



**GEOLOGICAL SURVEY
BULLETIN 301**

UPPER CARBONIFEROUS AND PERMIAN STRATIGRAPHY OF THE MONKMAN PASS AND SOUTHERN PINE PASS AREAS, NORTHEASTERN BRITISH COLUMBIA

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APPENDIX - DETAILED DESCRIPTIONS OF MEASURED SECTIONS

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MOUNTAIN CREEK SECTION (Fig. 1, Loc. 1)

Located on east slope of Murray Range, approximately 5 miles (8 km) northwest of Mount Hunter and 5 miles (8 km) east of John Hart Highway; Latitude 55°21'30"N, Longitude 122°29'W; NTS 93-0, 1:250 000 map sheet, Pine Pass; aerial photograph BC 2136:51, north and east of centre, base of section at photo co-ordinates X = +7.0, Y = +6.95, top of section at photo co-ordinates X = +7.3, Y = +5.1. Measured through Permian Belcourt and Fantasque Formations.

TRIASSIC (Sulphur Mountain Fm.)	(Covered)
(disconformity)	
PERMIAN	
Fantasque Fm.	102 feet (31 m)
(disconformity)	
Belcourt Fm.	452 feet (138 m)
(disconformity)	
LOWER CARBONIFEROUS (Prophet Fm.)	

Unit	Lithology	Thickness feet (metres)	Height Above Base feet (metres)
FANTASQUE FORMATION (Permian)			
5	Chert, medium grey, weathers medium to dark grey; medium bedded, irregular wavy bedding surfaces; resistant. Thin sections show very poorly preserved ?spicules and skeletal grains of indeterminate origin	12 (3.7)	102 (31.1)
4	Covered interval	4 (1.2)	90 (27.5)
3	Chert, as in unit 5, and siltstone, fine to coarse grained; rare siliceous shale partings. Thin sections show grains in siltstones are mostly quartz, with rare carbonate and chert (microcrystalline quartz) grains. Bedded chert contains scattered "trapped" dolomite euhedra	45 (13.7)	86 (26.2)

Unit	Lithology	Thickness		Height	
		feet	(metres)	Above Base feet	(metres)
2	Chert, as in unit 5, but mainly dark grey about 60 per cent of unit, in lensing thin to medium beds; interbedded with siltstone, dolomitic, dark grey to black, recessive, occurs as lenses in chert. Also local thin shale partings	26	(7.9)	41	(12.5)
1	Covered interval	15	(4.6)	15	(4.6)
Contact with underlying Belcourt Formation is covered, but is disconformable elsewhere.					
BELCOURT FORMATION (Permian)					
14	Dolomite, very finely crystalline, calcareous, dark grey, weathers light yellowish brown to light grey; thin bedded; resistant. Some beds extremely calcareous; rare thin chert beds	23	(7)	452	(137.9)
13	Dolomite, finely crystalline, calcareous in part, medium to dark grey, weathers light brownish grey; medium bedded; resistant. Thin sections show very minor disseminated quartz silt and suggest an original packstone-wackestone texture. Very minor local black bitumen. Molds of skeletal grains, indeterminate. At 5 to 12 feet (1.5-3.7 m) below top of unit, <i>Yakovlevia</i> sp., <i>Waagenoconcha</i> sp., <i>Linoproductus</i> sp. (GSC loc. C-4548)	40	(12.2)	429	(130.8)
12	Covered interval	6	(1.8)	389	(118.6)

Unit	Lithology	Thickness		Height	
		feet	(metres)	Above Base feet	(metres)
11	Dolomite, very finely crystalline, argillaceous; impure, "dirty"; dark brown; local chert lenses; recessive. At 1 foot (0.3 m) below top of unit, <i>Waagenoconcha</i> sp., <i>Spiriferella</i> sp. (GSC loc. C-4549)	7	(2.1)	383	(116.8)
10	Covered interval	14	(4.3)	376	(114.7)
9	Dolomite, finely crystalline, calcareous, medium brown; recessive	1	(0.31)	362	(110.4)
8	Covered interval	9	(2.7)	361	(110.1)
7	Limestone, wackestone to mudstone, slightly dolomitic, medium grey, weathers light grey; contains thin lensing beds of medium grey chert and partly silicified limestone; medium to thick bedded; resistant. Thin sections of limestone show scattered pelletoid grains and indeterminate skeletal grains	13	(4)	352	(107.4)
6	Dolomite, generally finely crystalline, calcareous, brown, weathering light greyish brown; interbedded with limestone, dolomitic, generally packstone and wackestone, medium grey, weathering light grey; unit is medium to thick bedded. Limestone contains brachiopods, echinoderm and molluscan detritus, and bryozoans, and is generally free of silt-size quartz or clay minerals. Dolomite beds, in comparison, contain minor amounts of disseminated quartz silt, and show local burrow mottling. Interbedding of dolomite and limestone gives a striped appearance to the unit, which is generally resistant. Unit about three quarters dolomite, one quarter limestone. At 20 feet (6.1 m) below top of unit, <i>Neospirifer</i> sp. (GSC loc. C-4552). At 85 feet (25.9 m) below top of unit,				

Unit	Lithology	Thickness		Height	
		feet	(metres)	Above Base feet	(metres)
	<i>Linoproductus</i> sp. (GSC loc. C-4553). At 140 feet (42.7 m) below top of unit, <i>Spiriferella</i> sp., <i>Neospirifer</i> sp., licharewiinid brachiopod (GSC loc. C-4555)	165	(50.3)	339	(103.4)
5	Dolomite, finely crystalline, slightly calcareous, medium greyish brown, weathering same; probably thick- bedded(?) but bedding not obvious, weathers to thin slabs; contains rare lenses of limestone, similar to limestone in unit immediately above. Unit is slightly resistant in top 20 feet (6.1 m), but recessive and partly rubble covered in remainder	50	(15.3)	174	(53.1)
4	Limestone, packstone, medium to coarse grained, dolomitic; dark grey, weathers light yellowish brown; very thick bedded with little obvious bedding; resistant. Basal 17 feet (5.2 m) are dominated by medium-to coarse-grained echinoderm and bryozoan grainstone	22	(6.7)	124	(37.8)
3	Limestone, dolomitic, scattered fine- grained skeletal detritus, some delicate; interbedded with dolomite, finely crystalline, calcareous. Rare thin lenses of dark grey chert replacing limestone, scattered "trapped" dolomite crystals within chert	79	(24.1)	102	(31.1)
2	Limestone, grainstone, coarse grained, light brownish grey, weathers medium brownish grey, much silici- fied fossil debris evident on weathered surfaces; very thick bedded, resistant and cliff- forming. Abundant echinoderm fragments, spar-cemented. Rare 1 to 3 foot (0.3-0.9 m) interbeds of dolomitic limestone, as in unit immediately above	20	(6.1)	23	(7)

