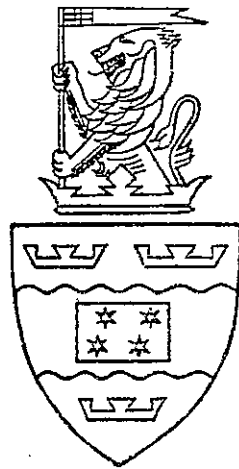


VICTORIA
UNIVERSITY WELLINGTON



**STRATIGRAPHIC SECTIONS OF THE BEACON
SUPERGROUP
(DEVONIAN AND OLDER(?) TO JURASSIC)
IN SOUTH VICTORIA LAND**

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**N.Z. ANTARCTIC RESEARCH PROGRAMME
(WORKING GROUP IN GEOLOGY)**

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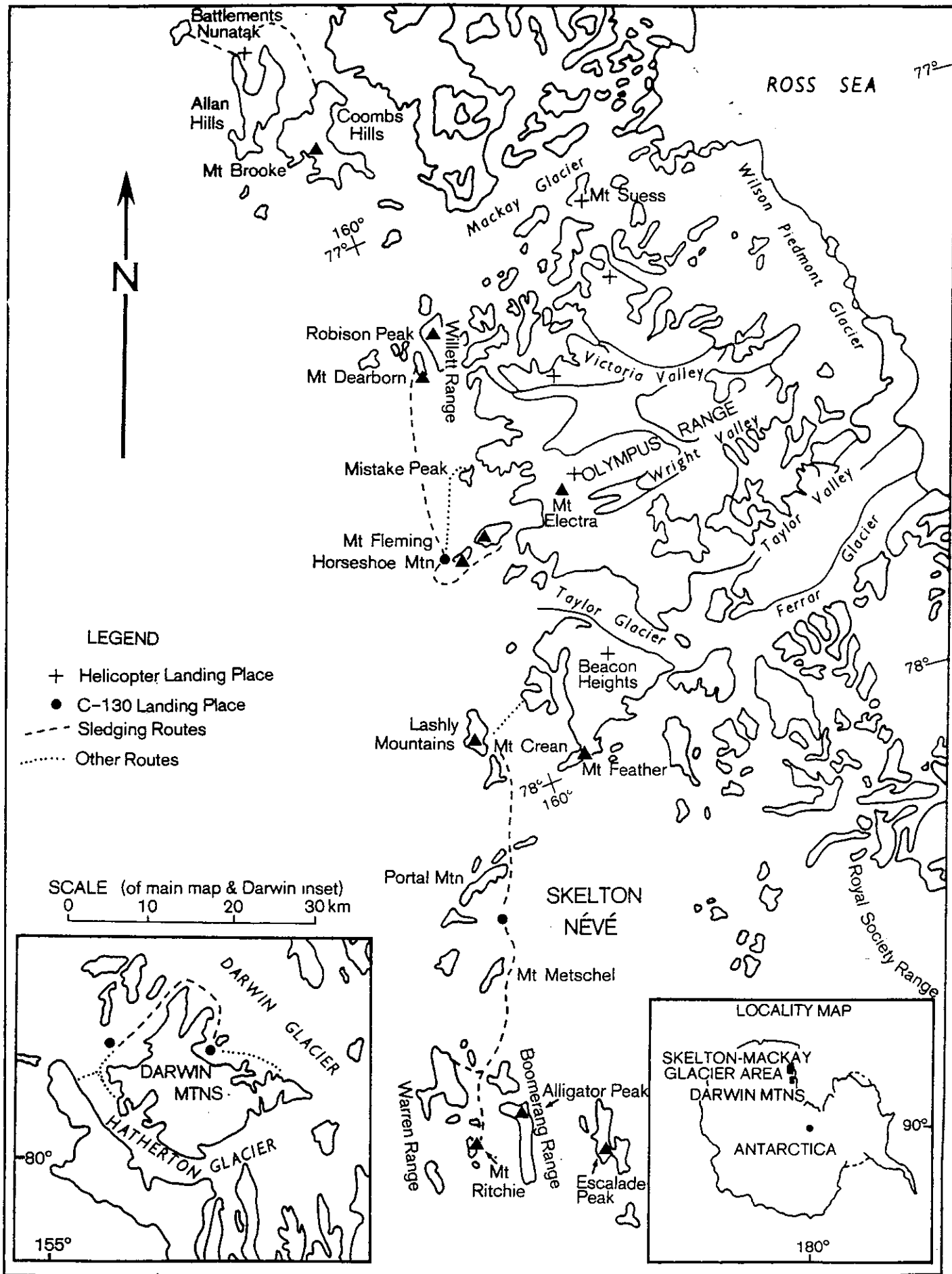


Figure 1. Locality map of south Victoria Land from the Skelton Neve to the Mackay Glacier.



Figure 2. View from above the Lashly Mountains down the Taylor and Ferrar Glaciers (middle distance) to the dome of Mt. Erebus 150 km east.
U. S. Navy photo.



Figure 3. View west across the Boomerang Range to Mt. Warren, a basic layered intrusion, and the Polar Plateau.
U. S. Navy photo.



Figure 4. View west over Mt. Feather to The Portal and the Polar Plateau.
U. S. Navy photo.

STRATIGRAPHIC SECTIONS OF THE BEACON SUPERGROUP
IN SOUTH VICTORIA LAND.

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* upper or lower contact not exposed.



INTRODUCTION.

The following stratigraphic descriptions were made during the 1970-71 Antarctic expedition from Victoria University of Wellington. Most sections were measured with a graduated staff 1.5 m long with an attached Abney level, but a few were measured by eyeheights and this is noted in the description. Each section is divided into formations and units. The units are numbered from oldest to youngest (left hand column) for each formation. Unit thickness is given in column A, and cumulative thickness from the base of the formation (or section, if the base of the formation is not exposed) is in column B.

The location of the base and the initials of the measurers of each section are given before each description. Range and azimuth, latitude and longitude, and elevation have been taken from sheets of the U. S. Geological Survey 1:250,000 reconnaissance series.

Rock properties are described in the following order: gross lithology, colour of unweathered surface, weathered colour ("weathers" has been abbreviated to "w/"), grain size, bedding and splitting properties, and then other comments. The colour reference used is the Geological Society of America Rock Colour Chart. Grain size is given in terms of the Wentworth scale, bedding and splitting properties are those defined by McKee and Weir (1953), except for the term "unbedded" which is used for units which lack any visible internal sedimentary structures. The notation (λ cm; h cm) is for the wavelength and height of ripple marks.

Sample numbers are those of the Victoria University of Wellington rock collection.

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SECTION A3 - ALLIGATOR PEAK

Section measured on westernmost part of northwest ridge of Alligator Peak 3.3 km at 26° from the summit. Section extends from base of large windscoop east and up to base of dolerite sill. Lower slumped part of Metschel Tillite was described from a north-south-oriented face just south of the section line. Measured with rod and level - SPK JGM (Aztec Siltstone and Weller Coal Measures) - RAA FJB (Metschel Tillite and Weller Coal Measures) 11/70.
 Position of base 78° 26.8' S; 158° 39.5' E. Map elevation 1800 m.

Unit		A	B
Dolerite sill, to top of ridge.			
<u>WELLER COAL MEASURES (30+ m).</u>			
3	Sandstone, very light grey (w/same and light brown [5YR 5/6]), indistinctly laminated, massive in lower 2 m, but becomes shaly to platy above this. Upper 4 m are mainly covered with dolerite scree, but some exposures show beds of greenish grey very fine shaly sandstone.	6.0	29.7
- gradational contact -			
2	Sandstone, very light grey (w/same and light brown [5YR 5/6]), medium to coarse, laminated to very thin-bedded, massive. Pebbles lacking. Trough cross-bedding.	5.0	23.7
Sample	23226 4.6 m Medium sandstone.		
	23225 0.1 m Coarse sandstone.		
- sharp contact -			
1	Sandstone, white and very light grey (w/same and light brown [5YR 5/6]), medium to coarse, laminated to very thin-bedded, massive. Trough cross-bedding common. Pebbly stringers and lenses occur throughout. An altered medium-grained equigranular granite at the base of the unit is 0.7 m across but most clasts are less than 0.2 m. Granitic pebbles dominate the lower 5 m. Above this the dominant clasts are white rounded quartz and quartzite mostly 2 to 10 cm across. One quartzite boulder 1 m below the top of the unit is 0.6 m long.	18.7	18.7
Sample	23224 0.0 m Pebbly grit.		
- erosion surface with at least 0.4 m of relief (<u>Pyramid Erosion Surface</u>) -			
<u>METSCHHEL TILLITE (68+ m).</u>			
14	Siltstone, light greenish grey [5G 7/1], coarse, laminated, shaly to platy. Laminae of medium white quartzose sand with well-preserved lobate sole marks are common from 1.4 to 2.3 m. Convolute bedding, slump folds 1 to 3 cm high and ripple-lamination are also present. Scattered granitic pebbles in a siltstone matrix at 1.9 m. Grades into fine sand with 0.1-m-thick trough cross-beds in upper m.	4.7	68.3
Sample	23222 2.3 m Slump folds.		
	23221 1.5 m Load cast.		
	23220 1.3 m Load cast.		
- interfingering contact -			
13	Sandstone, like unit 2. In places upper 0.5 m includes siltstone fragments up to 10 cm across.	7.3	63.6
- sharp contact -			
12	Sandstone, like unit 2 but finer grained, laminated and bluff-forming. Dips to 130° at 30° near base, 15° near top.	13.0	56.3
Sample	23217 12.9 m Fine sandstone.		
- gradational contact -			

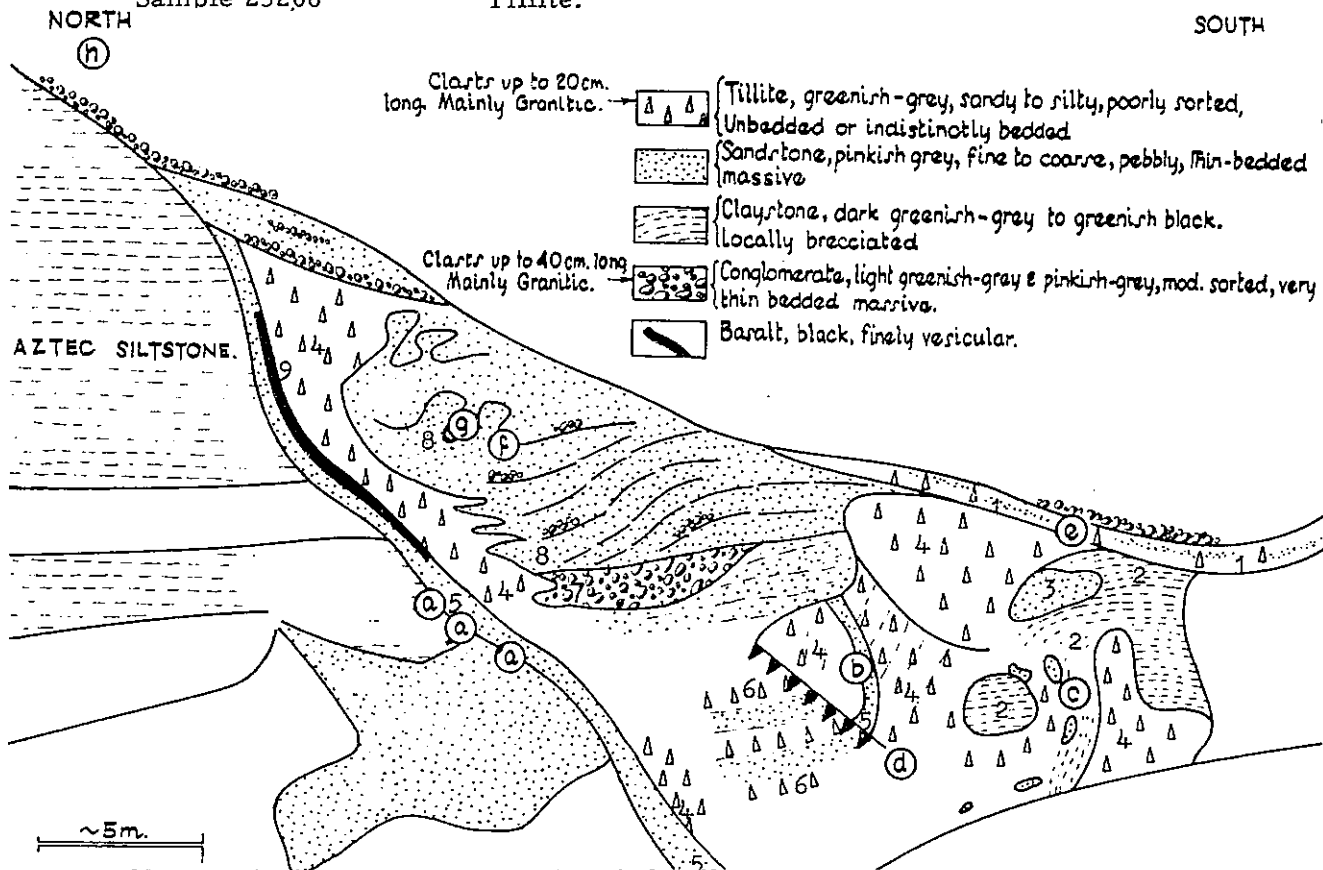
Unit	A	B
11 Sandstone, white (w/same and light brown [5YR 5/6]), medium unbedded, massive. Coarse in lower 2.5 m. Pebbly lenses from 7.8 to 7.9 and 8.8 to 9.1 m. Forms steep slopes.	18.0	43.3
Sample 23216 3.4 m Medium sandstone.		
23215 1.7 m Coarse sandstone.		
10 Conglomerate, moderately sorted, with boulders up to 0.8 m across. Clasts are mainly fine-grained equigranular or porphyritic granite, but there are also granitic gneiss, diorite, white quartz and quartzite, and light greenish grey acid volcanic clasts.	0.2-1.3	25.3
- contact above "units" 1-9 interfingering toward centre of valley, erosional towards margin of valley -		
<u>Note 1:</u> Six strike directions measured on the valley wall and on slumped beds in the valley range from 10° to 50°.		
<u>Note 2:</u> See note below unit 1.		
9 Basalt, dark grey to black, aphanitic, finely vesicular. Concordant layer about 20 cm thick near valley wall.		
Sample 23204 Baked tillite.		
23203 Basalt.		
8 Sandstone, very light grey and pinkish grey [5YR 8/1], fine to coarse, very thin-bedded, massive. Many laminae and thin beds of light greenish grey [5G 7/1] very fine sandstone and poorly sorted conglomerate. Pebbles scattered through the sandstone and in the lenses are mainly granitic and up to 15 cm across. A 0.3-m-thick unit of alternating coarse sandstone and greenish grey claystone 17 m from the base of the outcrop has a well developed lineation in the form of ripple-like ridges and hollows trending parallel to the valley wall. Unit includes several near isoclinal folds 1 to 2 m high. Unit interfingers with tillite on valley wall.		
Sample 23214 Pebbly sandstone.		
7 Conglomerate, light greenish grey [5G 7/1] and pinkish grey [5YR 8/1], very thin-bedded, massive. Boulders, mainly granitic, up to 40 cm across. Grades up into unit 8 and interfingers laterally with light greenish grey tillite.		
Sample 23213		
6 Tillite, greenish black [5G 2/1], clayey, in beds about 1 m thick, interbedded with subordinate sandstone like 5 above.		
Sample 23212 Tillite.		
5 Sandstone, pinkish grey [5YR 8/1], and light greenish grey [5G 7/1], fine to coarse, very thin-bedded, massive. Locally highly contorted. Contains lenses of light greenish grey siltstone fragments along the valley wall.		
Sample 23211 Sandstone.		
4 Siltstone (tillite), greenish grey [5G 6/1] (w/same and light brown [5YR 6/4]), sandy, unbedded or indistinctly bedded, massive. Scattered clasts, mainly of granite, up to 20 cm across. Occasional greenish black shaly laminae.		
Sample 23210 Tillite.		
3 Sandstone, pinkish grey [5YR 8/1], coarse and gritty, very thin-bedded, massive. Lenses of light greenish grey [5G 7/1] sandy siltstone clasts up to 10 cm across, and white quartz and granite clasts up to 5 cm across.		
Sample 23209 Sandstone with siltstone fragments.		
23208 Coarse sandstone.		

