated, calcareous, slightly fetid, micaceous. At 1272.5 m, GSC loc. C-27070, common graptolite debris. Shaly mudstone: laminar to thin bedded, smooth; dusky yellow-brown, weathering light yellow-grey; silty, sandy, calcareous, slightly fetid, moderately indurated. At 1274 m, GSC loc. C-27071	48.0	1311.0
28	Silty, sandy, shaly mudstone: laminar to very thin bedded, smooth; greyish black to black, weathering medium light grey to light yellow-grey; moderately indurated, calcareous, tiny fossiliferous debris on some bedding planes. At 1316 m, GSC loc. C-27072	20.0	1331.0
29	Broken outcrop, much of unit covered by debris; sandstone perhaps interbedded with mudstone as below; poorly preserved brachiopods seen in the rubble	36.0	1367.0

* This coarse-grained bed may correspond to the Bathurst Island - Stuart Bay contact. However, it is not well developed as in Twilight Creek. Separating the rocks into two formations at this location may not be necessary.

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
30	Sandstone with some light grey weathering to shaly mudstone interbeds. Sandstone: very fine to fine grained, very thin to thin bedded, smooth; medium light grey to light brownish grey, weathering grey-orange to pale yellow-orange; calcareous, argillaceous, moderately well indurated. At 1369 m, GSC loc. C-27073, sandstone. Sandstone:mudstone = 5:1	51.0	1418.0
31	Interbedded sandstone and mudstone. Sandstone: very fine grained, very thin to thin bedded; moderate yellow-brown, weathering dark yellow-orange; slightly calcareous, unit quite recessive. At 1421 m, GSC loc. C-27074, mudstone; at 1421.5 m, GSC loc. C-27075, sandstone	36.0	1454.0
32	Calcareous, silty mudstone and shale with some rare very fine grained beds: laminar to very thin bedded; brownish black and black, weathering light olive-grey to pale yellow-brown and grey-orange; recessive. At 1455 m, GSC loc. C-27076	10.5	1464.5
33	Sandstone and mudstone, interbedded as before	27.0	1491.5
34	Lime mudstone: thin bedded; dark grey-brown, weathering greyish orange to pale yellow-brown; rubbly outcrop, silty, some chert?. At 1492 m, GSC loc. C-27077	1.0	1492.5
35	Sandstone and mudstone interbedded as before, recessive	9.5	1502.0
36	Lime mudstone as before, but with abundant crinoids, rare gastropods. At 1502 m, GSC loc. C-27078	0.5	1502.5
37	Interbedded sandstone and lime mudstone, very rubbly. Sandstone:lime mudstone = 2-3:1	15.5	1518.0
38	Covered interval, probably sandstone	7.5	1525.5
39	Lime mudstone: thin bedded, fairly smooth; medium dark grey, weathering medium light grey to greyish orange; well indurated, silty, slightly fetid. At 1526 m, GSC loc. C-27079	2.0	1527.5

Unit	Lithology	Thickness (metres)	Height Above Base (metres)
40	Interbedded sandstone and rare mudstone. Sandstone: very fine grained, very thin to thin bedded, smooth; medium olive-grey, weathering pale yellow-brown; argillaceous, moderate to well indurated; dolomitic, dark yellow-brown laminations. At 1530 m, GSC loc. C-27080	23.5	1551.0
41	Interbedded sandstone and lime mudstone, as in unit 37. Sandstone:lime mudstone = 1:1. At 1552 m, GSC loc. C-27081	6.0	1557.0
42	Interbedded sandstone and mudstone, as in unit 40; sandstone now calcareous. At 1602 m, GSC loc. C-27082	61.0	1618.0
End of section.			