Unit	Lithology	Thickness		Height	
		feet	(metres)	Above Base feet	(metres)
1	Limestone, conglomeratic, at top of unit is 4- to 6-inch (10-15.4 cm) interval with abundant, well-rounded chert pebbles and cobbles up to 2.5 inches (7 cm) diameter, with skeletal fragments in matrix. Remainder of unit contains scattered, similar chert pebbles, except basal 1 foot (0.31 m), which is largely conglomerate. Some pebbles are clearly derived from Prophet Formation. Largest pebbles in unit are about 2.5 inches (7 cm) in diameter; many pebbles are under 1 inch (2.6 cm) diameter. Unit has several 2- to 4-inch (5-10 cm) irregular intervals of dark grey chert. Some chert pebbles show drusy quartz cement enveloping exterior. Basal surface shows several feet of relief over a distance of 100 feet (30.5 m) or more along the bed and cuts into underlying uppermost beds of the Prophet Formation. Locally, the unit thickens and contains angular boulders of cherty limestone and dolomite, up to 5 feet (1.5 m) maximum diameter, derived from the Prophet Formation	3	(0.92)	3	(0.92)

PROPHET FORMATION
(Lower Carboniferous)

Limestone, grainstone-packstone, medium to coarse grained, medium grey, weathering light brownish grey; thick bedded; some bands of silicified skeletal debris on weathered surface; resistant, cliff-forming	13	(4)
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WEST SUKUNKA SECTION (Fig. 1, Loc. 2)

Located approximately 6 miles (9.5 km) west of Sukunka River; Latitude 55°04'30"N, Longitude 121°59'W; southwest corner of NTS 93P, 1:250 000 map sheet, Dawson Creek; aerial photo BC 2136:35, east and south of centre, base of section at photo co-ordinates X = +9.3, Y = -1.9, top of section at photo co-ordinates X = +8.8, Y = -1.8. Measured through Upper Carboniferous (Moscovian) Hanington Formation and Permian Belcourt and Fantasque Formations.

TRIASSIC (Sulphur Mountain Fm.)
(disconformity)

PERMIAN

Fantasque Fm. (disconformity)	109 feet	(33 m)
Belcourt Fm. (disconformity)	143 feet	(44 m)

UPPER CARBONIFEROUS

Hanington Fm. (disconformity)	220 feet	(67 m)
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LOWER CARBONIFEROUS (Rundle Group)

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

Contact with overlying siltstone of Sulphur Mountain Formation (Triassic) is sharp.

FANTASQUE FORMATION (Permian)

- 1 Chert, medium to light grey on fresh surfaces, weathers dark grey with rusty patches and orange lichen. In top 20 feet (6.1 m), scattered small void spaces are lined with several generations of almost white, microcrystalline quartz; last generation is drusy, pore-filling quartz. At 29 feet (8.8 m) below top, silicified skeletal limestone, with fine- to medium-grained indeterminate shell fragments, pelletoid grains, and ?intraclasts. Thin sections throughout unit show

Unit	Lithology	Thickness		Height	
		feet	(metres)	Above Base feet	Base (metres)
	microcrystalline to cryptocrystalline quartz with scattered "trapped" dolomite euhedra; also rare spicules, possibly derived from sponges. Formation is very thickly bedded and resistant; could not be adequately sampled or described because of inaccessible cliff. Contact with underlying Belcourt Formation is sharp	109	(33.2)	109	(33.2)
BELCOURT FORMATION (Permian)					
4	Limestone, mudstone, argillaceous in part, about 30 per cent dolomitic; dark grey, weathers yellowish brown to light grey, medium bedded. Scattered detrital quartz silt weathering out in relief (?1-2%), and local, wavy, argillaceous bands. Resistant, cliff-forming	105	(32)	143	(43.6)
3	Limestone, conglomeratic, dark grey, weathering dark grey, one bed. Contains granules and pebbles, up to 2 inches (5 cm) across, of dark grey chert, and pebbles and cobbles of underlying limestone and dolomite. Also fragments of bryozoans and brachiopods within matrix, which consists of a mosaic of fine calcite crystals, dark grey in colour owing to presence of bituminous material. Irregular thickness; locally up to 6 feet (1.8 m), seems to fill fractures or erosional cavities in underlying unit. Larger limestone cobbles are angular, up to 1 foot (30 cm) maximum diameter	4	(1.2)	38	(11.6)

Unit	Lithology	Thickness		Height	
		feet	(metres)	Above Base feet	Base (metres)
2	Dolomite, finely crystalline, moderately calcareous, dark brownish grey, weathers yellowish brown, contains sparse detrital quartz sand; local chert nodules; also has dark grey chert lenses. In thin section, chert shows nodosarid foraminifers, indeterminate skeletal detritus, and rare (?) ooids; medium to thick bedded; resistant. At 15 feet (4.6 m) below top of unit, <i>Neospirifer</i> sp. cf. <i>N. striatoparadoxus</i> (Toula), <i>Paekelmanella</i> sp. (GSC loc. C-44599)	33	(10.1)	34	(10.4)
1	Limestone, conglomeratic, with pebbles and cobbles of chert and limestone set in a matrix of grainstone, including pelletoid grains, brachiopods, and rare ooids. Chert pebbles most abundant at base of unit, where they form a lag deposit. Contact with underlying units is sharp but shows relief of at least 1 foot (0.31 m)	1	(0.31)	1	(0.31)

HANINGTON FORMATION
[lower Moscovian (Middle Pennsylvanian)]

12	Dolomite, finely crystalline, moderately calcareous, medium grey, weathers light grey, thin to medium bedded; interbedded with dolomite, argillaceous, in bands 0.5 to 1 inch (1-2 cm) thick. Non-argillaceous dolomite is very calcareous locally, grading to laminated lime-mudstone; also has sand-size chert grains, and is silicified in patches locally	18	(5.5)	220	(67.1)
11	Covered interval	8	(2.4)	202	(61.6)