- 2 Claystone, greenish black [5G 2/1] and dark greenish grey [5G 4/1]. In most places it is brecciated into fragments 1 to 2 cm across. Slickensides are quite common.

Sample 23207 Claystone.

- 1 Siltstone (tillite in places), greenish grey [5G 6/1] and dark greenish grey [5G 4/1], coarse, sandy, very thin-bedded, massive. About 2 m thick. Scattered clasts up to 0.3 m, mainly granitic. Some greenish black [5G 2/1] laminae and beds up to 0.2 m thick.

Sample 23206 Tillite.



Note: The lower part of the Metschel Tillite at A3 consists almost entirely of slumped glacial debris preserved in a valley. Therefore the lower 24 m is described in terms of lithologies in slump packets rather than beds. Numbers refer to areas on figure above.

METSCHER TILLITE (68+ m).

- erosion surface with valley 24+ m deep (Maya Erosion Surface) -

AZTEC SILTSTONE (40+ m).

- 15 Sandstone, pinkish, massive, 0.2 m thick, overlain by interbedded, ripple-laminated, light greenish grey [5G 8/1] fine to medium and medium grey sandstone. Planar crossbeds 10 cm thick dip north-northwest at 2.2 m, and are overlain by a 10-cm-thick greenish grey sandstone bed containing mudcracks. Above the mudcracks greenish siltstone chips are exposed on the surface of a thin platform. At 2.5 m an olive black [5Y 2/1] basalt up to 20 cm thick is exposed. The basalt is not as well defined as that of unit 13. Greenish grey sandstone with basalt pillows dispersed throughout and black basaltic streaks which form an irregular network 'splattered' over the sandstone from 2.7 to 3.4 m. These beds also contain yellow sulphur patches, which commonly contain large pyrite crystals and pure black and dusky yellow [5Y 6/4] coatings on greenish grey sandstone. 4.9 39.9

Unit			A	B
	Green [5GY 6/4] massive sandstone containing whitish criss-crossing vertical and subvertical root-like structures from 3.4 to 4.1 m. At 3.9 m fish fossil plates are quite common, and an Acanthodian jaw was found at this level.			
	Sample 23203	3.3 m	Pyrite.	
	23202	3.3 m	Sulphur and pyrite.	
	23201	2.5 m	Basalt.	
	23200	0.1 m	Sandstone.	
	- irregular sharp contact -			
14	Sandstone, like unit 12, medium, platy. Base of beds just above basalt is more purplish with greenish grey patches.		0.5	35.0
	- irregular sharp contact -			
13	Basalt, black and vesicular. Tends to thin out laterally over 15 to 20 m. Where the flow becomes very thin laterally it tends to spot the sediments. In some parts the base of the basalt has very locally baked the underlying sediment an orange brown colour. The top of the flow 'juts' out from the overlying sediment and contains small pillows with thin patches of sediment lying in hollows between pillows.		0.25	34.5
	Sample 23199	Basalt (whole unit).		
	23198	Spotted sediment at lateral basalt-sediment contact.		
	- regular sharp contact -			
12	Sandstone, light greenish grey [5G 8/1], medium, ripple-laminated, platy.		1.2	34.2
	Sample 23197	0.6 m	Sandstone.	
	- regular sharp contact -			
11	Sandstone, basal 1.4 m light grey and medium grey, medium, ripple-laminated, platy. At 1.4 m a lensoid nodular bed up to 0.4 m thick appears. The nodules have greenish grey centres and light orange outer colours. The nodular beds pass up into light grey and occasional greyish red [10R 4/2] slabby siltstones with lighter greenish grey patches of sandstone.		4.5	33.0
	Sample 23196			
	23195	1.6 m	Calcite nodule.	
	- irregular gradational contact -			
10	Sandstone, mainly pink [5YR 8/1], medium and slabby, with laminae and thin beds of light greenish grey [5GY 8/1] fine ripple-laminated sandstone.		0.8	28.5
	- regular sharp contact -			
9	Siltstone, mainly greyish purple [5P 4/2] with green [5GY 6/5] patches, fractured and flaky. Beds contain nodules (calcite) up to 15 cm across with greenish grey centres [5GY 6/1] and very pale orange [10YR 8/2] outer colours. At 2 m the unit passes gradationally into medium grey platy siltstone.		2.2	27.7
	- scree-covered contact -			
8	Sandstone, basal 1.5 m greenish grey, medium and platy. Unit contains many purple spots. Greenish grey sandstone shows micro-cross laminae. The upper 2.4 m of the unit is mainly scree-covered.		3.9	25.5
	- irregular gradational contact -			

Unit	A	B
7 Sandstone, mottled greyish orange pink [5YR 7/2] and greenish grey [5GY 8/1], Medium pinkish spots and greenish siltstone chips are common in sandstone.	1.0	21.6
- sharp regular contact -		
6 Sandstone, medium, massive. Contains platy beds of fine greenish sandstone up to 5 cm thick, which are often ripple-laminated Greenish grey [5GY 8/1] sandstone, platy in part with criss-crossing white "root-like" structures, from 3.0 to 3.5 m. Sandstone bluff above 3.5 m contains occasional green siltstone chips up to 20 cm across. Trough cross-beds up to 25 cm thick dip northwest at 5.1 m. At 5.4 m there are poorly preserved fish fossil plates in a type of pavement. This is probably the same level as the pavement found by VUWAE 13 at A1 (unit 32). Massive sandstone above 5.4 m. Bluff-former.	9.8	20.6
- sharp contact -		
5 Sandstone, light greenish grey [5GY 8/1], medium, massive. Greyish orange [10YR 7/4] nodules up to 20 cm across and 15 cm wide (probably calcite). From 1.9 to 2.4 m white sandstone fills subvertical veins in the greenish grey sandstone. Mottles in a greenish grey [5GY 8/1] base from 1.8 to 2.8 m. Mottles usually have an inner greyish red blotch (core) [10R 4/2] and an outer purple blotch [5P 4/2].	3.8	10.8
- irregular gradational boundary -		
4 Sandstone, usually light greenish grey [5G 8/1], alternating with grey red purple [5RP 4/2] siltstone bands. Massive medium sandstone beds up to 20 cm thick alternate with slabby to platy siltstone beds up to 30 cm thick. Occasionally greenish sandstone merges with grey red purple siltstone with no distinct boundary.	2.5	7.0
- irregular gradational boundary -		
3 Sandstone, pinkish grey [5YR 8/1] with light greenish grey beds [5G 8/1] up to 10 cm thick, medium to coarse, massive. Top 5 cm of the unit contains fish fossils and a concentration of pale green siltstone chips up to 5 cm across, which weather out as a pavement.	1.2	4.5
- sharp contact -		
2 Sandstone, greenish grey [5GY 6/1], fine, slabby. Occasional greenish layers up to 5 cm thick. The thicker layers are usually dark green, while the thinner laminae are micro-crossbedded and often lens out.	1.0	3.3
- irregular gradational boundary -		
1 Sandstone, mainly greenish grey [5GY 6/1] with occasional patches of greyish red [10R 4/2] for basal 1 m, passing up into equal amounts of greenish grey and greyish red with occasional patches of medium grey, fine, slabby. At 2.2 m the unit is entirely greyish red siltstone.	2.3	2.3

AZTEC SILTSTONE (40+ m).

Glacier ice.

SECTION A4 - MOUNT RITCHIE

Section measured from edge of Deception Glacier up ridge on east face of Mount Ritchie to summit. Base of section 10.0 km at 224° from Alligator Peak. Measured by staff and level (lower part) BPK JGM (upper part) RAA PJB 12/70. Position of base 78° 32.2' S; 158° 26' E. Map elevation 1400 m.

Unit		A	B
Dolerite sill, 9 m thick. Forms summit.			
<u>WELLER COAL MEASURES (25+ m).</u>			
3	Scree.	6.0	24.8
2	Sandstone, very light grey (w/same or light brown [5YR 6/4]), fine to coarse, indistinctly laminated, massive. Trough cross-bedded. Carbonaceous streaks, laminae and thin beds above 1.5 m. At 10.3 m there are abundant white quartz pebbles up to 20 cm long and rare granite clasts up to 30 cm long. Upper 2 m of unit is fine and ripple-laminated.	18.0	18.8
	Sample 23190 10.8 m Sandstone.		
	23189 2.8 m Sandstone.		
	- sharp contact -		
1	Boulder conglomerate, moderately sorted with most clasts 5 to 20 cm but up to 1.2 m long. Most are granite but a few are white quartz, schist and acid volcanic (light greenish grey and fine-grained with scattered quartz and feldspar phenocrysts).	0-0.8	0.8
	- erosion surface -		
<u>METSCHER TILLITE (0-33 m).</u>			
Note: On the north face and the south ridge conglomerate of the Weller Coal Measures is topographically lower and rests directly on Aztec Siltstone.			
3	Siltstone (tillite), interbedded light bluish grey [5G 7/1] coarse and poorly sorted in thin to thick beds, and greenish black [5GY 2/1] fine laminae. Flaky. Clasts are up to 30 cm long and are mainly granitic.	0-2.3	32.5
	Sample 23188 0.5 m Greenish black siltstone.		
	- sharp contact -		
2	Siltstone (tillite), light bluish grey [5B 7/1] (w/light greenish grey [5G 7/1] and locally light brown [5YR 6/4]), indistinctly bedded in places. Clasts up to 20 cm across and mainly granitic. Interval of shaly tillite from 3.0 to 3.3 m. Sandstone lenses and tillite are folded almost to vertical of section line and strike at 74° 20 m southeast.	26.5	30.2
	Sample 23187 26.2 m Tillite.		
	23186 3.5 m Tillite.		
	- sharp contact -		
1	Siltstone (tillite), (w/like unit 2), sandy and pebbly, indistinctly laminated to thin-bedded, massive. Occasional thin fine sandstone lenses up to 0.7 m thick. Esker 4 m wide and 2.5 m high near base of unit 50 m northwest of section line. Trends 120°.	3.7	3.7
	- scree-covered contact -		
<u>AZTEC SILTSTONE (217 m).</u>			
63	Scree.	4.5	217.4
62	Sandstone, light grey (w/same and light brown [5YR 6/4]), fine, thin-bedded, flaggy to slabby, and interbedded subordinate siltstone, light greenish grey [5G 8/1], shaly. Excellent fish plates as pavements and locally in concentrations up to 20 cm thick at 2.3 m. Plant roots and stems at 2.7 m.	3.0	212.9

Unit		A	B
Sample 23185	2.7 m Sandstone with roots and stems. - interfingering contact -		
61	Siltstone, greenish grey [5G 6/1], coarse, unbedded, flaky. - gradational contact -	1.0	209.9
60	Sandstone, like unit 51, but has scattered subvertical tubes about 1 cm across. - erosion surface -	1.6	208.9
59	Sandstone, light greenish grey [5G 7/1], fine, slabby to massive. Fine white flecks common. Sample 23184 0.4 m Siltstone. - interfingering contact -	3.1	207.3
58	Sandstone, greyish pink [5R 8/2], fine, ripple-laminated, massive. Well-cemented, bluff-former. Sample 23183 1.0 m Sandstone. - erosion surface -	1.4	204.2
57	Sandstone, like unit 52. Flaggy to slabby. Forms lower part of bluff. - erosion surface -	1.0	202.8
56	Siltstone and very fine sandstone, light greenish grey [5GY 7/1], with some greyish red [10R 4/2] and greyish purple [5P 4/2] patches. Poorly exposed. Ledge-former. - sharp contact -	11.4	201.8
55	Sandstone, light greenish grey [5GY 8/1], fine, ripple-laminated, shaly to slabby. - erosion surface -	3.2	190.4
54	Sandstone, light greenish grey [5GY 8/1] (w/same, light brown [5YR 6/4] and greyish orange pink [10R 8/2]), fine to medium, laminated, slabby to massive. Abundant fish plates and lenses of siltstone pebbles 5 to 10 cm thick in lower 0.5 m. Sample 23182 0.2 m Sandstone. - sharp contact -	0 - 3.0	187.2
53	Siltstone, light greenish grey [5G 7/1], fine, laminated. Sample 23181 Siltstone. - sharp contact -	1.2	186.2
52	Sandstone, light greenish grey [5GY 7/1] (w/same and moderate reddish orange [10R 6/6]), fine, laminated, slabby to massive. Locally cross-bedded. - sharp contact -	2.7	185.0
51	Siltstone, greenish grey [5GY 6/1], coarse, ripple-laminated, shaly. - slumped contact -	2.5	182.3
50	Sandstone, light greenish grey [5GY 7/1] (w/same or moderate reddish orange [10R 6/6]), fine to medium, laminated to very thin-bedded, platy to slabby. Ripple-laminated in places. Sample 23180 Sandstone. - interfingering contact -	3.2	179.8
49	Siltstone, like unit 44. Upper 0.5 m greenish grey [5GY 6/1]. - sharp contact -	2.2	176.6

Unit		A	B
48	Sandstone, light greenish grey [5 GY 7/1] and medium grey, fine to medium, ripple-laminated, platy. - scree-covered contact -	1.5	174.4
47	Siltstone, greyish red [10R 4/2], coarse, sandy, unbedded, massive. Knobbly weathering. Coarse and fine veined network, with medium grey coarse veins 0.5 to 2.0 cm wide and greyish orange pink [10R 8/2] fine veins 1 to 2 mm wide. Pinkish grey [5YR 8/1] fine sandstone with very light grey veined network in upper and lower 0.1 m from 3.0 to 3.5 m. Mottled light greenish grey [5G 7/1] and greenish grey [5G 6/1] siltstone from 3.5 to 4.0 m. Sample 23179 2.0 m Veined siltstone (2 samples). - irregular contact -	6.2	172.9
46	Siltstone, light greenish grey [5G 7/1] (w/same and light brown [5YR 6/4], fine, unbedded, flaky. Abundant fine white flecks (? roots). Sample 23178 1.1 m Siltstone. - gradational contact -	4.3	166.7
45	Sandstone, light greenish grey [5G 8/1], very fine, ripple-laminated. - gradational contact -	1.7	162.4
44	Sandstone, pinkish grey [5YR 8/1] (w/same and moderate reddish orange [10R 6/6]), fine, laminated to thick-bedded, slabby to massive. Some greenish grey laminated siltstone beds up to 0.2 m thick with pale reddish brown spots in places. Quartz grit lenses 5 to 10 cm thick 1.2 m above base. Abundant greenish grey siltstone fragments up to 8 cm long and a few fish plates from 1.5 to 1.8 m. Sample 23177 1.5 m Sandstone. 23176 1.2 m Siltstone. 23175 0.6 m Sandstone.	4.3	160.7
43	Scree.	9.4	156.4
42	Sandstone, deeply weathered yellowish brown, fine, massive. Unit has extensive vertical criss-crossing root-like carbonaceous structures. Sample 23174 1 m Carbonaceous sandstone.	2.0	147.0
41	Snow.	3.0	145.0
40	Sandstone, greenish grey, fine to medium, slabby to platy. Ripple-laminated and trough cross-bedded. Nodular beds at top of unit. - regular sharp contact -	4.2	142.0
39	Siltstone, greyish red, with odd grey irregular blotches, and some horizontal and vertical criss-crossing reddish purple structures. At 1.5 m 5 cm of platy carbonaceous sandstone are overlain by siltstone carbonaceous siltstone fragments and fish plates. The overlying bed contains greyish red siltstone chips and abundant fish fragments. Sample 23173 1.7 m Greyish red siltstone. 23172 1.55m Carbonaceous sandstone.	2.4	137.8
38	Snow.	6.0	135.4
37	Sandstone, very light grey, fine, flaggy. Ripple-lamination and trough cross-bedding. Greyish red and greenish grey siltstone lenses appear at 3 m. Yellowish brown calcite nodules in greenish grey sandstone at 4 m.	4.5	129.4