Unit	Lithology	Thickness		Height	
		feet	(metres)	Above Base feet	(metres)
10	Limestone, wackestone, very dolomitic, dark grey, weathering medium brownish grey; contains brachiopods, scattered gastropod detritus, is partly silicified, and contains sand-size chert grains; medium-bedded; recessive	14	(4.3)	194	(59.2)
9	Limestone, wackestone, slightly dolomitic with up to ≈ 10 per cent very finely crystalline dolomite, medium brownish grey, weathering light to medium brownish grey; thin-bedded; resistant	10	(3.1)	180	(54.9)
8	Dolomite, very finely to finely crystalline, moderately calcareous, medium brownish grey, weathering same; seems to have lime mudstone or wackestone; thin to medium bedded	13	(4)	170	(51.9)
7	Limestone, packstone/wackestone, variably dolomitic, contains scattered skeletal detritus; rare brachiopods; grey, weathering grey; thin and medium bedded, fairly regularly bedded; resistant. Scattered fine-grained sand-size chert grains. Local minor silicification	35	(10.7)	157	(47.9)
6	Dolomite, calcareous, finely crystalline, grey, weathers light brownish grey, contains local beds of limestone, packstone, with intraclasts, indeterminate skeletal detritus, and pelletoid grains (matrix highly recrystallized to microspar); thick bedded; resistant	22	(6.7)	122	(37.2)

Unit	Lithology	Thickness		Height	
		feet	(metres)	Above Base feet	Base (metres)
5	Dolomite, calcareous, argillaceous, medium brownish grey, weathers light brownish grey, very platy weathering, rare interbeds of pelletoid grain packstone, partly replaced by chert; thin to medium bedded; slightly recessive. Rare brachiopods and corals. Between 16 and 34 feet (4.9-10.7 m) above base of unit, <i>Profusulinella</i> sp.; age, early Moscovian (GSC loc. C-44594)	52	(15.9)	100	(30.5)
4	Limestone, packstone, slightly dolomitic, grey, weathering light grey, contains indeterminate skeletal detritus. Highly recrystallized to microspar. Fusulinacean foraminifers abundant in lowest foot of unit. At 6 to 7 feet (1.8-2.1 m) below top of unit, <i>Profusulinella copiosa</i> Thompson, P. n. sp. (GSC loc. C-4576); age, early Moscovian. At 2 to 4 feet (0.6-1.2 m) below top of unit, <i>Bothrophyllum</i> sp., <i>Neospirifer</i> sp., <i>Linoproductus</i> sp. (GSC loc. C-4577)	7	(2.1)	48	(14.6)
3	Limestone, conglomeratic, with numerous rounded chert pebbles up to 2 inches (5 cm) across; also detrital quartz grains; basal 6 inches to 1 foot (15-30 cm) is chert pebble conglomerate also containing pebbles up to 2 inches (5 cm) across of the underlying limestone. One bed; average relief on base of unit is about 12 to 15 inches (29-38 cm). Chert pebbles at base tend to be concentrated where relief is greatest (?channel). Above, stringers of fine chert pebbles in limestone. Limestone is very coarse grained grainstone with abundant echinoderm and bryozoan detritus, intraclasts and lumps in sparry calcite. Base of unit shows up to 2 feet (0.6 m) of relief locally	4	(1.2)	41	(12.5)

Unit	Lithology	Thickness		Height	
		feet	(metres)	Above Base feet	(metres)
2	Dolomite, finely crystalline, calcareous, medium grey, weathering light brownish grey; medium bedded. Some beds argillaceous, recessive; some beds strongly calcareous, locally coarse-grained skeletal packstone with abundant foraminifers. Dolomite appears to replace skeletal packstone/wackestone. At 0.5 feet (0.2 m) above base of unit, <i>?Bothrophyllum</i> sp. (GSC loc. 44590); in lower 5 feet (1.5 m) of unit, <i>Profusulinella</i> sp. (GSC loc. C-44591); age, early Moscovian	12	(3.7)	37	(11.3)
1	Dolomite, very finely crystalline, variably calcareous, slightly argillaceous, medium brownish grey, weathering light yellowish grey; thin to medium bedded; some beds are very dolomitic limestone, probably skeletal wackestones with echinoderm detritus. Less calcareous beds are thick bedded and slightly resistant; more calcareous beds are thinner bedded and slightly recessive. At 4 to 7 feet (1.2-2.1 m) below top of unit, <i>Echinoconchus</i> sp., <i>Neospirifer</i> sp., <i>?Amplexizaphrentis</i> sp. (GSC loc. C-4575)	25	(7.6)	25	(7.6)

No further exposure immediately below; contact with underlying Besa River Formation is covered. Highest outcrop of Besa River Formation is 97 feet (29.6 m) below base of unit 1, Hanington Formation, and consists of mudstone, silty, dark grey, weathering orange-brown, noncalcareous, recessive. Most of 97-foot (29.6 m) covered interval probably is underlain by Besa River Formation.

HOOK CREEK SECTION (Fig. 1, Loc. 3)

Located approximately 5 miles (8 km) southeast of Hook Lake and 1 mile (1.5 km) east of Hook Creek; Latitude 54°48'N, Longitude 121°19'W; NTS 93I 1:250 000 map sheet, Monkman Pass; aerial photograph BC 2016:105, west and slightly north of centre, section at photo co-ordinates X = -6.5, Y = +1.7. Measured through basal Belcourt Formation.

TRIASSIC (Sulphur Mountain Fm.)
(disconformity)

PERMIAN
Belcourt Fm. (basal conglomerate) 11 feet (3.4 m)
(disconformity)

LOWER CARBONIFEROUS (Rundle Group)

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

Contact with overlying basal conglomerate of Sulphur Mountain Formation is sharp.

BELCOURT FORMATION (Permian)

- 1 Conglomerate, pebbles, cobbles, granules and sand consisting of lime-mudstone, wackestone, packstone, and chert, in sparry calcite matrix. Pebbles are subangular to sub-rounded, contain echinoderm detritus and ostracodes, and appear to have been derived from the underlying Rundle Group. Most pebbles less than 1 cm; largest limestone pebble observed is 7 cm. Some limestone pebbles are rich in foraminifers. Over 90 per cent of pebbles appear to be limestone; remainder are chert. Reworked Early Carboniferous (Mississippian) corals also present. Unit is thick bedded, and varies in thickness along strike from a few feet to a maximum of 11 feet (3.4 m). Upper contact is sharp and undulating, with little relief. Unit contains distinctive, partly silicified carbonate nodules which are

Unit	Lithology	Thickness		Height	
		feet	(metres)	Above Base feet	(metres)
	present in outcrop in beds of the underlying Rundle Group, 100 to 115 feet (30.5-35.1 m) below base of this unit. At 6 feet (1.8 m) below top of unit, pebbles containing <i>Zaphriphyllum</i> sp. and <i>Lithostrotion</i> (<i>Siphonodendron</i>) sp. (GSC loc. C-7323)	11	(3.4)	11	(3.4)

RUNDLE GROUP
(Lower Carboniferous)

Limestone, wackestone, with foraminifers, ostracodes, indeterminate skeletal material, and calcispheres; also packstone with bryozoans and very abundant foraminifers; dark grey, weathering light grey; thick bedded; resistant. Local thin, lensing bands of chert (1-5 cm) in upper 23 feet (7 m)	82	(25)
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FELLERS CREEK SECTION (Fig. 1, Loc. 4)

Located approximately 5 miles (8 km) northwest of Bone Mountain, and 1 mile (1.5 km) west of Fellers Creek; Latitude 54°42'30"N, Longitude 120°57'30"W; NTS 93I, 1:250 000 map sheet, Monkman Pass; aerial photograph BC 2017:12, north and east of centre, base of section at photo co-ordinates X = +1.9, Y = +3.3, top of section at photo co-ordinates X = +1.65, Y = +3.3. Measured through Permian Belcourt and ?Mowitch Formations.

TRIASSIC (Sulphur Mountain Fm.)
(disconformity)

PERMIAN

?Mowitch Fm. (disconformity)	3 feet	(0.9 m)
Belcourt Fm. (disconformity)	167 feet	(51 m)

LOWER CARBONIFEROUS (Rundle Group)

Unit	Lithology	Thickness feet (metres)	Height Above Base feet (metres)
Contact with overlying siltstone of Sulphur Mountain Formation is covered.			
?MOWITCH FORMATION (Permian)			
Formational assignment is tentative; units may represent remaining part of eroded Ranger Canyon Formation (Permian).			
2	Sandstone, fine grained, locally medium grained, quartzose, weathers orange-brown; contains distinctive nodules of dark grey chert up to 2 inches (5 cm) thick. Sandstone grains are subrounded; siliceous cement. Upper contact covered; lower contact sharp and irregular	0.5 (0.15)	3 (0.9)
1	Sandstone, very fine to fine grained, light brown, weathers medium to dark grey with brown patches; grains are subangular, mainly siliceous cement showing interlocking, pressure-welded quartz grains; local carbonate cement except basal 0.5 foot (15 cm), which is limestone, skeletal packstone, with scattered floating quartz grains. Lower contact sharp; this unit rests on 4 inches to 1 foot (10-30 cm) thick lensing chert bed of underlying unit	2.5 (0.7)	2.5 (0.7)

Unit	Lithology	Thickness feet (metres)		Height Above Base feet (metres)	
BELCOURT FORMATION (Permian)					
7	Limestone, grainstone/packstone, partly silicified, dolomitic, dark grey, weathers light grey. About half of unit consists of partly silicified limestone in lensing beds up to 2 feet (0.6 m) thick; remainder is thinner bedded, chert-free limestone in medium to thick beds. Limestones contain ostracodes, and echinoderm and mollusc detritus	31	(9.5)	167	(50.9)
6	Limestone, skeletal packstone, very coarse grained in part, locally dolomitic, grading to calcareous dolomite in some beds; grey, weathering light grey; medium to thick bedded; resistant. Very coarse grained beds are dominantly echinoderm ossicles, locally echinoderm grainstones. Matrix contains bitumen locally. Several 4-inch to 1-foot (10-28 cm) beds of dark grey chert. At 18 feet (5.5 m) below top of unit, " <i>Thysanophyllum</i> " sp. and <i>Stylastraea</i> sp. (GSC loc. C-7324)	22	(6.7)	136	(41.5)
5	Largely covered interval, with scattered exposures of limestone beds, including oolitic grainstone, medium grained, well sorted, cemented with sparry calcite; and echinoderm grainstone, coarse grained. Oolitic grainstone occupies top 3 feet (0.9 m) of unit. Local cherty, skeletal limestone (?packstone) also present. Medium to dark grey, weathering light grey; recessive. Fossil collections: GSC loc. C-7325 [approximately 22 ft (6.7 m) below top of unit] - <i>Durhamina</i> sp. GSC loc. C-7326 [20 ft (6.1 m) below top of unit] - <i>Heintzella</i> sp. GSC loc. C-7327 [talus, 20 ft (6.1 m) below top of unit] - cf. <i>Durhamina</i> sp.	24	(7.3)	114	(34.8)

Unit	Lithology	Thickness		Height	
		feet	(metres)	Above Base feet	(metres)
4	Dolomite, very finely crystalline, containing abundant chert nodules and layers of dark grey chert pebbles; light grey, weathers light yellowish brown, resistant	5	(1.5)	90	(27.5)
3	Partly covered interval, with scattered exposures of echinoderm and oolitic grainstone and packstone, and local cherty, skeletal ?packstone. Medium to dark grey, weathering light grey, recessive. Resembles unit 5. Medium bedded	36	(11)	85	(25.9)
2	Limestone, grainstone/packstone, medium to coarse grained, has ooids and fusulinacean foraminifers; pelletoid grains, grey, weathering light grey; thick bedded. <i>Pseudofusulina (Dairina)</i> n. sp. at 5 feet (1.5 m) and 10 feet (3.1 m) below top of unit (GSC loc. C-7328 and C-7329, respectively); age, early to middle Asselian (=early Wolfcampian)	30	(9.2)	49	(14.9)
1	Limestone, conglomeratic, contains abundant dark grey chert pebbles and reworked horn corals. Chert grains and pebbles from coarse sand size to 10 cm across, subangular. Scattered limestone pebbles also present, well rounded, with ?Lower Carboniferous (?Mississippian) foraminifers and corals. At 7 to 10 feet (2-3 m) below top of unit, 3-foot (0.9 m) sub-unit of limestone, chert-free, fine-grained skeletal packstone. Unit weathers light grey, thick bedded, resistant. Sharp contact with underlying unit. At 2 to 17 feet (0.6-5.2 m) below top of unit, in pebbles, <i>Vesiculophyllum</i> sp., ? <i>Zaphriphyllum</i> sp., and ? <i>Ektasophyllum</i> sp. (GSC loc. C-7331)	19	(5.8)	19	(5.8)