Unit	A	B
Dolerite dyke, 6.2 m wide.		
36 Sandstone, light greenish grey, fine, flaggy to slabby. Trough cross-beds at base. Upper 0.5 m light greenish grey and ripple-laminated. Sample 23171 0.5 m Sandstone. - irregular sharp contact -	5.4	124.9
35 Sandstone, dark greenish grey, very fine, platy.	0.1	119.5
34 Scree.	18.8	119.4
33 Sandstone, light greenish grey, medium, laminated, massive. Trough cross-beds dip to east. The basal m contains dark ferruginous sandstone inclusions up to 1 m across, and stringers of light greenish grey siltstone inclusions from the top of unit 29. Sample 23170 1 m Sandstone. - irregular sharp contact -	4.2	100.6
32 Sandstone, light greenish grey, medium. Grades up into siltstone for upper 0.2 m. - irregular sharp contact -	1.0	96.4
31 Sandstone, very light grey, medium. Trough cross-bedded. Massive nodular beds in upper m. - irregular sharp contact -	1.7	95.4
30 Sandstone, light greenish grey, medium, platy. Trough cross-bedded. - erosion surface -	1.2	93.7
29 Sandstone, very light grey, medium, flaggy to slabby. Light greenish grey laminae and small siltstone chips common. Trough cross-bedded. Nodule beds from 3.9 to 4.4 m. Uppermost 0.2 m is fine platy light greenish grey sandstone. - irregular sharp boundary -	4.6	92.5
28 Sandstone, similar to unit 24, with occasional light greenish grey siltstone. Knobbly calcite beds appear at 6.3 m. - irregular sharp contact -	9.6	87.9
27 Sandstone, very light grey, medium, massive. Greenish grey siltstone chips up to 10 cm across and light greenish grey sandstone beds up to 5 cm thick near base. Trough cross-beds dip south and south east. At 6.5 m the sandstone becomes light greenish grey and more a slope-former. Travertine-like beds like those in unit 21 appear at 7.3 m. - irregular sharp contact with mudcracks -	9.3	78.3
26 Sandstone, very light grey, medium, massive. From 1.3 to 3.0 m the beds are less well-cemented and greenish. Nodular greenish grey beds occupy the upper 2.9 m. Sample 23168 0.5 m Sandstone. - irregular sharp contact -	5.9	69.0
25 Sandstone, very light grey, medium, massive. Light greenish grey and silty with occasional nodules above 3.0 m. Upper 0.3 m has calcite nodules up to 10 cm across. - irregular sharp contact -	4.2	63.1

Unit		A	B
24	Sandstone, very light grey, fine to medium, massive. Calcitic blobs up to 1 cm across in fine greenish grey sandstone above 1.5 m. Upper part of unit contains travertine-like light greenish grey sandstone with calcite blobs. Sample 23167 4.2 m Calcitic blobs. 23166 1.5 m Sandstone. - regular sharp contact with mudcracks -	5.4	58.9
23	Sandstone, very light grey, medium, massive. Trough cross-bedded. 0.7 m beds become fine, soft and slabby, with greenish grey laminae. - regular sharp contact -	2.0	53.5
22	Sandstone, very light grey, medium, massive. Upper 0.4 m is fine, light greenish grey and fractures. - irregular sharp contact -	1.7	51.5
21	Siltstone, greyish red, fractured and flaky with greyish orange nodules in massive and knobby beds. Light greenish grey fine platy sandstone dominant above 2.3 m. Sample 23165 1 m Nodules. - irregular sharp contact -	3.1	49.8
20	Sandstone, light greenish grey, medium, platy. - regular sharp contact -	3.0	46.7
19	Sandstone, light greenish grey, medium, platy. - regular sharp contact -	1.2	43.7
18	Sandstone, very light grey, medium, slabby with occasional flaggy beds. Trough cross-beds up to 0.2 m thick dip south. - irregular sharp contact -	4.0	42.5
17	Sandstone, greenish grey, fine, slabby. - irregular sharp contact -	1.0	38.5
16	Sandstone, very light grey, fine, massive. Unit has tube structures and blotches filled with calcite. - irregular sharp contact -	1.0	37.5
15	Siltstone, coarsely mottled greyish red, medium grey and greyish green, with irregular flaggy fracture. Upper 0.7 m massive, sandy and greyish green with black speckles. Sample 23164 0.6 m Siltstone. - sharp regular contact -	2.4	36.5
14	Sandstone, medium, flaggy. - regular sharp contact -	0.4	34.1
13	Sandstone, light greenish grey, medium, ripple-laminated, flaggy. Becomes very light grey fine sandstone at 0.5 m, and passes up to greenish grey ferruginous sandstone with small scale trough cross-beds at 3.2 m. Sample 23163 3.2 m Sandstone. - regular sharp contact -	3.3	33.7
12	Sandstone, very light grey (w/same and greyish pink) coarse, massive. Greenish grey siltstone chips locally weathered out near base. Chips up to 15 cm across prominent on weathered surface at 1.5 m. Greenish grey sandstone laminae common in upper part of unit. - regular sharp contact with load casts and mudcracks -	2.6	30.4

Unit		A	B
11	Sandstone, light greenish grey, fine to medium. Massive in lower m; platy to slabby higher up. Upper 1.5 is sequence of light greenish grey siltstone beds up to 25 cm thick and graded light grey sandstone beds up to 10 cm thick. Sequence lenses out laterally over 10 m.	2.3	27.8
	Sample 23162 Interbedded sandstone and siltstone.		
	- regular sharp contact -		
10	Sandstone, very light grey, medium, massive. Trough cross-bedded. Light greenish grey sandstone laminae common. Siltstone lenses up to 30 cm thick and fragments.	1.8	25.5
	- regular sharp contact with load casts and mudcracks -		
9	Sandstone, with minor siltstone, light greenish grey, fine. A few lenses of light brown coarse sandstone.	1.3	23.7
	- regular sharp contact -		
8	Sandstone, light grey with light greenish grey laminae and stringers up to 10 cm thick, medium, massive. Thin cherty bands and greenish grey siltstone chips.	1.7	22.4
	- regular sharp contact -		
7	Sandstone, greenish grey, medium grading to fine, massive. Greenish laminae and quartz pebbles in lower 30 cm.	1.1	20.7
	Sample 23161 0.1 m Sandstone.		
	- regular sharp contact -		
6	Sandstone, very light grey, coarse to gritty, massive. Sparse large quartz pebbles up to 5 cm across. Trough cross-beds dip to east. Upper m is fine to medium sandstone.	4.3	19.6
	- regular sharp contact -		
5	Siltstone, very light grey, greenish grey and blackish red. Grades down into medium sandstone in lower 30 cm. Infilled veins at several levels.	4.4	15.3
	- regular sharp contact -		
4	Sandstone, light greenish grey, medium, slabby. Greenish grey siltstone laminae common. Above 30 cm there are blackish red siltstone lenses with light to dark greenish grey sandstone mottles and lenses.	3.7	10.9
	Sample 23160 3.5 m Siltstone.		
	23159 1.6 m Purple siltstone.		
	23158 0.3 m Sandstone.		
	- regular sharp contact -		
3	Siltstone, greenish grey, greyish red and minor medium grey, platy. Colours interbedded and as lenses up to 10 cm across. Minor sandstone.	2.0	7.2
	Sample 23157 1.8 m Siltstone.		
	23156 0.5 m Siltstone.		
	- irregular sharp contact -		
2	Sandstone, very light grey and greenish grey, medium to gritty. Quartz pebbles up to 3 cm across and greenish grey siltstone laminae near base. Grades from gritty in the lower 0.5 m to fine to medium in the upper 1.5 m.	4.7	5.2
	Sample 23155 2.8 m Sandstone.		
	- erosion surface -		

Unit	A	B
1 Siltstone, greyish olive, coarse, massive. In lenses up to 8 m long.	0.5	0.5
Sample 23154 0.3 m Siltstone.		
<u>AZTEC SILTSTONE</u> (217 m).		
- regular sharp contact -		
<u>BEACON HEIGHTS ORTHOQUARTZITE</u> (26+ m).		
1 Sandstone, pinkish grey and greenish grey (w/same, light brown and reddish brown), medium, flaggy to massive. Ferruginous greenish grey sandstone lens 15 cm thick at 1.5 m. Another ferruginous bed at 16 m. Unit becomes light greenish grey, finer and occasional thin siltstone beds appear above 12 m. Bluff-former in lower part, slope-former in upper 7 m.	26.2	26.2
Sample 23153 20.0 m Sandstone.		
23152 16.0 m Sandstone.		
23151 0.8 m Sandstone.		
Snow slope 5 m high.		
Ice of Deception Glacier.		

SECTION A5 - NEAR MOUNT RITCHIE

Section forms upper part of rocky knoll at north end of long ridge running north from Mount Kohn. A sequence of red and green siltstone and light-coloured sandstone like the upper part of the Aztec Siltstone at Section A4 crops out in a windscoop low on the east side of the ridge but was not measured. The measured section is on the northeast side of the ridge 11.4 km at 236° from Alligator Peak. Measured by eyeheights in strong winds - PJB GY 12/70.

Position of base 78° 31.7' S; 158° 19.5' E. Map elevation 1550 m.

Unit	A	B
Top of knoll.		
<u>WELLER COAL MEASURES</u> (30+ m).		
1 Sandstone, very light grey (w/same), coarse, massive. Stringers of rounded white quartz and quartzite pebbles up to 10 cm across. Rare granite pebbles at base. Trough cross- beds dip to southeast.	30	30
- sharp contact (<u>Pyramid Erosion Surface</u>) -		
<u>AZTEC SILTSTONE</u> (54+ m).		
4 Sandstone, very light grey (w/light brown), fine ripple-laminated massive. Several 20-cm-thick carbonaceous beds like unit 3. Sample 23192 6 m Siltstone.	15	54
- sharp contact -		
3 Siltstone, dark grey (w/same and light grey), fine to coarse, laminated, shaly to papery, carbonaceous. Sample 23191 15 m Siltstone.	27	39
2 Interbedded sandstone, like unit 4, and siltstone, like unit 3, in beds 0.1 to 0.5 m thick.	7	12
1 Sandstone like unit 4.	5	5
Snow.		

SECTION M1 - MT. METSCHEL

Section measured up the southeast ridge of Mt. Metschel from the base of the lowest sandstone bluff to the base of the dolerite sill. Measured with staff and level - RAA PJB BPK JGM 11/70.

Position of base 78° 17.2' S; 159° 1' E. Map elevation 1700 m.

Unit	A	B
Dolerite sill, to top of Mt. Metschel.		
WELLER COAL MEASURES (22+ m).		
9 Sandstone, like unit 5.	0.7	21.7
- erosion surface -		
8 Sandstone, greenish grey [5GY 6/1] (w/same), very fine, laminated, shaly.	0.4	21.0
7 Sandstone, like unit 5.	0.4	20.6
6 Sandstone, greenish grey [5GY 6/1] (w/same), fine but gritty, unbedded, shaly.	0.4	20.2
- scree-covered contact -		
5 Sandstone, very light grey (w/same and light brown [6YR 6/4]), coarse, laminated, massive. Well-rounded white quartz pebbles up to 4 cm across at base of unit.*	0.9	19.8
Sample 23294 0.9 m Grit.		
- sharp contact -		
4 Sandstone, white (w/same), fine, indistinctly laminated, massive. Scattered ?calcareous concretions up to 1 m across. Unit becomes finer grained in upper part, and is shaly with abundant green laminae in upper m.	4.8	18.9
Sample 23293 0.1 m Sandstone.		
- sharp contact -		
3 Sandstone, light greenish grey [5GY 8/1] (w/same), very fine, laminated, shaly to slabby. Some ripple lamination.	4.5	14.1
- scree-covered contact -		
2 Sandstone, yellowish grey [5Y 8/1] (w/same and light brown), fine, laminated, massive. Small-scale trough cross-beds.	1.5	9.6
- scree-covered contact -		
1 Sandstone, yellowish grey [5Y 8/1] (w/same and light brown), coarse, laminated, massive, feldspathic. Clasts up to 40 cm long at base and at 1.5 m. Lenses of smaller clasts higher. Planar and trough cross-beds common.	8.1	8.1
Sample 23292 0.0 m Coarse sandstone.		
- erosion surface -		
<u>METSCHEL TILLITE</u> (18 m).		
2 Sandstone (tillite), light greenish grey [5GY 8/1] (w/same and light brown), indistinctly bedded, thick-bedded, massive. Clast distribution size and composition similar to unit 1. However unit includes boulders from 0.1 to 0.6 m long and 2 to 4 m apart. Several ferruginous concretionary layers about 3 cm thick in upper 4 m.	14.1	18.4
Sample 23291 13.0 m Light olive grey [5Y 6/1] limestone.		
23290 12.5 m Porphyritic granite.		
23289 12.5 m Tillite.		
- sharp contact -		

Unit		A	B
1	Sandstone (tillite), light bluish grey [5B 7/1] (w/same and light brown [5YR 6/4] but purple and dark brown in lower m. Fine and poorly sorted, indistinctly thick-bedded, massive. Scattered clasts mostly 1 to 4 cm long form about 1 percent of the rock. Of 23 clasts 17 (80 percent) were granite, and the rest included sandstone, biotite schist, quartzite and acid volcanic rock. Five largest clasts in 5 m ² were 8, 8, 8; 8, 10 cm long. The unit contains white concretionary spheres and lenses 0.1 to 0.5 m across that are more common than the clasts of similar size.	4.3	4.3
Sample 23288	3.2 m Pinkish grey [5YR 8/1] concretion.		
23287	2.9 m Tillite.		
23286	2.6 m Tillite.		
23285	0.0 m Brownish grey [5YR 4/1] tillite.		
	- erosion surface with 1.3 m of relief -		
<u>AZTEC SILTSTONE (50+ m).</u>			
29	Alternating sandstone, light grey, very fine, and siltstone, medium grey. Beds laminated to very thin-bedded. Gently folded and thrust.	3.4	49.5
Sample 23284	2.1 m Siltstone and ?zeolite.		
	- scree-covered contact -		
28	Alternating claystone, dusky brown [5YR 2 ¹ /2], unbedded, and sandstone, grey and purple thin-bedded, in units from 0.3 to 2 m thick. Pinkish grey [5YR 8/1] nodules 3 to 10 cm across at several levels.	7.4	46.1
Sample 23283	4.5 m Fish bearing.		
	- gradational contact -		
27	Siltstone, like unit 26, but without nodules.	2.0	38.7
	- gradational contact -		
26	Siltstone, greyish purple [5P 4/2], unbedded, massive to flaky. Scattered pinkish grey [5YR 8/1] nodules 3 to 8 cm across. Very irregular small light grey patches.	0.8	36.7
Sample 23282	0.4 m Nodule.		
	- gradational contact -		
25	Sandstone, very light grey, fine, ripple-laminated.	0.3	35.9
	- sharp contact -		
24	Siltstone, greyish red [10R 4/2], unbedded, massive to flaky.	0.4	35.6
	- gradational contact -		
23	Siltstone, light-greenish grey [5GY 8/1] with pinkish grey [5YR 8/1] unbedded, crudely columnar-jointed.	0.3	35.2
Sample 23281	0.2 m Siltstone.		
	- gradational contact -		
22	Sandstone, mottled light greenish grey [5GY 8/1] and greyish purple [5P 4/2], unbedded, massive. Knobbly.	1.4	34.9
Sample 23280	0.1 m Mottled siltstone.		
23279	0.0 m Fish bearing sandstone.		
	- gradational contact -		
	- 22 -		

Unit		A	B
21	Sandstone, very light grey, fine, laminated to very thin-bedded, flaggy. Laminae and thin beds pinkish and light greenish grey. Some trough cross-beds. Abundant fish plates in channels at base. Sample 23278 base Fish-bearing sandstone. - erosion surface with 30 cm relief -	3.2	33.5
20	Sandstone, light grey, fine, very thin-bedded, platy. Greyish orange pink [5YR 7/2] and light olive grey [5Y 6/1] in upper part. Sample 23277 0.2 m Sandstone. 23276 0.1 m Sandstone. - gradational contact -	1.1	30.3
19	Siltstone, greyish purple [5P 4/2]. Nodular in lower 0.4 m. Greyish in upper 0.1 m. Sample 23275 0.2 m Nodular siltstone. 23274 0.2 m Nodular siltstone.	2.1	29.2
18	Alternating sandstone, very fine, grey, and claystone, greyish red [10R 4/2], thin-bedded. Grades into greyish red siltstone at top.	0.7	27.1
17	Sandstone, greyish orange pink [5YR 7/2], fine, laminated, slabby to massive. Greenish laminae common. 15-cm-thick greenish sandstone with fish plates at top. Sample 23273 0.05 m Sandstone. - sharp contact -	0.8	26.4
16	Claystone, grades from greyish red [10R 4/2] to dark greenish grey [5GY 4/1]. Upper 0.1 m is laminated with lenses of greyish red siltstone. Sample 23272 0.3 m Greenish grey claystone. 23271 0.2 m Red claystone.	1.3	25.6
15	Sandstone, light bluish grey, fine. Fish plates.	0.7	24.3
14	Siltstone, like unit 12. - gradational contact -	0.9	23.6
13	Sandstone, greyish red purple [5RP 4/2] with pinkish grey [5YR 8/1] nodules, fine, laminated, slightly shaly. Sample 23270 0.4 m Grey sandstone. 23269 0.0 m Purple and grey sandstone. - irregular contact -	0.4	22.7
12	Siltstone, greyish red [10R 4/2]. Veined network. - interfingering contact -	1.6	22.3
11	Sandstone, light olive grey [5Y 6/1] and greyish purple [5P 4/2], very fine, ripple-laminated, platy. Abundant white nodules, some interconnected, up to 5 cm across. A few greyish red [10R 4/2] siltstone lenses. Sample 23268 0.7 m Medium grey sandstone. 23267 0.6 m Red siltstone. 23266 0.4 m Mottled grey and purple sandstone. 23265 0.3 m Sandstone.	0.8	20.7
10	Siltstone, greyish red [10R 4/2], with pinkish grey [5YR 8/1] nodules. Fish plates occur at 1.6 m in greyish mudcracked 5-cm-thick interval. Sample 23264 0.8 m Siltstone. - gradational contact -	2.1	19.9

Unit		A	B
9	Sandstone, fine, ripple-laminated, flaky to massive. Sample 23263 0.3 m Siltstone. 23262 0.2 m Siltstone. - sharp contact -	0.3	17.8
8	Siltstone, greyish red [10R 4/2], unbedded, massive to flaky. Scattered pinkish grey [5YR 8/1] nodules. Upper 0.3 m are medium grey. Sample 23261 1.4 m Medium grey siltstone. 23260 1.2 m Greyish red siltstone. - gradational contact through a 0.2-m-thick nodular interval -	1.5	17.5
7	Sandstone, light greenish grey [5GY 8/1] and very light grey, fine, unbedded, massive. Vertical tubes about 1 cm wide. Some filled with a light red [5R 6/6] mineral. Sample 23259 0.2 m Sandstone, - gradational contact -	0.6	16.0
6	Sandstone, mottled greyish purple [5P 4/2] and light greenish grey [5GY 8/1], fine, unbedded, massive. Subvertical veined network. Sample 23258 2.0 m Sandstone. - gradational contact over 0.4 m of alternating sandstone and siltstone -	2.4	15.4
5	Sandstone, light grey (w/same and light brown [5YR 6/4]), fine, laminated, blocky. Trough cross-bedded. Stringers of greenish grey [5G 6/1] siltstone fragments up to 6 cm across. - erosion surface with 15 cm relief -	1.0	13.0
4	Siltstone, mottled greyish red [10R 4/2] and pinkish grey [5YR 8/1] but greenish grey [5G 6/1] in upper 0.3 m, unbedded, flaky. Sample 23257 2.3 m Greenish grey siltstone. 23256 2.0 m Mottled siltstone. - gradational contact -	2.5	12.0
3	Alternating very fine sandstone and siltstone, light bluish [5B 7/1] grey (w/same and light brown [5YR 6/4]), laminated to very thin-bedded, platy to blocky. Ripple-laminated. Sample 23255 2.9 m Siltstone. - gradational contact -	3.5	9.5
2	Sandstone, very light grey (w/same and light brown [5YR 6/4]), medium, very thin-bedded, blocky to massive. Quartzose and indistinctly trough cross-bedded. Thin yellowish grey [5Y 7/2] siltstone laminae with markings as in unit 1. Yellowish grey siltstone fragments up to 3 cm across in stringers throughout. Scattered white spots about 1 cm across. Sample 23254 0.0 m Sandstone. - erosion surface with channel 30 cm deep -	4.6	6.0
1	Siltstone, yellowish grey [5Y 7/2] (w/same and light brown [5YR 6/4]) laminated to very thin-bedded, slabby. Some ripple-laminated beds. Laminae near top of unit split to show surfaces with bumps and lineations 1 or 2 mm across, perhaps of animal origin. Mudcracks 3 cm deep at top of unit. Sample 23253 0.7 m Siltstone. <u>AZTEC SILTSTONE</u> (50+ m). Lower part of slope below outcrop is ice-cored moraine of dolerite blocks. Upper part is dolerite scree.	1.4	1.4

SECTION M2 - MT. METSCHEL

Section measured from top of Aztec Siltstone to base of sill on the southeast face at the southwest end of Mt. Metschel, and 1.7 km at 250° from M1. Measured by eyeheights - PJB 11/70.

Position of base 78° 17.5' S; 158° 57' E. Map elevation 1700 m.

Unit	A	B
Dolerite sill, to top of Mt. Metschel.		
<u>WELLER COAL MEASURES (21+ m).</u>		
5 Three cycles of indistinctly laminated, coarse, light-coloured sandstone grading up to shaly very fine greenish grey sandstone. The coarse sandstone has scattered rounded white quartz pebbles up to 4 cm across near the base. The sill is intruded above the coarse sandstone of the third cycle.	5	20.5
- erosion surface -		
4 Sandstone, light grey (w/same and light brown), medium, laminated, blocky to massive. Parallel and trough cross-bedding. Finer grained, shaly and greenish in upper m.	3	15.5
- sharp contact -		
3 Sandstone, light grey (w/same and light brown), coarse, laminated and massive in lower part; finer grained, ripple-laminated and shaly in upper 0.5 m.	2	12.5
- erosion surface -		
2 Siltstone, greenish grey, ripple-laminated, shaly.	2	10.5
- gradational contact -		
1 Sandstone, yellowish grey (w/same and light brown), coarse, laminated to very thin-bedded, blocky to massive. Lenses up to 0.2 m thick mainly of quartz and quartzite pebbles up to 20 cm long at base of unit. Trough and planar cross-bedding. Beds of greenish grey siltstone 2 to 10 cm thick in upper m.	8.5	8.5
- erosion surface -		
<u>METSCHEL TILLITE (16 m).</u>		
1 Sandstone (tillite), light bluish grey and light greenish grey, fine and poorly sorted, indistinctly thick-bedded, massive. Locally tillite has a shaly cleavage. Dips up to 30° indicate penecontemporaneous slumping. Striations and small grooves up to 1 cm deep and 2 cm apart were found on a tillite bed 0.1 to 0.2 m thick at base of unit and protected by a thin film of greenish grey siltstone.	16	16.0
- erosion surface with 1.5 m relief -		
About 50 m of Aztec Siltstone.		
<u>Note:</u> The Aztec Siltstone is the same sequence as at M1 but is better exposed and appears to have more and better fish. There are several pavements of fish plates and mudcracks in the upper 5 m.		
Glacier ice.		

SECTION P1 - PORTAL MOUNTAIN

Section measured up the long eastern ridge of Portal Mountain from the foot of the steep east-facing slope on the easternmost rock spur. Base of section is 6.0 km at 108° from the summit of Portal Mountain. Top of section is base of thin sill that underlies an extensive platform east of the rock summit. The section from the top of the sill to the rock summit is recorded as P2. Measured with staff and level - RAA PJB 12/70. Position of base 78° 7.2' S; 159° 24' E. Map elevation 1700 m.

Unit		A	B
	Dolerite sill about 30 m thick.		
	<u>FEATHER CONGLOMERATE</u> (204 m - includes 12 m from P2)		
22	Sandstone, like unit 16. Bluff-former. Sample 23381 0.3 m Sandstone.	8.2	192.2
	- interfingering and erosional contact -		
21	Sandstone, like unit 16, in beds up to 1 m thick, alternating with laminated light greenish grey siltstone and fine sandstone.	7.7	184.0
	- gradational contact -		
20	Sandstone, like unit 16. Bluff-former.	9.3	176.3
	- slumped contact -		
19	Sandstone, olive grey [5Y 4/1] (w/same and moderate brown [5YR 3/4]) very fine, ripple-laminated, shaly to massive.	3.0	167.0
18	Sandstone, deeply w/light brown [5YR 5/6], fine to medium, unbedded, shaly to massive. A little trough cross-bedding. Sample 23380 0.2 m Fine sandstone.	1.6	164.0
	- erosion surface -		
17	Sandstone, very light grey (w/light greenish grey [5GY 8/1] and light brown [5YR 6/4]), fine, ripple-laminated, shaly to massive.	1.3	162.4
16	Sandstone, white to very light grey (w/same and light brown [5YR 6/4]), fine to coarse, indistinctly laminated, massive. Trough cross-bedding.	1.6	161.1
	- erosion surface -		
15	Siltstone, light olive grey [5Y 5/2] (w/same and light olive brown [5Y 5/6]), fine to coarse, indistinctly laminated, shaly to flaky. A bed of greyish red [10R 4/2] siltstone from 0.7 to 0.8 m with a few light olive grey [5Y 5/2] patches and veins about 1 cm across. Sample 23379 0.9 m Grey siltstone. 23378 0.8 m Red siltstone.	1.8	159.5
	- gradational contact -		
14	Sandstone, like unit 8. Weathering colour changes at 8 m from mainly light brown to mainly white. Thin lens of light greenish grey sandstone at 11.6 m. Poorly sorted olive grey [5Y 4/1] sandstone like unit 5 from 18.4 to 19.1 m. Vertical tubes 1 cm across in cross-bedded sandstone at 23 m. Mudcracks 8 cm apart and 3 mm wide in light greenish grey siltstone at 27 m. Sample 23377 45.9 m Sandstone. 23376 27.3 m Siltstone. 23375 26.7 m Sandstone. 23374 18.8 m Sandstone. 23373 6.2 m Sandstone.	50.9	157.7

Unit		A	B
12	Conglomerate, like unit 9, but not as well sorted. Pinkish pebbles appear and become more common upwards. Sample 23372 3.0 m Conglomerate and pebbles.	9	106.8
12	Sandstone, very light grey (w/light greenish grey [5GY 8/1] and light brown [5YR 6/4]), very fine to very coarse, laminated to very thin-bedded, massive. Black laminae and coatings common. Abundant vertical pipes about 1 cm wide and up to 30 cm long (?Scolithus). Trough cross-bedding. Sample 23371 8.0 m Sandstone.	12	97.8
11	Conglomerate, like unit 9.	4.5	85.8
10	Sandstone, like unit 8. Some noncarbonaceous black laminae and coatings on joint surfaces. A few beds of white rounded quartz pebbles but no pinkish quartz pebbles.	4.5	81.3
9	Conglomerate, white rounded quartz pebbles in a light brown-weathering [5YR 5/6-6/4] medium to coarse sand matrix. Pebbles are mostly 2 cm but up to 6 cm across. Fine to coarse deeply weathered light brown sandstone lenses common. Trough cross-beds in sets 0.1 to 0.5 m thick ubiquitous. Pinkish pebbles rare. - gradational contact over several m -	29	76.8
8	Sandstone, very light grey (w/light greenish grey [5GY 8/1] and light brown [5YR 6/4]), very fine to very coarse, laminated to very thin-bedded, massive. Lenses with mainly pinkish pebbles up to 5 cm across common. Trough cross-beds common. Lens of light greenish grey coarse poorly sorted sandstone from 10 to 11 m. Bluff-former. Sample 23367 15.0 m Coarse sandstone. 23366 6.6 m Hard fine sandstone from 0.5-m-thick bed 23365 2.0 m Conglomerate. - erosion surface -	25	47.8
7	Sandstone, light greenish grey [5GY 8/1] (w/same), medium and poorly sorted, unbedded, massive. Contains black material as in unit 6. Sample 23364 1.1 m Sandstone. 23363 0.9 m Black material. - gradational contact -	1.4	22.8
6	Sandstone, like unit 2, but with more abundant pebbles. Pinkish pebbles form about 40 percent of the total. Small concretions as in unit 4. Also concretionary structures 10 to 20 cm across outlined or filled with a black material, which also is found in joints. - erosion surface -	3.6	21.4
5	Sandstone, olive grey [5Y 4/1] (w/pale olive [10Y 6/2] and light brown [5YR 6/4]), fine to medium but very poorly sorted, unbedded, massive. Sample 23362 0.5 m Sandstone. - gradational contact -	0.9	17.8
4	Sandstone, like unit 2, but with pinkish pebbles forming about 20 percent of the clasts. Lower m weathers moderate brown and has concretions about 1 m across. Upper part has scattered ferruginous concretions 1 to 3 cm across. Sample 23361 1 m Small concretions. - erosion surface -	1.8	16.9

Unit		A	B
3	Siltstone, greyish yellow green [5GY 7/2] (w/same), coarse, unbedded, platy. Very hard. Includes lenses of sandstone like unit 2. Sample 23360 1.6 m Siltstone. - interfingering contact -	2.2	15.1
2	Sandstone, like unit 1 but slope-former. Most pebbles are white or translucent, but about 10 percent are pinkish (moderate orange pink to pale reddish brown [10R 7/4-5/4]). Laminae and thin lenses (and fragments in the sandstone) of grey (w/light greenish grey [5GY 8/1]) very fine sandstone. Sample 23359 0.5 m Medium sandstone. - gradational contact -	5.9	12.9
1	Sandstone, white (w/same), medium to very coarse, indistinctly laminated and very thin-bedded, massive. Trough cross-beds common. Lenses of quartz grit and pebbles up to 2 cm across. Non-carbonaceous. Bluff-former. <u>FEATHER CONGLOMERATE (204 m)</u> <u>WELLER COAL MEASURES (232 m)</u>	7.0	7.0
45	Sandstone, light grey to black (w/same), very fine, laminated, shaly to platy. Well preserved branched stems. Sample 23358 0.2 m Carbonaceous sandstone.	2.7	231.6
44	Sandstone, like unit 42. Sample 23357 1.7 m Coarse sandstone.	2.3	228.9
43	Snow, with outcrop of dark grey carbonaceous very fine sandstone about 1 m across 3.5 m below top of unit.	7.2	226.6
42	Sandstone, white (w/same), very coarse, indistinctly thin-bedded, massive.	1.5	219.4
41	Snow.	1.4	217.9
40	Scree, with fragments and occasional outcrops of siltstone, medium to dark grey (w/same and greyish orange [10YR 7/4]), coarse, laminated, shaly, exposed about 50 m south of the section line. Abundant plant stems and fragments. Sample 23356 2.9 m Carbonaceous siltstone. - gradational contact over 1 m -	4.0	216.5
39	Sandstone, white (w/same and light brown [5YR 6/4]), medium to very coarse, indistinctly very thin-bedded, massive. Quartz grit and pebbles up to 5 cm across in laminae and lenses throughout. Some dark grey (w/light greenish grey [5GY 8/1]) siltstone fragments and rare small pebbles of granite and acid volcanics. Laminae and stringers of light greenish grey fine sandstone with abundant dark grey carbonaceous laminae. Coal streaks common in the medium sandstone. Upper 1.8 m is finer grained, and has dark reddish brown [10R 3/4] weathering concretions 0.3 m thick and 1 m across. Sample 23355 2.5 m Medium sandstone.	8.2	212.5
38	Snow.	6.3	204.3
37	Siltstone, medium grey to black (w/same and moderate reddish brown [10YR 5/4]), coarse, laminated, papery to shaly. Sample 23354 1.1 m Carbonaceous siltstone. - gradational contact -	3.9	198.0