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

RUNDLE GROUP
(Lower Carboniferous)

Limestone, mudstone, very pure, grey, weathering light brownish grey, medium to thick bedded, resistant. Thin sections show scattered pelletoid grains and ostracodes. Local echinoderm ossicles; some beds toward base of unit are skeletal packstone

48 (14.6)

WAPITI LAKE SECTION (Fig. 1, Loc. 5)

Located approximately 1.5 miles (2.5 km) southeast of east end of Wapiti Lake; Latitude 54°34'N, Longitude 120°43'30"W; NTS 93I, 1:250 000 map sheet, Monkman Pass; aerial photograph BC 2017:19, south and slightly east of centre, base of section at photo co-ordinates X = +0.7, Y = -5.85, top of section at photo co-ordinates X = +0.5, Y = -5.85. Measured through Permian Belcourt and Ranger Canyon Formations.

TRIASSIC (Sulphur Mountain Fm.)
(disconformity)

PERMIAN

Ranger Canyon Fm. (disconformity)	6 feet	(1.8 m)
Belcourt Fm. (disconformity)	95 feet	(29 m)

LOWER CARBONIFEROUS (Rundle Group)

Unit	Lithology	Thickness feet (metres)		Height Above Base feet (metres)	
Contact with overlying beds, probably siltstone of Sulphur Mountain Formation (Triassic), is covered.					
RANGER CANYON FORMATION (Permian)					
1	Chert, light to medium grey, weathers light grey and white, contains local irregular lenses of dolomite indicating incomplete silicification. Dolomite contains molds of echinoderm columnals, and indeterminate skeletal material. One bed, resistant	6	(1.8)	6	(1.8)
Contact with underlying Belcourt Formation is covered.					
BELCOURT FORMATION (Permian)					
3	Partly covered interval, with rubble of dolomite, finely crystalline, locally medium crystalline, yellowish brown, weathering light brownish grey; also chert, light grey, at least partly replacing ?skeletal and pelletoid grain wackestone	45	(13.7)	95	(29)
2	Dolomite, finely crystalline, locally medium crystalline, light brownish grey, shows leached molds of fusulinaceans; contains chert nodules and beds with fusulinacean foraminifers; dolomite contains large fasciculate colonial corals of the genus <i>Fomichevella</i> at 5 feet (1.5 m) below top of unit, also <i>Schwagerina emaciata</i> (Beede); age, middle to late Asselian (late Wolfcampian or possibly early Leonardian) (GSC loc. C-7426)	38	(11.6)	50	(15.3)

Unit	Lithology	Thickness		Height	
		feet	(metres)	Above Base feet	(metres)
1	Dolomite, conglomeratic, calcareous, with loosely packed large to small granules and pebbles (up to 4 cm across) mainly of chert with minor carbonate, in a calcareous dolomite matrix. Pebbles and granules are well rounded to subrounded; chert is dark grey or creamy white. Granules and pebbles are concentrated in stringers and lenses within host dolomite	12	(3.7)	12	(3.7)
Contact with underlying Rundle Group is covered.					

MOUNT BECKER SECTION (Fig. 1, Loc. 6)

Located approximately 1 mile (1.5 km) southwest of Mount Becker; Latitude 54°31'30"N, Longitude 120°39'W; NTS 93I, 1:250 000 map sheet, Monkman Pass; aerial photograph BC 2017:23, slightly east and north of centre, base of section at photo co-ordinates X = +0.55, Y = +0.8, top of section at photo co-ordinates X = +0.4, Y = +0.9. Measured through Permian Belcourt, Ranger Canyon, and Mowitch Formations.

TRIASSIC (Sulphur Mountain Fm.) (disconformity)

PERMIAN

Mowitch Fm.	9 feet	(2.7 m)
Ranger Canyon Fm. (disconformity)	20 feet	(6 m)
Belcourt Fm. (disconformity)	98 feet	(30 m)

LOWER CARBONIFEROUS (Rundle Group)

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

?BASAL SULPHUR MOUNTAIN FORMATION
(Triassic)

- | | | | | | |
|---|--|---|-------|---|-------|
| 1 | Sandstone, medium-grained, quartzose, subangular grains partly enveloped by phosphate, chert, and ?limonite. Phosphate nodules are up to 6 inches (15 cm) across. Lensing bed, weathers dark grey. Basal contact sharp. Unit is tentatively assigned to Sulphur Mountain Formation | 1 | (0.3) | 1 | (0.3) |
|---|--|---|-------|---|-------|

MOWITCH FORMATION
(Permian)

- | | | | | | |
|---|--|---|-------|---|-------|
| 1 | Sandstone, medium grained, quartzose, well cemented, thick bedded and crossbedded (small scale) in lower 5 feet (1.5 m); weathers grey; resistant. In thin section, a tightly interlocking, silica-cemented mosaic of quartz grains, subrounded, and about 5 to 10 per cent of chert grains, slightly larger and slightly better rounded than quartz grains. Lower contact gradational | 9 | (2.7) | 9 | (2.7) |
|---|--|---|-------|---|-------|

RANGER CANYON FORMATION
(Permian)

- | | | | | | |
|---|---|----|-------|----|-------|
| 2 | Chert, light grey, weathering white to light grey, in irregular, medium to thick beds, thin sections show spicules, pelletoid grains, and ooids (rare) replaced by chert. Interbeds of sandstone, fine grained, light brown, rusty weathering, partly silicified, slightly calcareous, thin to medium bedded and making up 30 per cent of top 9 feet (2.7 m) of unit but only about 10 per cent of lower 9 feet (2.7 m) | 18 | (5.5) | 20 | (6.1) |
|---|---|----|-------|----|-------|