Unit		A	B
36	Coal, bright, made up of 1 cm fragments. - gradational contact -	1.5	194.1
35	Siltstone, medium grey to black (w/same and dusky yellow [5Y 6/4]), coarse, laminated, papery to shaly. Coal from 1.7 to 1.8 m. Some fine sand laminae. - gradational contact over 1 m -	2.2	192.6
34	Sandstone, deeply w/moderate reddish brown [10R 4/6], fine, ripple laminated, shaly to slabby. Sample 23352 0.2 m Fine sandstone. - sharp contact -	2.5	190.4
33	Sandstone, like units 31 and 32, but pebbles are smaller and more or less confined to thin discontinuous bands every 2 to 4 m. There are, however, clasts up to 30 cm across at base of unit, and rare but equally large clasts higher. Coal streaks and stems up to 20 cm across scattered, or more commonly concentrated, in the pebble bands. Prominent bands occur in the following intervals:- 6.6 to 7.3 m - five largest clasts are 9, 8, 8, 8, 8 cm. 9.0 to 9.4 m - five largest clasts are 19, 12, 11, 11, 11 cm. 20.6 m - five largest clasts are 10, 10, 8, 7, 7 cm. Laminated medium to dark grey (w/light greenish grey [5GY 8/1]) fine sandstone and coarse siltstone lenses every few m above 20 m. Unit has fragments of that lithology throughout. A lens from 20.2 to 20.6 has abundant stems, roots and several levels with <u>Glossopteris</u> leaves. Less well preserved <u>Glossopteris</u> leaves in lens from 40 to 41 m. Sample 23351 40.0 m Sandstone with <u>Glossopteris</u> . 23350 34.5 m Fine sandstone. 23349 20.3 m Sandstone with <u>Glossopteris</u> and roots. 23348 6.0 m Medium sandstone. 23347 0.7 m Medium sandstone. - erosion surface -	54.0	187.9
32	Sandstone, white to very light grey (w/same, light greenish grey [5GY 8/1] and light brown [5YR 6/4]), medium to coarse, indistinctly laminated and very thin-bedded, massive and platy. Broad channels and trough cross-bedding. Fragments and lenses of grey (w/light greenish grey) very fine sandstone and siltstone. Abundant coal streaks and stem impressions, some branched, up to 20 cm wide and 6 m long. One impression 3 m long has a flared base. Some stems are preserved without flattening by replacement with sand or an iron mineral. Pebbles are similar to those in unit 31 but occur more as discontinuous lenses than as bands. Sample 23346 Pebbles. 23345 1 m Stems. 23344 1 m Sandstone. - erosion surface with about 3 m of wavy relief -	5.3	133.9
31	Sandstone, white to very light grey (w/same and light brown [5YR 6/4]), medium to coarse, indistinctly laminated, mainly massive, but locally platy. Bedding character and pebble bands similar to unit 30. Occasional lenses of light greenish grey [5GY 8/1] (w/same and light brown) sandstone up to 0.5 m thick with dark grey carbonaceous laminae and plant fragments. Stem impressions up to 20 cm wide scattered and in lenses. Five largest clasts at 0.0 m are 10, 9, 8, 7, 7 cm. Five largest clasts at 2.2 m are 28, 19, 17, 16, 13 cm. Sample 23343 1.3 m Fine sandstone. 23342 1.1 m Medium sandstone. - erosion surface -	4.4	128.6

Unit		A	B
30	Sandstone, white to very light grey (w/same and light brown [5YR 6/4]), fine to medium, indistinctly very thin-bedded, slabby to massive. Scattered light-coloured concretions 5 to 10 cm across. Coal streaks and laminae common. Most bedding follows shallow scours up to 30 m long and 1 m deep. A little trough cross-bedding. Bands of pebbles normally only one or two pebbles thick at several levels. In the thickest band (4.0 to 4.2 m) the lithologies are white vein quartz (80 percent), quartz sandstone and orthoquartzite (8 percent), acid volcanic rock including ignimbrite (8 percent), granite, schist and others (4 percent). Note: Percentages estimated except for vein quartz for which 50 pebbles were counted. Proportions of lithologies change with clast size; almost all pebbles less than 3 cm across are white vein quartz, and almost all over 5 cm are not quartz. Five largest clasts at 4.0 m are 21, 17, 16, 15, 14 cm. Five largest clasts at 6.5 m are 10, 10, 8, 7, 7 cm. This band also includes stems up to 10 cm across. Top of bluff at 5 m. Sample 23341 4.8 m Fine sandstone. 23340 4.0 m Pebbles. - erosion surface with about 1 m of wavy relief, but note that the change from Unit 29 to 30 is broadly gradational as there are many erosion surfaces within each unit -	10.0	124.2
29	Sandstone, light grey (w/same and light brown [5YR 6/4]), fine, indistinctly laminated to very thin-bedded, blocky to massive. Parallel and low angle trough cross-bedding and shallow channelling. A few very pale orange [10YR 8/2] medium sandstone lenses. Scattered light coloured concretions 5 to 10 cm across. Laminae and stringers up to 1 m thick of medium to dark grey (w/olive grey [5Y 4/1]) very fine shaly sandstone every 2 to 4 m. Carbonaceous concretions up to 1 m across like those in unit 20 but less common. Stringers with quartz grit and pebbles up to 6 cm long in lower m and 8.7, 21.2, 25.3, 25.7, 27.0 and 28.9 m. Rare granite pebbles up to 20 cm across near base of unit. From 20.0 to 21.2 m the sandstone grades into carbonaceous siltstone with silty coal up to 0.1 m thick at the top. The overlying sandstone has pebbles and cobbles of quartz and quartzite up to 15 cm across near the base. The base of this channel rises from 21.2 to 22.3 m, where samples 36 and 37 were taken. Bluff-former. Sample 23339 22.5 m Fine sandstone. 23338 21.6 m Carbonaceous very fine sandstone. 23337 10 m Fine sandstone with <u>Gangamopteris</u> . 23336 0.2 m Fine sandstone. - interfingering contact -	31.0	114.2
28	Sandstone, like unit 24. Irregular wavy bedding. Plant stems and ?animal markings common. Subequal thickness of dark grey siltstone and fine sandstone with abundant ripple lamination. - sharp contact -	6.1	83.2
27	Sandstone, like unit 20. - sharp contact -	2.5	77.1
26	Siltstone, dark grey (w/same and olive grey [5Y 4/1]), coarse, laminated, shaly to papery. - gradational contact -	1.2	74.6
25	Sandstone, dark grey (w/olive grey [5Y 4/1], moderate brown [5YR 3/4] and light brown [5YR 6/4]), very fine, laminated, shaly. Micaceous. Many bedding planes have low amplitude ripples covered with ?animal trails as in unit 20. - gradational contact -	1.2	73.4

Unit		A	B
24	Sandstone, medium to dark grey (w/very light to medium grey and light brown [5YR 6/4]), fine to coarse, very thin-bedded, platy to slabby. Very carbonaceous. Lenses and laminae with quartz grit and pebbles up to 3 cm across. Abundant plant stem impressions.	1.3	72.2
Sample 23335	0.3 m	Coarse sandstone.	
- erosion surface -			
23	Siltstone, medium grey to black (w/medium to dark grey, olive grey [5Y 4/1], and moderate brown [5YR 3/4]), coarse, laminated, shaly to papery. A few light coloured fine sandstone beds up to 5 cm thick. Rare coal laminae. A leaf fragment with glossopterid venation at 5.2 m.	5.9	70.9
- gradational contact -			
22	Sandstone, very light grey (w/same, light greenish grey [5GY 8/1] and light brown [5YR 6/4]), fine, thin-bedded to unbedded, in lensing units up to 1 m thick, interbedded with very fine sandstone and siltstone, medium grey to black (w/light olive grey [5Y 5/2] and moderate reddish brown [10YR 5/4]) parallel- and ripple-laminated, shaly. Micaceous.	5.7	65.0
- interfingering contact -			
21	Sandstone, very light grey and light greenish grey [5GY 8/1] (w/same, light brown [5YR 6/4] or moderate reddish brown [10YR 5/4]), fine to medium, laminated, massive with a few shaly intervals. Ripple lamination and sweeping low angle cross-bedding and shallow channelling common. Lower m is wavy-bedded, shaly, and has many stem impressions up to 10 cm across. Concretions of stem impressions occur at several other levels also. Scattered small light-coloured concretions 5 to 10 cm across, and dark grey (w/medium to light grey and moderate brown [5YR 4/4]) carbonaceous concretionary lenses up to 1 m thick and 6 m long as in unit 19. Furrows (?animal trails) on rippled surfaces as in unit 20.	8.5	59.3
Sample 23334	3 m	Rippled surface with ?animal trails.	
23333	1.3 m	Very light grey fine sandstone.	
23332	1.3 m	Carbonaceous sandstone from concretion.	
- erosion surface with a wavy relief of about 1 m -			
20	Sandstone, alternating thin beds of fine very light grey and medium to dark grey (w/greenish grey [5GY 6/1], olive grey [5Y 4/1] and light brown [5YR 6/4]), laminated, platy. Very micaceous. Many linguoid rippled surfaces, best developed in the lower 2 m, and covered with straight or slightly curved criss-crossing furrows 1 to 3 mm wide, and vertical tubes also 1 to 3 mm wide. Unit actually consists of two such sequences separated by a sweeping angular unconformity.	5.2	50.8
- interfingering contact -			
<u>Note:</u> The lower 3 m of unit 19 form an extensive rubble-covered platform. The section line was transposed 300 m southwest, close to the east-facing sandstone bluff, and where the dolerite sill has climbed from just below unit 8 to just below unit 19.			
19	Sandstone, very light grey (w/same and light brown [5YR 6/4]), fine to medium, indistinctly laminated to unbedded, massive. Parallel and sweeping low angle trough cross-bedding. Some greenish grey [5GY 6/1] laminae. A few lenses of quartz grit. Bands of light coloured concretions about 10 cm across. The bands follow bedding in both parallel- and cross-bedded units. Unit also has scattered dark grey (w/light to medium grey) carbonaceous sandstone concretionary lenses up to 3 m long.	9.9	45.6

Unit		A	B
Sample 23331	5.9 m Carbonaceous sandstone.		
23330	4.9 m Light-coloured concretion.		
23329	0.5 m Medium sandstone from 300 m south (see note above).		
23328	0.5 m Medium sandstone.		
- sharp contact -			
18	Siltstone, medium-dark grey (w/same, olive grey [5Y 4/1] and light greenish grey [5GY 8/1]), coarse, laminated, papery to shaly. Carbonaceous.	0.3	35.7
Sample 23327	0.3 m Laminated siltstone.		
17	Snow.	1.8	35.4
16	Sandstone, like unit 13.	1.0	33.6
Sample 23326	0.3 m Fine sandstone.		
- sharp contact -			
15	Siltstone, medium-dark grey (w/same and olive grey [5Y 4/1], fine, unbedded, shaly.	0.7	32.6
14	Snow.	5.3	31.9
13	Sandstone, white to very light grey (w/same and light brown [5YR 6/4]), fine to medium, indistinctly laminated to very thin-bedded, massive. Mainly parallel-bedded. Occasional lenses of grit and quartz pebbles up to 4 cm across. Sandstone poorly sorted, with scattered coarse grains mainly of quartz but a little feldspar. Stem impressions 5 and 10 cm across.	1.5	26.6
- sharp contact -			
12	Claystone, dark grey (w/same, olive grey [5Y 4/1] and greyish brown [5Y 3/2]), unbedded, friable, carbonaceous. Light greenish grey [5GY 8/1] coarse sandstone bed from 0.7 to 0.8 m. Unit becomes darker and more carbonaceous to southeast.	1.3	25.1
11	Snow.	3.2	23.8
10	Sandstone, white (w/same and light brown [5YR 6/4]), coarse, laminated to very thin-bedded, slabby to massive. Trough cross-beds 0.1 to 0.3 m thick common. Lenses of quartz grit and rounded white pebbles up to 5 cm across throughout.	2.8	20.6
Sample 23325	0.0 m Coarse sandstone.		
- erosion surface -			
9	Sandstone, light greenish grey [5GY 8/1] (w/same and light brown [5YR 6/4]), fine to medium, ripple-laminated, shaly to platy.	0.8	17.8
- gradational contact -			
8	Siltstone, greenish grey [5GY 6/1] (w/same and light brown [5YR 6/4]), coarse, unbedded, conchoidal-weathering.	1.2	17.0
<u>Note:</u> Section continued at the top of the sill from the northeastern-most part of the platform.			
Dolerite sill, about 120 m thick.			
7	Snow.	4	15.8
6	Sandstone, like unit 3.	1	11.8
5	Snow.	3	10.8
4	Siltstone, like unit 2.	2	7.8
3	Sandstone, very light grey (w/same), fine, indistinctly laminated to unbedded, massive.	2	5.8
<u>Note:</u> Section mainly snow-covered from unit 2 to sill. Thicknesses estimated because of hazardous snow conditions.			

Unit		A	B
2	Siltstone, medium grey to black, coarse, shaly. Very carbonaceous.	1.0	3.8
	- gradational contact -		
1	Sandstone, white (w/same and light brown [5YR 6/4]), fine to medium, laminated to very thin-bedded, massive. Scattered pebbles and boulders at base and in lower 0.6 m. Mainly white rounded quartz and greenish grey [5GY 6/1] siltstone. Largest clast seen is granite boulder at base 0.7 m across. Trough cross-bedding common.	2.8	2.8
	Sample 23324 Fine sandstone.		
	<u>WELLER COAL MEASURES</u> (232 m).		
	- sharp contact -		
	<u>AZTEC SILTSTONE</u> (173 m).		
51	Siltstone, light greenish grey [5GY 8/1] (w/same and light brown [5YR 6/4]), coarse, unbedded, flaky.	1.6	173.1
	Sample 23323 Siltstone.		
	- gradational contact -		
50	Sandstone, white and light greenish grey [5GY 8/1] (w/same and light brown [5YR 6/4]), fine ripple-laminated, shaly to massive. Greenish grey [5GY 6/1] siltstone occurs as stringers and laminae, and as fragments in the sandstone.	2.6	171.5
	Sample 23322 0.2 m Fine sandstone.		
	- sharp contact -		
49	Siltstone, light greenish grey [5GY 8/1] (w/same and light brown [5YR 6/4]), fine, unbedded, massive. Some fine white flecks.	1.8	168.9
	Sample 23321 1.6 m Siltstone.		
48	Snow.	5.0	167.1
47	Siltstone, light greenish grey [5GY 8/1] and greenish grey [5GY 6/1], coarse, laminated, shaly to platy.	4.0	162.1
	- scree-covered contact -		
46	Sandstone, like unit 44.	1.1	158.1
	- snow-covered contact -		
45	Siltstone, like unit 43. Some light greenish grey [5GY 8/1] very fine sandstone beds in upper part.	8.7	157.0
	- scree-covered contact -		
44	Sandstone, greenish grey [5GY 6/1] (w/same and light brown [5YR 6/4]), fine, laminated, massive. Parallel and a little trough cross-bedding. Subvertical tubes 1 to 2 cm across in upper m. Bluff-former.	7.6	148.3
	Sample 23320 0.1 m Fine sandstone.		
	- sharp contact -		
43	Siltstone, coarsely mottled greyish red [10R 4/2] and blackish red [5R 2/2], coarse, unbedded, flaky to shaly. Upper 0.5 m is light greenish grey [5GY 8/1].	5.2	140.7
	- gradational contact -		
42	Siltstone, light greenish grey [5GY 8/1], coarse, unbedded, massive.	1.8	135.5
	- gradational contact -		

Unit	A	B
41 Sandstone, like unit 33. - contact not recorded -	1.3	133.7
40 Siltstone, greyish red [10R 4/2] (60 percent), greenish grey [5GY 6/1] (30 percent), medium grey and greyish purple [5P 4/2], coarse, thin-bedded to unbedded, flaky to shaly. Local mottling of colours. Scattered small nodules 1 to 5 mm across. A few subvertical tubes 0.5 to 1 cm across. - gradational contact -	8.4	132.4
39 Sandstone, light greenish grey [5GY 8/1] and greenish grey [5GY 6/1] (w/same), very fine, ripple-laminated, shaly. - sharp contact -	1.4	124.0
38 Sandstone, light greenish grey [5GY 8/1] (w/same and light brown [5YR 6/4]), fine, unbedded, massive. Scattered spheroidal cemented areas 2 to 10 cm across. Bluff-former. Sample 23319 0.3 m Fine sandstone. - sharp contact -	0.9	122.6
37 Siltstone, greyish red [10R 4/2], coarse, unbedded, flaky. Scattered small nodules about 1 cm across throughout. Mottled greyish red on greenish grey [5GY 6/1] in upper 1.5 m. - irregular gradational contact -	3.6	121.7
36 Siltstone, light greenish grey [5GY 8/1], coarse, indistinctly laminated, slabby. - irregular gradational contact -	0.9	118.1
35 Siltstone, greyish red [10R 4/2], coarse, unbedded, flaky. - gradational contact through 0.1-m-thick medium grey zone -	3.0	117.2
34 Siltstone, light greenish grey [5GY 8/1] and greenish grey [5GY 6/1] (70 percent), greyish red [10R 4/2] (20 percent), and olive grey [5Y 4/1], medium grey, and greyish purple [5P 4/2] (10 percent), coarse, mainly unbedded but some thin-bedded intervals, flaky to massive. Upper 0.5 m is a veined network in light greenish grey siltstone like that of unit 32. <u>Note:</u> Above this level slope-forming units are largely scree or snow-covered. Dolerite sill, 0.3 m thick.	14.2	114.2
33 Sandstone, light greenish grey [5GY 8/1] (w/same and light brown [5YR 6/4]), fine, parallel-laminated, massive. Irregular subvertical and subhorizontal tubes about 1 cm thick. Bluff-former. Sample 23318 0.1 m Fine sandstone. - sharp contact -	1.3	100.0
32 Siltstone, light greenish grey [5GY 8/1] (w/same and light brown [5YR 6/4]), coarse, unbedded, massive. Subvertical veined network with large sandy veins 1 to 3 cm thick and 15 cm apart, and fine sandy veins 2 to 4 mm thick and 5 cm apart. - sharp contact -	0.7	98.7
31 Sandstone, greenish grey [5GY 6/1] and light greenish grey [5GY 8/1] (w/same and light brown [5YR 6/4]), fine, indistinctly laminated, massive. Scattered subvertical tubes about 1 cm wide. - sharp contact -	1.2	98.0

Unit	A	B
30 Sandstone, white and light greenish grey [5GY 8/1] (w/same and moderate brown [5YR 3/4], fine, indistinctly laminated, massive.	1.4	96.8
29 Scree. Dolerite sill, 13.3 m thick.	1.7	95.4
28 Sandstone, light greenish grey [5GY 8/1] and greenish grey [5GY 6/1] (w/same), very fine to fine, ripple-laminated, shaly. - sharp contact -	3.5	93.7
27 Sandstone, light greenish grey [5GY 8/1] fine, parallel- and ripple-laminated. Very good parting lineation in fallen blocks. Sample 23317 0.1 m Fine sandstone. - sharp contact -	1.7	90.2
26 Siltstone, greenish grey [5GY 6/1] (w/same) coarse, indistinctly laminated, flaky to shaly. - gradational contact -	1.7	88.5
25 Siltstone, greenish grey [5GY 6/1] (w/same and light brown [5YR 6/4]), coarse, unbedded, knobbly-weathering. Abundant yellowish grey nodules [5Y 8/1] 3 to 5 cm across. Sample 23316 0.8 m Nodule. - sharp contact -	1.9	86.8
24 Siltstone, greenish grey [5GY 6/1], coarse, ripple-laminated and mudcracked, alternating with sandstone, pinkish grey [5YR 8/1] (w/same and light brown [5YR 6/4]), fine. Mudcracks form two networks; coarse are 1 cm wide and 12 cm apart, fine are 1 or 2 mm wide and 2 cm apart. - sharp contact -	2.2	84.9
23 Sandstone, white (w/same and light brown [5YR 6/4]), fine to medium, laminated, slabby to massive. Parallel and trough cross-bedded. Greenish grey [5GY 6/1] siltstone laminae and stringers common, and fragments up to 25 cm long are abundant at 0.8 m. Sample 23315 0.0 m Medium sandstone. - erosion surface -	3.3	82.7
22 Siltstone, greenish grey [5GY 6/1] (w/same and light brown [5YR 6/4]), coarse, ripple-laminated, shaly. A few subvertical tubes about 1 cm across. Scattered fish plates. - interfingering contact -	3.0	79.4
21 Sandstone, light greenish grey [5GY 8/1] (w/same and light brown [5YR 6/4]), fine, indistinctly laminated, massive. - sharp contact -	3.2	76.4
20 Interbedded greenish grey [5GY 6/1] laminated coarse siltstone and breccia of bone plates mostly 1 to 2 cm across, in beds 0.1 to 0.2 m thick. - sharp contact with large mudcracks 1 cm wide and 15 cm apart and smaller mudcracks 2 mm wide and 3 cm apart -	0.6	73.2
19 Sandstone, white (w/same and light brown [5YR 6/4]), medium, indistinctly laminated, massive, in beds 0.2 to 1 m thick separated by greenish grey [5GY 6/1] siltstone laminae and stringers up to 0.2 m thick. Scattered greenish grey siltstone fragments. Laminae and lenses of quartz grit common. Basal surfaces of sandstone units commonly show load casts with a relief of 5 cm but as much as 30 cm. A few fish plates at the base of some sandstone beds. Bluff-former. Sample 23314 0.0 m Sandstone.	6.0	72.6

Unit		A	B
	- erosion surface with load casts -		
18	Siltstone, greenish grey [5GY 6/1] (w/same and light brown [5YR 6/4]), coarse, unbedded, massive. Shaly in lower m.	3.5	66.6
	- gradational contact -		
17	Sandstone, very pale orange [10YR 8/2], becoming light greenish grey [5GY 8/1] in upper part (w/same and light brown [5YR 6/4]), fine, trough cross-laminated, massive. Upper 0.7 m is fine, ripple-laminated and shaly to platy.	0.9	63.1
	- sharp contact -		
16	Siltstone, greenish grey [5GY 6/1] (w/same and light brown [5YR 6/4]), coarse, parallel-laminated, shaly.	1.6	62.2
	- sharp		
15	Sandstone, yellowish grey [5Y 8/1] (w/same and light brown [5YR 6/4]), fine laminated, massive. Mainly parallel lamination but some ripple and low angle trough cross-lamination. Unit contains quartz grit, white subrounded quartz pebbles up to 1 cm across and greenish grey [5GY 6/1] siltstone fragments at the base, and near the base of some scours. Greenish grey siltstone laminae and stringers up to 0.2 m thick are common. Bluff-former.	7.5	60.6
	Sample 23313 0.2 m Fine sandstone.		
	- erosion surface with 1.8 m of relief over 10 m -		
14	Siltstone, greenish grey [5GY 6/1] (w/same and a little light brown [5YR 6/4]), fine to coarse, laminated, shaly. Several fine very pale orange [10YR 8/2] sandstone beds 0.1 to 0.3 m thick in lower 1.5 m. Well preserved fish plates, an almost complete paleoniscid, and surfaces with abundant conchostracans from 5 to 6.5 m. Lensoid concretions up to 20 cm long, and carbonaceous laminae and rare plant stems from 6.5 to 7 m. The upper 0 to 1.8 m is massive and is cut out to the south by the overlying erosion surface. The uppermost 0.5 m has vertical columns about 1 cm wide that partly destroy an indistinct lamination. Mudcracks in shaly siltstone are common in the scree.	8.8	53.1
	Sample 23312 8.3 m Siltstone.		
	23311 7.3 m Plant stem.		
	23310 7.1 m Four nodules.		
	23309 7 m Siltstone with conchostracans.		
	23308 0.2 m Fine sandstone.		
	- sharp contact -		
13	Siltstone, greenish grey [5GY 6/1] (w/same and light brown [5YR 6/4]), coarse, unbedded, flaky. Interconnected nodules about 1 cm across common. Upper metre has a similar densely nodular appearance but has superimposed a subvertical veined network. Slightly transgressive dolerite sheet 4.6 m thick at 4.3 m.	6.2	44.3
	- sharp contact -		
12	Siltstone, pale greenish yellow [10Y 8/2] (w/greyish orange [10YR 7/4] and moderate yellowish brown [10YR 5/4]), coarse, laminated to very thin-bedded, massive. Thin beds and lenses of oolite-like packed light coloured spheres 1 to 2 mm across. Lenses of nodular siltstone 0 to 0.4 m thick at top.	2.3	38.1
	Sample 23307 2.1 m Nodular siltstone.		
	23306 0.4 m "Oolite".		
	- interfingering contact -		

Unit		A	B
11	Siltstone, like unit 10, but unbedded and with yellowish grey [5Y 8/1] (w/light brown [5YR 6/4]) nodules throughout. One or two intervals with veined networks and with subvertical tubes 1 cm across. Lens of laminated siltstone from 1.3 to 1.6 m. - gradational contact -	7.5	35.8
10	Siltstone, greenish grey [5GY 6/1] (w/light greenish grey [5GY 8/1] and light brown [5YR 6/4]), coarse, ripple-laminated, shaly to massive. Bluff-former. - gradational contact -	1.9	28.3
9	Siltstone, greenish grey [5GY 6/1], (w/light greenish grey [5GY 8/1] and a little light brown [5YR 6/4]), coarse, unbedded, massive. Small nodules in upper and lower metre. Middle has large (5 to 15 cm wide) interconnected nodules. Sample 23305 1.9 m Large nodule. - gradational contact -	3.2	26.4
8	Siltstone, greenish grey [5GY 6/1] (w/same), coarse, laminated, shaly to platy. - sharp contact -	1.5	23.2
7	Siltstone, greenish grey [5GY 6/1] (w/same and a little light brown [5YR 6/4]), coarse, unbedded, massive. Scattered well-defined irregular nodules 1 to 2 cm across. Unit becomes densely nodular and much more light brown-weathering in the upper 0.6 m. Sample 23304 1.1 m Nodular siltstone. - gradational contact -	2.3	21.7
6	Siltstone, greenish grey [5GY 6/1] (w/same and light brown [5YR 6/4]), coarse, unbedded, knobby-weathering. Full of yellowish grey [5Y 8/1] (w/same and light brown) interconnected nodules several mm across. Sample 23303 1.1 m Nodular siltstone. - gradational contact -	1.7	19.4
5	Siltstone, light olive grey [5Y 6/1], (w/same and light brown [5YR 6/4]), coarse, laminated to very thin-bedded, massive. - gradational contact -	1.8	17.7
4	Sandstone, yellowish grey [5Y 8/1], (w/same and light brown [5YR 6/4]), medium in lower metre grading up into fine, laminated to very thin-bedded, massive. Greenish grey [5GY 6/1] siltstone fragments and a few fish plates in lower 0.4 m. Siltstone lenses up to 1 m thick and 50 m or more long occur at 0.9, 2.7 and 5.1 m. Siltstone is greenish grey or dark greenish grey [5GY 4/1], (w/same, light brown, and moderate brown [5YR 3/4]) and contains scattered fish plates. Sample 23302 8.3 m Fine sandstone. 23301 0.9 m Medium sandstone. - erosion surface -	8.8	15.9
3	Siltstone, greenish grey [5GY 6/1], (w/same and light brown [5YR 6/4]), coarse, indistinctly laminated to very thin-bedded, flaky to massive. Some fine sandstone beds up to 5 cm thick. Large brownish black [5YR 2/1] mottles and occasional nodules of pyrite cubes in lower m. Sample 23300 0.1 m Pyrite nodule. - gradational contact -	4.6	7.1

Unit	A	B
2 Sandstone, yellowish grey [5Y 8/1] (w/same and light brown [5YR 6/4]), very fine to fine, unbedded, massive. Scattered subvertical tubes 2 to 3 mm across. - gradational contact -	1.9	2.5
1 Siltstone, greenish grey [5GY 6/1] (w/same and light brown [5YR 6/4]), coarse, unbedded, flaky to massive. <u>AZTEC SILTSTONE</u> (173 m). - sharp contact - <u>BEACON HEIGHTS ORTHOQUARTZITE</u> (6+ m).	0.6	0.6
1 Sandstone, light yellowish grey [5Y 8/1] (w/same or light brown [5YR 6/4]), fine to medium, laminated to very thin-bedded, massive. Mainly parallel bedding but some trough cross-bedding. Laminae and thin beds of quartz grit common. Scattered siltstone fragments up to 5 cm across. Scoured surface at 1.7 m overlain by greenish grey siltstone fragments mostly 2 to 3 cm but up to 40 cm across. Sandstone becomes fine in upper 1.5 m. Sample 23299 0.9 m Fine sandstone. Snow.	5.8	5.8

SECTION P2 - PORTAL MOUNTAIN

Section measured from north side of rock platform just east of rock summit of Portal Mountain to north end of rock summit ridge. Sill at top of P1 is at base of P2 where dyke runs from top of sill to unit 3 2.7 km at 097° from the true summit. Measured with staff and level - RAA PJB 12/70.

Position of base 78° 6.4'S; 159° 16' E. Map elevation 2350 m.

Unit		A	B
<u>LASHLY FORMATION</u> (200+ m).			
30	Fine sandstone and siltstone, light grey to black (w/same), ripple-laminated, shaly. Poorly exposed and disturbed by frost activity on the ridge. A few thin coal beds also.	20	200.0
<u>Note:</u> Top of unit 29 is the top of the summit ridge at the north end and is the top of the measured section.			
29	Sandstone, like unit 25, but w/dusky yellow [5Y 6/4]. Abundant coal streaks and stems. Several bands of siltstone fragments. A partly flattened stem 30 cm wide at 15 m has a silicified centre.	29.0	180.0
Sample 23409	27.2 m Sandstone.		
- slumped contact -			
28	Siltstone and claystone, medium grey to black (w/light grey to black), laminated, shaly. Several coal beds 0.1 m thick. Poorly exposed through scree. <u>Dicroidium</u> present.	6.0	151.0
Sample 23408	2.3 m Carbonaceous siltstone and leaf.		
- gradational contact -			
27	Sandstone, like unit 25.	15.4	145.0
Sample 23407	5.7 m Sandstone.		
- slumped contact -			
26	Siltstone, light grey and medium to dark grey (w/light to medium grey and greenish grey [5GY 6/1]), laminated to very thin-bedded, shaly to massive. Poorly exposed through scree. Striate stems at 1 m. Several thin very carbonaceous intervals. Coal in scree near top.	6.5	129.6
Sample 23406	0.8 m Carbonaceous siltstone.		
- gradational contact -			
25	Sandstone, yellowish grey [5Y 8/1] (w/same, greyish yellow green, [5GY 7/2] and light brown [5YR 6/4]), laminated, massive. Dark grey (w/greenish grey [5GY 6/1]), siltstone laminae common. Siltstone fragments up to 10 cm across and rare white and pinkish quartz pebbles in lower 0.2 m. Coal streaks and stems scattered throughout but concentrated at 4.5, 24.9 and 25.7 m. Another prominent erosion surface overlain by siltstone fragments up to 10 cm across at 9.4 m. Greyish brown weathering [5YR 3/2] sandstone from 27.4 to 27.7 m. Bluff-former.	30.0	123.1
Sample 23404	0.3 m Sandstone.		
Sample 23405	18.0 m Sandstone.		
<u>Note:</u> Units 25 to 29 form the bluffs of the east face of upper part of Portal Mountain.			
- erosion surface -			
24	Siltstone, medium grey to black (w/same), coarse, laminated, shaly. Poorly exposed through scree. Moderately well-preserved <u>Dicroidium</u> assemblage at 3.7 m.	6.0	93.1
Sample 23403	3.7 m Leaves.		
Sample 23402	Scree Coal.		
- scree-covered contact -			