Unit	Lithology	Thickness		Height	
		feet	(metres)	Above Base feet	(metres)
1	Conglomerate, chert pebbles and phosphate pebbles (?or nodules) up to 2 inches (5 cm) across, and sandstone, generally fine grained, irregularly silicified, grains subangular, closely packed, well cemented. One bed, lensing in thickness along strike. Sharp, irregular lower contact	2	(0.6)	2	(0.6)
BELCOURT FORMATION (Permian)					
5	Dolomite, finely to medium crystalline, light brown, weathering light brown, thick bedded, resistant. Some beds calcareous, containing pelletoid grains	26	(7.9)	98	(29.9)
4	Dolomite, finely crystalline, light grey to grey, weathering brown, medium to thick bedded; nodular beds of irregularly silicified dolomite and grey chert 2 to 8 inches (5-20 cm) thick, resistant. Dolomite contains scattered silicified echinoderm and bryozoan detritus, and delicate shells, possibly ostracodes. Chert contains scattered dolomite euhedra	14	(4.3)	72	(22)
3	Dolomite, finely crystalline, locally medium crystalline, vuggy, light brown, weathering same, slightly recessive. At 7 feet (2.1 m) below top of unit, <i>Fomichevella</i> sp. (GSC loc. C-7378)	26	(7.9)	58	(17.7)

Unit	Lithology	Thickness		Height	
		feet	(metres)	Above Base feet	(metres)
2	Dolomite, very finely to finely crystalline, grey, weathering light grey; medium to thick bedded; resistant. Contains small irregular masses of light grey to grey chert. At 8 feet (2.4 m) below top of unit a 0.5 foot (15 cm) bed of dolomite occurs with small sub-rounded chert pebbles, very similar to those in basal unit of Belcourt Formation	24	(7.3)	32	(9.8)
1	Dolomite, very finely crystalline, with scattered subrounded grey to dark grey chert pebbles "floating" in dolomite, in bands up to 0.5 foot (15 cm) thick. Some pebbles are triangular in cross-section, dreikanter-like. Lower contact of unit sharp and regular	8	(2.4)	8	(2.4)

RUNDLE GROUP
(Lower Carboniferous)

Dolomite, finely crystalline, brownish grey, weathering brownish grey, porous with intercrystalline and pinpoint to pea-size vuggy porosity; sucrosic. Some vugs represent leached skeletal fragments including echinoderm detritus; thin to thick bedded; slightly recessive	164	(50)
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BELCOURT CREEK SECTION (Fig. 1, Loc. 7)

Located approximately 4 miles (6.5 km) east-northeast of Muinok Mountain; Latitude 54°22'N, Longitude 120°30'W: NTS 93I, 1:250 000 map sheet, Monkman Pass; aerial photograph BC 2016:77, south and west of centre, base of section at photo co-ordinates X = -5.75, Y = -7.1, top of section at photo co-ordinates X = -5.9, Y = -7.1. Measured through Permian, Belcourt and Mowitch Formations.

TRIASSIC (Sulphur Mountain Fm.)
(disconformity)

PERMIAN

Mowitch Fm.	46 feet	(14 m)
(disconformity)		
Belcourt Fm.	34 feet	(10 m)
(disconformity)		

LOWER CARBONIFEROUS (Rundle Group)

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

Contact with overlying beds, probably siltstone of Sulphur Mountain (Triassic), is covered

MOWITCH FORMATION
(Permian)

- 3 Sandstone, fine to medium grained, light brown, quartzose, but chert sand, granules, and rare pebbles also present, and scattered green ?glaucinite grains. Subrounded, well sorted, mature. Scattered silicified and partly phosphatized lamellar shell fragments; local phosphate patches with red coloured oxidation rims, probably pyrite. Partly friable and soft, but mainly resistant and thick bedded

12	(3.7)	46	(14)
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Unit	Lithology	Thickness		Height	
		feet	(metres)	Above Base feet	(metres)
2	Chert, light grey and almost white, weathering white to light grey, mainly rubble covered with only local exposures; possible interbeds of quartzose sandstone similar to overlying unit. Recessive. Some chert exhibits "zebra" texture, with bands of alternating white and dark grey chert. In thin section, chert is largely microcrystalline quartz, locally with drusy quartz crystals lining delicate vugs	18	(5.5)	34	(10.4)
1	Sandstone, fine to medium grained, quartzose, friable, light brown, weathering same; medium to thick bedded. In thin section, tightly interlocking mosaic of quartz grains, subangular, and 5-10 per cent detrital chert grains. Uppermost 9 feet (2.7 m) of unit poorly indurated and resistant. Basal 4 to 6 inches (10-15 cm) of unit comprise lensing bed of chert pebble conglomerate with dark and light grey subrounded chert pebbles up to 10 cm across in a matrix of medium-grained quartz sand. Matrix partly phosphatized and silicified; "chert" consists, in part, of drusy, microcrystalline to finely crystalline quartz forming a colloform texture locally. Chert in matrix shows some very poorly preserved ?foraminifers. Both basal contact and upper contact are sharp	16	(4.9)	16	(4.9)

Unit	Lithology	Thickness		Height	
		feet	(metres)	Above Base feet	(metres)
BELCOURT FORMATION (Permian)					
4	Chert, light grey to brownish grey, replacing dolomite and making up about 80 per cent of unit; and dolomite, finely crystalline, brown to light greyish brown, weathering light yellowish brown; unit is thin to thick bedded; resistant. Chert contains bryozoans, poorly preserved delicate skeletal material, including fusulinacean foraminifers and spicules; seems to be a total replacement of a former skeletal wackestone. At 5 feet (1.5 m) below top of unit, <i>Schwagerina</i> sp.; age, Late Sakmarian (late Wolfcampian to ?earliest Leonardian) (GSC loc. C-7385)	10	(30.5)	34	(10.4)
3	Dolomite, finely crystalline, light brown to brown; lower 4 feet (1.2 m) of unit contain lenses of chert, light grey, with foraminifers and other skeletal grains poorly preserved; basal 1 foot (0.3 m) of unit is sandstone, quartzose, cherty, fine to medium grained, with 2 to 5 cm of chert granules and pebbles at base. Chert appears to replace former skeletal wackestone; preservation of carbonate textures is poor. Unit is resistant	5	(1.5)	24	(7.3)
2	Dolomite, slightly calcareous, medium crystalline, light yellowish brown, weathering same; one bed, resistant. Contains abundant leached fusulinacean foraminifers; colonial corals in upper 1 foot (0.3 m) of unit, colonies up to 2 feet (0.6 m) wide and almost 0.5 foot (15 cm) in thickness. At 0-1 foot (0-0.3 m) below top of unit, <i>Durhamina</i> sp. (GSC loc. C-7386)	3	(0.9)	19	(5.8)