Unit		A	B
23	Sandstone, like unit 18. Largely slumped and in scree. Sample 23401 0.5 m Sandstone.	3.8	87.1
22	Scree.	2.0	83.3
21	Siltstone, like unit 17. Stems, some striate, and carbonaceous material in lower 0.7 m, at 1.5 m and 3.0 m. Roots and rootlets in lower 1.5 m. Sample 23400 0.2 m Carbonaceous siltstone. - sharp contact -	2.7	81.3
20	Siltstone (?tuffaceous), yellowish grey [5Y 8/1] (w/same and light brown [5YR 6/4]), coarse, strongly laminated and very thin-bedded, platy to massive. Very hard noncarbonaceous bluff-former. Slump-folded very fine sandstone interval from 0.3 to 0.5 m with axes striking 160°. Immediately overlying siltstone beds are also contorted. Small mudflowage structures in upper beds. - sharp contact -	3.4	78.6
19	Siltstone, like unit 17. Stems and carbonaceous material in lower 0.5 m, and at 1.3, 3.1, 7.7-7.9, 11.0-11.3 and 12.1-12.3 m. Lenses of fine sandstone 0 to 0.8 m thick at 2.4, 3.7, 7.7 and 9.0 m. Roots and rootlets occur throughout the siltstone. Sample 23398 11.2 m Stems. - gradational contact -	13.7	75.2
18	Sandstone, yellowish grey [5Y 8/1] (w/same and light brown [5YR 6/4]), fine, indistinctly laminated, massive. Mainly parallel bedding but some trough cross-bedding. Abundant coal streaks. Sample 23397 0.5 m Sandstone. - erosion surface -	2.3	61.5
17	Siltstone, very light to medium grey and light olive grey [5Y 6/1] (w/same and yellowish grey [5Y 8/1]), fine to coarse, thick-bedded, slabby to massive. Occasional thin beds of fine sandstone and claystone. Rootlets and roots up to 1 cm across at several levels. Slump folded interval from 3.2 to 3.6 m. Coal streaks abundant at 3.7 m. Abundant striate stems from 9.7 to 10.7 m. <u>Note:</u> Section dropped 4 m at 3.7 m by fault with 1-m-wide breccia zone dipping west at 40°. Sample 23396 9.8 m Stems. 23395 0.5 m Carbonaceous siltstone. - gradational contact -	11.7	59.2
16	Sandstone, like unit 14, but very fine-grained. - erosion surface -	0.3	47.5
15	Siltstone, light olive grey [5Y 6/1] (w/same and greenish grey [5GY 6/1]), fine to coarse, very thin-bedded, massive. Abundant roots and rootlets. - gradational contact -	1.4	47.2
14	Sandstone, very light to light grey (w/yellowish grey [5Y 8/1] and light brown [5YR 6/4]), fine, laminated, massive. Siltstone fragments up to 10 cm across, some grit and rare quartz pebbles in lower 0.2 m. Siltstone laminae and lenses common. Coal streaks in upper m. Sample 23394 0.8 m Sandstone. - erosion surface -	3.2	45.8

Unit		A	B
13	Siltstone, like unit 5, but most is poorly exposed in scree. Soil(?) at 3.9 m. Sparse but well-preserved roots in upper m. A series of straight parallel vertical tubes, probably burrows, about 3 mm wide extends down from the upper contact for about 3 cm.	9.0	42.6
12	Siltstone (?soil), like unit 9. - gradational contact -	0.6	33.6
11	Siltstone, like unit 5. Several fine sandstone beds 0.1 m thick from 1.3 to 1.7 m. - gradational contact -	3.5	33.0
10	Siltstone, medium grey to black (w/same), fine, laminated, shaly to massive. Abundant striate stems and roots. Sample 23393 0.6 m Striate stems. - gradational contact -	0.9	29.5
9	Siltstone, medium grey (w/light olive grey [5Y 6/1]), fine, unbedded, massive and knobbly due to poorly defined vertical columnar structures 5 to 10 cm across (?soil). Only a few specks of carbonaceous material. - gradational contact -	0.5	28.6
8	Siltstone, coarsely mottled greyish purple [5RP 4/2] on light olive grey [5Y 6/1] (w/same), fine, unbedded, massive with conchoidal fracture. Sample 23392 0.6 m Siltstone. - gradational contact -	2.1	28.1
7	Siltstone, like unit 5. Fine sandstone forms ledge from 1.3 to 1.4 m. Roots throughout. Sample 23391 1.3 m Sandstone. - gradational contact -	5.3	26.0
6	Claystone, olive black [5Y 2/1] (w/same), unbedded, shaly. Sample 23390 0.3 m Carbonaceous claystone. - gradational contact -	0.5	20.7
5	Siltstone and minor claystone, light olive grey [5Y 6/1] to greenish grey [5GY 6/1] (w/same or slightly lighter), fine to coarse, laminated to thick-bedded, massive with conchoidal fracture. White flecks 1 to 3 mm wide (probably rootlets) and subvertical white tubes 2 to 5 mm across (roots). A small patch of siltstone weathers dark yellowish orange [10YR 6/6]. - contact appears to interfinger over about 2 m -	1.2	20.2
4	Sandstone, yellowish grey [5Y 8/1] (w/greyish yellow green [5GY 7/2] and light brown [5YR 6/4]), fine, indistinctly ripple-laminated, massive. Some lenses include pockets of quartz grit and a few white and pinkish pebbles up to 3 cm long. Some trough-cross-bedding and parting lineation. Siltstone fragments up to 5 cm across and quartz pebbles up to 3 cm at several levels. Abundant coaly stems up to 5 cm across from 2.5 to 3.2 m. Band of white and pinkish quartz pebbles up to 2 cm across from 3.2 to 3.3 m.	14.3	19.0

Note: Section line transposed about 200 m east on platform 6.2 m above the base of unit 4. The section was measured from there to the foot of the east-facing spur, and then up the spur and the north side of the east face of Portal Mountain.

From 11.8 to 12.4 m there is a siltstone lens about 20 m across with abundant well-preserved roots, striate and branching stems, and with a layer at 12.1 m containing leaves of Dicroidium. Another carbonaceous lens at this level 50 m to the northeast was barren. About 40 m southeast of the plant locality, which is now marked by a cairn, there is a trunk 20 cm wide and at least 4 m long, about 12.5 m above the base of the unit. From 13 to 13.5 m nearby there is a bed of light olive grey [5Y 5/2] (w/greyish brown [5YR 3/2]) ferruginous sandstone.

Sample 23389 12.1 m Stems and leaves including Dicroidium.
 23388 7.5 m Sandstone.
 23387 3.2 m Conglomerate.

- erosion surface -

- 3 Siltstone, light to medium grey (w/greyish yellow green [5GY 7/2] and light brown [5YR 6/4]), coarse grading to fine and in some places to claystone, thick-bedded, massive. Conchoidal fracture. Beds of claystone from 0.5 to 0.6 and 0.8 to 1.0 m with fine white flecks 1 to 3 mm across. Lower contacts gradational, upper contacts are sharp. 2.3 4.7

Sample 23386 0.5 m Claystone.

- gradational contact -

- 2 Sandstone, light grey and yellowish grey [5Y 8/1] (w/greyish yellow green [5GY 7/2] and light brown [5YR 6/4]), very fine to fine, indistinctly ripple-laminated, shaly to slabby. Lenses of white quartzose sandstone 0.1 m thick and concentrations of stems common in lower m. 1.9 2.4

Sample 23385 0.4 m Fine sandstone.
 23384 0.1 m Coarse sandstone.

- interfingering contact -

- 1 Siltstone, medium grey to black (w/medium grey and light olive grey [5Y 5/2]), fine, finely laminated, papery. Some thin fissile coal beds. Plant fragments include a few leaves. Unit locally pinches out. 0.5 0.5

Sample 23383 0.3 m Grey siltstone with leaves.

LASHLY FORMATION (200+ m).

- sharp contact -

FEATHER CONGLOMERATE (204 m - includes 192 m from P1).

- 3 Sandstone, white (w/same and light brown [5YR 6/4]), fine to coarse, indistinctly thin-bedded, massive. Trough cross-beds. Lenses of quartz grit and white to light grey subrounded quartz pebbles up to 4 cm across very common. Upper 0.3 m has a patchy dark yellowish orange [10YR 6/6] stain. 10.1 11.4

Sample 23382 9.0 m Coarse sandstone.

- 2 Siltstone, light greenish grey [5GY 8/1] (w/same), coarse, unbedded, massive. 0.3 1.3

- 1 Snow. 1.0 1.0

Dolerite sill, with 2 of the 30 m exposed here.

Snow.

SECTION P3 - NEAR PORTAL MOUNTAIN

Section measured on southeast face of prominent bluff half-way between Portal Mountain and Angino Buttress. Strata lie between two thick dolerite sills. Base of section is 9.3 km at 215° from Portal Mountain. Measured by eyeheights - RAA PJB 12/70.

Position of base 78° 10.3' S; 158° 55' E. Map elevation 1950 m.

Unit	A	B
Dolerite sill.		
<u>WELLER COAL MEASURES (61+ m).</u>		
4 Sandstone, very light grey (w/light greenish grey [5GY 8/1] and light brown [5YR 6/4]), fine, laminated to very thin-bedded, massive. Parallel and trough cross-bedded. Beds 1 to 3 m thick grade up into ripple-laminated beds similar to unit 3.	15	61
- erosion surface -		
3 Sandstone, yellowish grey [5Y 8/1] with darker thin laminae (w/same and light brown [5YR 6/4]), very fine, ripple-laminated, shaly. Muscovite common in darker laminae.	12	46
2 Sandstone, very light grey (w/yellowish grey [5Y 8/1] and light brown [5YR 6/4]), fine, laminated, massive. Abundant erosion surfaces overlain by intervals with siltstone fragments commonly 10 cm long but only 3 to 4 mm wide. Ripple-lamination and trough cross-bedding common. Cross-bedding dips to 140°.	9	34
1 Sandstone, white to very light grey (w/yellowish grey [5Y 8/1] and light brown [5YR 6/4]), fine to coarse, thin- to thick-bedded, massive, in units 1 to 3 m thick. Interbeds of shaly parallel-laminated, light greenish grey [5GY 8/1] (w/same and light brown [5YR 6/4] to moderate reddish orange [10R 6/6]) siltstone and very fine sandstone with small scale slump features and lenses up to 1 cm thick of white medium sandstone. Scattered rounded white quartz pebbles and less common grey quartzite pebbles up to 5 cm across above 6 m.	25	25
Dolerite sill emerges from snow.		

SECTION P4 - PORTAL MOUNTAIN AREA

Section measured on southwest and west side of small low knob 9.8 km at 118° from the summit of Portal Mountain. Measured by eyeheights in high winds - RAA PJB 12/70. Position of base 78° 8.6' S; 159° 31.5' E. Map elevation 1700 m.

Unit	A	B
Top of knob.		
<u>AZTEC SILTSTONE (7+ m).</u>		
3 Siltstone, light olive grey [5Y 6/1] (w/same and light brown [5YR 6/4]), unbedded, massive. Abundant nodules mostly about 8 cm but up to 25 cm across. They have a coarsely crystalline white core and a thin finely crystalline greenish margin.	1.6	6.9
Sample 23415 Nodules.		
- gradational contact -		
2 Siltstone, light bluish grey [5B 7/1] (w/same and greyish brown [5Y 3/2]), fine to coarse, unbedded, massive. Upper part has indistinct veined network with veins filled with sand.	1.2	5.3
- sharp contact -		
1 Sandstone, white (w/same and light brown [5YR 6/4]), fine to medium, indistinctly bedded, massive, in beds from 0.1 to 1 m thick, with interbeds of siltstone, medium dark grey and greenish grey [5GY 6/1] (w/same and olive grey [5Y 6/1]), coarse, ripple-laminated or unbedded, flaky to shaly. Uppermost siltstone bed has scattered white flecks 1 mm thick and 1 cm long.	4.1	4.1
Sample 23414 0.2 m Sandstone.		
- slumped contact -		
<u>BEACON HEIGHTS ORTHOQUARTZITE (17+ m).</u>		
6 Sandstone, like unit 4. Greenish grey siltstone pebbles common in lower m. Bluff-former.	3.8	16.9
- erosion surface -		
5 Sandstone, greenish grey [5GY 6/1] (w/light greenish grey [5GY 8/1]), very fine, ripple-laminated, shaly.	0.2	13.1
- sharp contact -		
4 Sandstone, white (w/same and light brown [5YR 6/4]), medium to indistinctly laminated to thin-bedded, massive. Several lenses of quartz grit. Some trough cross-bedding. Quartzose. Bluff-former.	3.4	12.9
Sample 23413 1.0 m Sandstone.		
- erosion surface -		
3 Siltstone, greenish grey [5GY 6/1] (w/light greenish grey [5GY 8/1]), coarse, unbedded, shaly to flaky.	0.5	9.5
2 Scree, with abundant greenish grey siltstone fragments.	8.0	9.0
1 Sandstone, white (w/same), fine to medium, unbedded, massive. Quartzose and well sorted.	1.0	1.0
Snow slope.		
Lowest point on outcrop on southwest side of knob has about 5 m of white massive quartzose sandstone broken up and intruded by dolerite.		
Sample 23412 White sandstone.		

SECTION L1 - MOUNT CREAN.

Section measured at south end of long low ridge extending southeast from Mt. Crean. Base of section is at ice level 3.2 km at 150°, and top of section is knob 2.5 km at 150°, from Mt. Crean. Measured with staff and level - RAA PJB 12/70. Position of base 77° 54.5' S; 159° 34.5' E. Map elevation 2100 m.