Unit	Lithology	Thickness feet (metres)	Height Above base feet (metres)
1	<p>Dolomite, finely crystalline, light grey to grey, medium bedded; upper half of unit contains nodules and thin beds of light grey to grey chert, with foraminifers, bryozoans, and indeterminate skeletal debris. Chert appears to replace coarse-grained skeletal packstone. Numerous colonial corals and abundant fusulinaceans in chert. Basal 8 to 18 inches (20-45 cm) consist of lensing bed of conglomerate, brown and dark grey chert granules and pebbles up to 2 cm across, in calcareous dolomite matrix. Well-rounded granules and pebbles, most less than 1 cm in size. Pebbles contain ?Lower Carboniferous foraminifers. No carbonate pebbles or granules seen; all are chert. Unit slightly recessive; lower contact (at base of conglomerate) is sharp. Fossil collections:</p> <p>GSC loc. C-7387 [0-1 ft (0-0.3 m) below top of unit]: <i>Schwagerina</i> sp. cf. <i>S. sulcata</i> (Korzhenevskii)</p> <p>GSC loc. C-7388 [4 ft (1.2 m) below top of unit]: <i>S. rapsonae</i> McGugan</p> <p>GSC loc. C-7389 [8 ft (2.4 m) below top of unit]: <i>Fomichevella</i> sp.</p> <p>GSC loc. C-7390 [10 ft (3.1 m) below top of unit]: <i>Heintzella</i> sp.</p> <p>GSC loc. C-7391 [12 ft (3.7 m) below top of unit]: <i>Fomichevella</i> sp.</p> <p>GSC loc. C-7392 [14 ft (4.3 m) below top of unit]: <i>Fomichevella</i> sp.</p> <p>GSC loc. C-7393 [rubble at 8 ft (2.4 m) below top of unit]: <i>Schwagerina</i> sp. cf. <i>S. dispansa</i> Ross</p> <p>Age - Early Sakmarian (Wolfcampian)</p>	16 (4.9)	16 (4.9)

Unit	Lithology	Thickness		Height	
		feet	(metres)	Above Base feet	(metres)
RUNDLE GROUP (Lower Carboniferous)					
	Dolomite, medium to coarsely crystalline, calcareous, light brown, weathers light yellowish brown, friable, porous, scattered small vugs (pin-head to pea-size), slight inter-crystalline porosity	4	(1.2)		
	Dolomite, finely to medium crystalline, light brownish grey, weathering light yellowish grey, resistant; sucrosic with pin-head to pea-size vugs and good intercrystalline porosity; thick bedded; numerous molds of echinoderm ossicles. Interbeds of microcrystalline to very finely crystalline, dense, non-porous dolomite make up about 15 per cent of unit	37	(11.3)		

MOUNT HANINGTON SECTION (Fig. 1, Loc. 8)

Located on ridge west of Mount Hanington, approximately 1.5 miles (2.5 km) north of Jarvis Lakes; Latitude 54°07'N, Longitude 120°12'30"W; southeastern corner of NTS 93I, 1:250 000 map sheet, Monkman Pass; aerial photograph BC 2124:12, west and north of centre, base of section at photo co-ordinates X = -7.95, Y = +4.1, top of section at photo co-ordinates X = -8.2, Y = +4.2. Measured through Upper Carboniferous Hanington Formation and Permian Belcourt and Mowitch Formations.

TRIASSIC (Sulphur Mountain Fm.)
(disconformity)

PERMIAN

Mowitch Fm.	71 feet (22 m)
(disconformity)	
Belcourt Fm.	12.5 feet (3.8 m)
(disconformity)	

UPPER CARBONIFEROUS

Hanington Fm.	17 feet (5 m)
(disconformity)	

LOWER CARBONIFEROUS (Rundle Group)

Unit	Lithology	Thickness feet (metres)	Height Above Base feet (metres)
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Contact with overlying beds, probably siltstone of Sulphur Mountain Formation (Triassic), is covered.

MOWITCH FORMATION
(Permian)

- 2 Sandstone, fine grained, locally very fine grained, quartzose, light brownish grey, weathers grey to dark grey with much green and grey lichen; medium to thick bedded; resistant. In thin section, well cemented, well sorted, subangular; contains a few per cent of chert grains, 1 per cent of glauconite; scattered grains of phosphate (?collophane) and local phosphatic

Unit	Lithology	Thickness		Height	
		feet	(metres)	Above Base feet	Base (metres)
	patches, especially in basal 11 feet (3.6 m) of unit, where phosphate grains and phosphatized fish or shell fragments make up about 20 per cent of individual thin sections. Phosphate patches are mainly infillings of intergranular porosity	69	(22.1)	71	(21.7)
1	Sandstone, fine grained, quartzose, and conglomeratic with well-rounded chert pebbles; also phosphate (?collophane) grains. One bed, partly silicified; chert, in non-silicified parts, ranges from coarse sand size to granules and fine pebbles; maximum pebble size observed is 7 cm across. Chert pebbles contain bryozoans and indeterminate skeletal fragments. Upper and lower contacts are sharp; unit slightly recessive. Basal conglomerate of Mowitch Formation	2	(0.6)	2	(0.6)
BELCOURT FORMATION (Permian)					
3	Dolomite, finely to coarsely crystalline, calcareous, light brown, weathers light yellowish brown, thick bedded, resistant. Basal foot (0.3 m) is mainly brownish grey chert; contains some indeterminate skeletal grains	7	(2.1)	12.5	(3.8)
2	Limestone, 10 per cent dolomitic, grey, weathering light grey, thin bedded, resistant; skeletal ?packstone or wackestone, highly recrystallized to microspar; brachiopod and echinoderm detritus; about 1 per cent detrital chert and quartz grains	4	(1.2)	5.5	(1.7)

Unit	Lithology	Thickness		Height	
		feet	(metres)	Above Base feet	(metres)
1	Limestone, dolomitic, conglomeratic, containing well-rounded grey to dark grey chert pebbles, up to 1 cm across, and containing ?Lower Carboniferous foraminifers, most abundant in basal foot. Upper part of unit mostly limestone, ?packstone, partly replaced by dolomite, contains fusulinacean foraminifers. Sharp contact at base; lower surface wavy, with 0.5 foot (15 cm) of relief. In top foot (0.3 m) of unit: <i>Schwagerina plicatissima</i> (Rauzer), <i>Schubertella?</i> sp., <i>Pseudofusulinella</i> sp., <i>Staffella?</i> sp.; age, Late Sakmarian (latest Wolfcampian or early Leonardian) (GSC loc. C-7415)	1.5	(0.5)	1.5	(0.5)

HANINGTON FORMATION (TYPE SECTION)
[lower Moscovian (Middle Pennsylvanian)]

- 2 Limestone, dolomitic, locally grading to calcareous dolomite, brownish grey, weathering same, medium to thick bedded, resistant. Generally skeletal wackestone and packstone with very abundant lime mud, foraminifers, indeterminate skeletal material, and pelletoid grains. Many single crystals of calcite apparently filling leached porosity. Lower half of unit is more dolomitic (30%) than upper half. Scattered chert nodules, dark grey to black, with poorly preserved skeletal wackestone texture. At 3 feet (0.9 m) below top of unit, 0.5 foot (15 cm) zone of chert occurs, dark grey, wavy, irregular, replacing limestone. Scattered chert nodules occur below. Basal 6 to 12 inches (15-30 cm) of unit contain chert nodules, rusty weathering, 1 to 2 feet (0.3-0.6 m) in plane of bedding, 2 to 5 cm thick.

Unit	Lithology	Thickness		Height	
		feet	(metres)	Above Base feet	(metres)
	<p>Fauna: at 1 to 2 feet (0.3-0.6 m) and 3 to 4 feet (0.9-1.2 m) below top: <i>Profusulinella</i> sp., small, immature, rare; age, early Moscovian, probably Vereyan (GSC locs. C-44553, C-44555). At 4 to 5 feet (1.2-1.5 m) below top: <i>Profusulinella?</i> sp., age as in GSC loc. C-44553 (GSC loc. C-44556). At 8 to 9 feet (2.4-2.7 m) below top: <i>Profusulinella</i> sp. cf. <i>P. copiosa</i> Thompson, age as in GSC loc. C-44553 (GSC loc. C44560). At 10 feet (3 m) below top: <i>Profusulinella?</i> sp., silicified specimens, age as in GSC loc C-44553 (GSC loc. C-44562)</p>	10.5	(3.2)	17	(5.2)
1	<p>Limestone, predominantly skeletal packstone or wackestone, with foraminifers, molluscan detritus, ostracodes, very minor amounts of echinoderm detritus, scattered calcispheres. At 2.5 to 5.5 feet (0.8-1.7 m) below top of unit, the ?hydrozoan <i>Palaeoaplysina</i> sp. occurs, also <i>Tubiphytes</i>, in skeletal wackestone with very abundant Moscovian foraminifers. Bedding and weathering character as in upper unit. A sediment-filled "veinlet" occurs at 3 inches (5 cm) below top of unit; the veinlet is made up of small chert pebbles in a skeletal packstone matrix, within which Permian fusulinacean foraminifers occur (see GSC loc. C-44563, below). Chert pebbles contain ostracodes, pelletoid grains, and small foraminifers, and are subrounded. At 3 feet (0.9 m) below top of unit, there is a light grey lens of chert, approximately 12 cm thick, replacing skeletal wackestone, including echinoderm detritus and indeterminate skeletal debris. In thin section, grains are seen to be</p>				

Unit	Lithology	Thickness		Height	
		feet	(metres)	Above Base	(metres)
	cryptocrystalline quartz (chert), whereas matrix is microcrystalline quartz, in part pseudomorphing original carbonate cement fabric. Basal bed of unit consists of partly dolomitized skeletal packstone/wackestone with echinoderm detritus, pelletoid grains and indeterminate skeletal material, all in sharp contact with underlying beds of Rundle Group. Scattered chert granules and pebbles in basal bed of Hanington, but basal conglomerate is lacking. Lower contact sharp.				
	Fauna: at 10.75 feet (3.3 m) below top of formation: <i>Profusulinella</i> sp. cf. <i>P. copiosa</i> Thompson; also sediment-filled "veinlet" with <i>Schwagerina</i> sp. cf. <i>S. emaciata</i> Beede; age, early Moscovian, probably Vereyan, except "veinlet", which is Early Permian (Asselian?) (GSC loc. C-44563). At 11 feet (3.6 m) below top of formation: <i>Bothrophyllum</i> sp., <i>Kleopatrina</i> (<i>Porfirievella</i>) sp., <i>Profusulinella</i> sp. cf. <i>P. walnutensis</i> Ross and Sabins, <i>Eoschubertella</i> n. sp.; age, early Moscovian (GSC loc. C-7416). At 11.5 feet (3.5 m) below top of formation: <i>Kleopatrina</i> (<i>Porfirievella</i>) sp. GSC loc. C-44564). At 12 to 13 feet (3.7-4 m) below top of formation: <i>Profusulinella</i> sp.; age, early Moscovian, probably Vereyan (GSC loc. C-44565). At 13.5 feet (4.2 m) below top of formation: <i>Profusulinella</i> sp. cf. <i>P. walnutensis</i> Ross and Sabins, <i>Pseudoendothyra</i> sp. cf. <i>P. bradyi</i> (Möller); age, early Moscovian (GSC loc. C-7417). At 13 to 14 feet (4-4.3 m) below top of formation (GSC loc. C-44567), 13.5 feet (4.2 m) below top of formation (GSC loc. C-44568), and 15 to 16 feet (4.6-4.9 m) below				

Unit	Lithology	Thickness		Height	
		feet	(metres)	Above Base feet	(metres)
	top of formation (GSC loc. C-44570): microfauna and age as in GSC loc. C-44565 (<i>Profusulinella</i> sp., early Moscovian, probably Vereyan), <i>Kleopatrina</i> (<i>Porfirievella</i>) sp. also present at GSC loc. C-44568	6.5	(2)	6.5	(2)
RUNDLE GROUP (Lower Carboniferous)					
	Dolomite, finely to medium crystal- line, light greyish brown in lower half, and medium grey in upper half, weathers light yellowish brown; medium to thick bedded; resistant. Contains scattered masses of white, coarsely crystalline calcite up to 0.5 foot (15 cm) across	19	(5.8)		
	Dolomite, finely crystalline, sucrosic, porous, with good intercrystalline porosity; light brown to brown, weathers light yellowish grey; medium to thick bedded; recessive; partly rubble. Contains lithostro- tionid corals, <i>Syringopora</i> , and horn corals [talus in top 5 feet (1.5 m) of unit], GSC loc. C-7418	48	(14.6)		