Unit	A	B
Platform covered with large frost-disturbed sandstone blocks forms top of knob.		
<u>WELLER COAL MEASURES (92+ m).</u>		
23 Sandstone, like unit 19, with coal streaks and stems in lower m and at several other levels. Medium grey (w/moderate yellow brown [10YR 5/4] to dark yellow brown [10YR 4/2]) concretions 0.5 m thick and 1 to 2 m across at 8 m.	11.0	92.3
- slumped contact -		
22 Sandstone, like unit 20.	5.5	81.3
- gradational contact -		
21 Sandstone, like unit 19, but gradually becomes finer towards top, also becomes parallel and ripple-laminated.	8.6	75.8
- sharp contact -		
20 Sandstone, dark grey (w/dark yellowish brown [10YR 4/2]), very fine to fine, ripple-laminated, shaly.	0.9	67.2
- sharp contact -		
19- Sandstone, yellowish grey [5Y 7/3] (w/light brown [5YR 6/4] and greyish orange [10YR 7/4]), fine, parallel-laminated, massive. Some dark grey carbonaceous laminae and stringers up to 0.2 m thick every 2 to 3 m. Scattered light coloured concretions about 5 cm across.	10.0	66.3
- slumped contact -		
18 Siltstone, like unit 16 with 0.3 m of coal at the top.	1.5	56.3
Sample 23449 0.5 m Carbonaceous siltstone.		
- slumped contact -		
<u>Note:</u> Units 15 to 23 dip southwest at 4° 30' and form bluffs.		
17 Sandstone, very light grey (w/same; light brown [5YR 6/4] and pale brown [5YR 5/2]), fine, ripple-laminated, massive, micaceous.	8.1	54.8
Sample 23448 2.0 m Sandstone.		
- slumped contact -		
16 Siltstone, dark grey to black (w/same and light grey), fine to coarse, laminated, shaly to papery. Coal in upper 0.3 m. Poorly exposed in scree.	1.7	46.7
Sample 23447 Scree. Coal.		
- scree-covered contact -		
15 Sandstone, very light grey with dark grey laminae (w/dusky yellow [5Y 6/4], light brown [5YR 6/4] and pale brown [5YR 5/2]), fine, ripple-laminated, shaly to platy, micaceous.	2.0	45.0
- gradational contact -		
14 Sandstone, like unit 11. Trough cross-bedded.	11.6	43.0
- slumped contact -		

Unit		A	B
13	Sandstone, white (w/same and light brown [5YR 6/4]), fine, ripple-laminated, blocky. - erosion surface -	1.4	31.4
12	Sandstone, like unit 6.	0.5	30.0
11	Sandstone, very light grey (w/same and a little light brown [5YR 6/4]), coarse, slabby to massive. Mainly parallel and ripple bedding. Lenses of quartz and feldspar grit and fine conglomerate. Carbonaceous laminae and plant stems. Fine sandstone lenses in upper part. - erosion surface -	9.0	29.5
10	Sandstone, like unit 6. - sharp contact -	2.7	20.5
<u>Note:</u> Sequence from unit 5 to unit 9 dips to 190° at 13°.			
9	Sandstone, like unit 3. Sample 23446 0.3 m Coarse sandstone. - sharp contact -	1.5	17.8
8	Sandstone, like unit 6. - sharp contact -	2.1	16.3
7	Coal, bright. Contains mostly stem fragments. - gradational contact -	0.2	14.2
6	Sandstone, very light and dark grey (w/light grey, light brown), fine grained, ripple-laminated, shaly. Contains laminae and thin lenses of coarse sandstone and grit. - sharp contact -	1.1	14.0
5	Sandstone, like unit 3. Trough cross-bedding. - slumped contact -	3.6	12.9
4	Sandstone, dark grey to black (w/same), fine grained, laminated, shaly. Poorly exposed in scree. - scree-covered contact -	2.9	9.3
3	Sandstone, white (w/same), medium to coarse, very thin-bedded, massive. Stringers of dark grey carbonaceous fine sandstone. Trough cross-bedding. - slumped contact -	1.7	6.4
2	Sandstone, light and dark grey (w/same), fine, laminated, shaly, grades up through black shaly siltstone into about 0.5 m of coal. Poorly exposed in scree. Sample 23445 Scree Coal. 23444 0.5 m Carbonaceous sandstone. - slumped contact -	3.2	4.7
1	Sandstone, white (w/same, light brown), medium very thin-bedded, massive. Conglomerate lens in lower m contains quartz and quartzite pebbles mostly 1 to 3 cm but up to 30 cm across. At the base are a few weathered granite clasts 10 cm across. The rest are almost all subrounded to well-rounded white vein quartz and light-dark grey quartzite. Planar cross-bedding 0.8 m thick. Sample 23443 Sandstone. 23442 Pebbles.	1.5	1.5

WELLER COAL MEASURES (92+ m).

- erosion surface -

Unit		A	B
<u>AZTEC SILTSTONE</u> (135 m).			
35	Sandstone, like unit 33 but fine grained and without concretions.	2.0	135.1
34	Rubble covered platform. Rubble on top of the ridge is derived mainly from lithologies of unit 33 but to the northwest subrounded pebbles of white quartz and grey quartzite mostly 2 to 5 cm but up to 30 cm across become abundant.	10.3	133.1
33	Siltstone and very fine sandstone, greyish yellow green [5GY 7/2] (w/same and light brown [5YR 6/4]), very thin- to thick-bedded, massive. Contains bands of irregular iron-bearing concretions from a few cm to 20 cm thick, light olive grey [5Y 5/2] (w/greyish brown [5YR 3/2], moderate brown [5YR 4/4] and brownish black [5YR 2/1]). These are especially well-developed from 0.6 to 1.5 m. Veined networks from 1.8 to 2.7 m and 3.3 to 4.0 m. Bluff-former. Forms a broad platform on top of the ridge.	4.0	122.8
	Sample 23441 3.3 m Sandstone.		
	23440 0.9 m Concretion.		
- gradational contact -			
32	Siltstone, mainly brownish black [5YR 2/1], but with some greenish grey and a little greyish red (w/same), fine, flaky. Poorly exposed in scree. Upper 1 m contains poorly developed iron-bearing concretionary layers like those in next unit.	5.6	118.8
31	Jumbled debris of siltstone.	2.0	113.2
30	Siltstone, greenish grey (w/same), fine to coarse, thin-bedded, platy.	0.6	111.2
	Sample 23439 0.4 m Siltstone.		
- sharp contact -			
29	Sandstone, yellowish grey [5Y 8/1] (w/same and light brown [5YR 6/4]), fine, indistinctly parallel-laminated, massive. Bluff-former. Unit is crossed by an east-west striking fault with throw of 1.5 m.	1.6	110.6
	Sample 23438 0.1 m Sandstone.		
- sharp contact -			
28	Siltstone, mainly greyish red (w/same), fine to coarse, unbedded, massive and flaky. Coarse greenish grey and greyish purple siltstone areas common. Subvertical nodules from 3 to 4 m. At 7.5 m a fine sandstone lens thickens from 0.5 to 1.5 m towards south, and has mudcracked upper surface. Upper 4 m becomes mainly greenish grey and medium grey as coarse mottling on the greyish red.	11.0	109.0
	Sample 23437 10.7 m Grey siltstone.		
- gradational contact vertically and horizontally -			
27	Siltstone, greyish yellow green [5GY 7/2] (w/light brown [5YR 6/4], greenish grey [5GY 6/1] and dark yellowish brown [10YR 4/2]), fine to coarse, ripple-laminated to very thin-bedded, platy to slabby, with some finer shaly beds. Alternating resistant coarse siltstone (or in places very fine sandstone) and weak fine siltstone. Thin greyish red siltstone beds form about 20% of the unit. Ripple marks at 1.5 m (λ 2 cm; h 0.2 cm).	5.3	98.0
- sharp contact -			
26	Siltstone, mainly greyish red [5R 4/2] (w/same), unbedded, massive. Veined networks from 1.9 to 2.9, 4.4 to 5.3, 7.1 to 8.1 and 13.3 to 14.0 m. Pale reddish brown weathering nodules extend for 0.5 to 1 m below some networks. Veins are greenish grey [5G 6/1] to light bluish grey [5B 7/1] and greyish purple [5P 4/2]. Tubes become abundant above 10.2 m.	14.0	92.7
	Sample 23436 3.7 m Nodules.		

Unit		A	B
	- sharp contact -		
25	Sandstone, like unit 22. Contains scattered subvertical tubes 1 cm across.	1.3	78.7
	- gradational contact -		
24	Siltstone, greyish red [5R 4/2] (w/same) with some light grey and brownish grey [5YR 4/1] in middle of unit, fine, thick-bedded to unbedded, flaky to shaly. Ripple-laminated very fine sandstone lens from 2.0 to 2.6 m. Sample 23435 1.0 m Siltstone.	3.9	77.4
	- sharp contact -		
23	Sandstone, like unit 18. Prominent bluff-former. Sample 23434 1.8 m Sandstone.	5.5	73.5
	- sharp contact -		
22	Sandstone, light greenish grey [5G 8/1] (w/same), fine, ripple-laminated, massive. Contains greyish red [5R 4/2] and some greyish purple [5P 4/2] tubes 1 cm across which are more common towards the top. Bands of irregular pale red [5R 6/2] sandstone concretions 5 to 10 cm across near base and at 0.6 m. Bluff-former. Sample 23433 0.4 m Sandstone.	1.3	68.0
	- sharp contact -		
21	Siltstone, greyish red [5R 4/2] and massive, and greenish grey [5G 6/1] to light bluish grey [5B 7/1] and laminated, in 4 units of approximately equal thickness. The greenish grey siltstone has abundant subvertical tubes. - gradational and interfingering contact -	4.9	66.7
20	Sandstone, like unit 18. Thin beds of greyish red [5R 4/2] and greenish grey [5G 6/1] siltstone common from 1.0 to 2.5 m. Above this subvertical greyish red tubes about 1 cm across are abundant. Sandstone becomes very fine in upper part. - sharp contact -	4.2	61.8
19	Siltstone, greyish red [5R 4/2] (w/same), fine to coarse, unbedded, massive. Several light grey to greenish grey [5GY 6/1] fine sandstone lenses totalling 0.5 m in lower 2 m. Abundant subvertical tubes and very irregular tubes from 1.5 to 2.5 m and in upper 1 m. Upper 0.2 m is greenish grey [5GY 6/1] siltstone. - gradational contact -	3.9	57.6
18	Sandstone, yellowish grey [5Y 8/1] (w/light greenish grey [5GY 8/1] and light brown [5YR 6/4]), fine, finely laminated, massive. Mainly ripple-laminated but some trough cross-laminae. Greenish grey laminae common [5GY 6/1]. Bluff-former. - sharp contact -	2.3	53.7
17	Siltstone, greyish red [5R 4/2] (w/same), coarse, unbedded, massive. Becomes finely nodular above 1.3 m. Irregular splotches of light grey to greenish grey [5GY 6/1] up to 0.3 m across common. Sample 23432 2.3 m Siltstone. - gradational and interfingering contact -	3.2	51.4
16	Siltstone, light grey to greenish grey (w/same), coarse, very thin-bedded, slabby. A few thin greyish red [5R 4/2] beds. - interfingering contact -	1.5	48.2

Unit		A	B
15	Sandstone, very light grey (w/same and light brown [5YR 6/4]), fine, trough cross-laminated, massive. Bluff-former. Sample 23431 0.3 m Sandstone. - sharp contact -	0.6	46.7
14	Siltstone, greyish red [10R 4/2] becoming mottled with greyish purple [5P 4/2] in upper 2 m (w/same), fine, unbedded, flaky. Beds of greenish grey to light bluish grey [5B 7/1] (w/same) coarse siltstone from 2.6 to 3.0 and 4.5 to 4.8 m. Subvertical tubes and veins 0.5 to 1 cm across from 2.4 m. Upper 2 m has large light to medium grey subvertical veins. Interval from 5.0 to 7.6 m has interconnected (w/greyish orange [10YR 7/4]) nodules about 1 cm across in lower part and increasing to 5 cm in upper part. - gradational contact -	9.7	46.1
13	Siltstone, greenish grey (w/same), coarse, unbedded, massive with knobby to flaky weathering. Lower 1 m has light grey (w/moderate yellowish brown [10YR 5/4]) interconnected nodules 2 to 5 cm across. - interfingering contact -	2.1	36.4
12	Sandstone, yellowish grey [5Y 8/1] (w/same and light brown [5YR 6/4]), fine, parallel-laminated, massive, locally friable. Greenish grey siltstone laminae in lower 1 m. Lower 0.2 m has siltstone fragments up to 2 cm across common. Upper 1 m has subvertical tubes about 1 cm across. Bluff-former. Sample 23430 0.8 m Sandstone. - erosion surface -	3.9	34.3
11	Sandstone, light to medium grey (w/light brown [5YR 6/4] and light greenish grey [5GY 8/1]), very fine, ripple-laminated, slabby, in beds up to 0.3 m thick separated by thin greenish grey siltstone interbeds. Scattered subvertical tubes about 1 cm across. - gradational contact -	0.7	30.4
10	Siltstone and claystone, like unit 8. Occasional mudcracked surfaces usually on ledges just above the thin fine sandstone beds at 1.4, 1.9 to 2.1, 3.0 to 3.3, 3.8 to 3.9 and 5.4 m. Symmetrical ripplemarks at 1.4 m (λ 12 cm; h 1 cm), 3.2 m (λ 3 cm; h 0.3 cm), 3.8 m (λ 8 cm; h 2 cm), 3.9 m (λ 3 cm; h 0.5 cm), and 5.4 m (λ 2 cm; h 0.3 cm). Non-carbonaceous greenish grey [5GY 6/1] siltstone with veined network from 2.8 to 3.0 m. Conchostracans abundant at 7.9 m and scattered at 2.4 and 3.4 m, and probably occur at other horizons also. Scattered fish plates throughout. Sample 23429 7.9 m Conchostracans and stems. 23428 2.7 m Carbonaceous claystone. 23427 0.5 m Gypsiferous claystone.	11.1	29.7
9	Sandstone, like unit 4. - sharp contact -	1.0	18.6
8	Siltstone and claystone, dark grey to black (w/same, light olive grey [5Y 5/2] and [5Y 6/1]), finely interlaminated, shaly to papery, carbonaceous. Beds of hard fine dark grey (w/pale yellowish brown [10YR 6/2]) sandstone in lower 0.4 m. Fish plates common throughout, but most common in lower 0.4 m. Greenish grey non-carbonaceous siltstone with veined network in upper 0.4 m. Veins of gypsum 1 to 3 mm thick, parallel, or on curved surfaces subparallel, to bedding.	2.6	17.6

Unit		A	B
Sample 23426	0.6 m Siltstone.		
23425	0.4 m Sandstone.		
	- gradational contact -		
7	Sandstone, like unit 4.	1.1	15.0
	- sharp contact -		
6	Siltstone and claystone, dark grey to black (w/same, light olive grey [5Y 5/2]), finely interlaminated, shaly to papery, carbonaceous.	0.8	13.9
	- gradational contact -		
5	Alternating sandstone and siltstone-claystone. Sandstone is very light grey (w/dark yellowish brown [10YR 4/2]), fine, in lensing beds up to 0.1 m thick. Interlaminated siltstone and claystone is medium to dark grey (w/light olive grey [5Y 5/2]), finely laminated, shaly to papery, in beds also up to 0.1 m thick, though there are predominantly siltstone-claystone intervals from 0 to 2.6 and 4.5 to 5.2 m. Sand-filled mudcracks common at several levels. In places these are contorted by compaction. Dusky red [5R 3/4] iron-bearing concretions 1 to 3 cm across scattered and in patches.	6.6	13.1
Sample 23424	6.6 m Concretions.		
	- gradational contact -		
4	Sandstone, yellowish grey [5Y 8/1] (w/dark yellowish brown [10YR 4/2] and moderate brown [5YR 3/4]), fine to medium, parallel and ripple-laminated, slabby to massive. Occasional thin carbonaceous laminae and stringers (w/greenish grey) up to 0.2 m thick. Mudcracks and ripples in siltstone partings in scree. Bluff-former.	3.9	6.5
Sample 23423	1.7 m Sandstone.		
	- sharp contact -		
3	Claystone, greyish black (w/olive grey [5Y 4/1], olive black [5Y 2/1]), silty, finely laminated, shaly to papery, carbonaceous. Lens of sandstone like unit 4 from 0.8 to 1.0 m. Symmetrical ripples in upper surface (λ 10 cm; h 1 cm).	1.4	2.6
Sample 23422	1.3 m Claystone.		
	- sharp contact -		
2	Sandstone, light olive grey [5Y 5/2] (w/same and pale yellowish orange [10YR 8/6]), fine, very thin-bedded, platy. Upper 0.1 m has mudcracks 0.3 cm thick and 3 cm apart.	0.5	1.2
	- sharp contact -		
1	Sandstone, yellowish grey [5Y 7/2] (w/pale olive [10Y 6/2]), very fine, laminated, platy. Siltstone fragments in lower 0.1 m.	0.7	0.7
	<u>AZTEC SILTSTONE</u> (135 m).		
	- sharp contact -		
	<u>BEACON HEIGHTS ORTHOQUARTZITE</u> (4+ m).		
1	Sandstone, yellowish grey [5Y 8/1] to white (w/same), fine, very thin-bedded, massive.	3.7	3.7
Sample 23421	0.7 m Sandstone.		
	Glacier ice with patches of snow.		

SECTION L2 - MOUNT CREAN.

Lower part of section measured up southeastern part of outcrop previously visited by Gunn and Warren (1962) on east side of long ridge extending southeast from Mount Crean. The middle and upper parts were measured on the ridge itself up to the base of the 80-m-thick sill just below the summit. Base of the section is 1.1 km at 90° from the summit. Measured with staff and level - RAA PJB 1/71. Position of base 77° 53.0' S; 159° 33.5' E. Map elevation 2300 m.

Unit		A	B
	Sandstone or conglomerate estimated at 20 m thick to the summit of Mt. Crean.		
	Dolerite sill, about 80 m thick. Only lower third climbed but climbable with less snow and in good weather.		
	<u>FEATHER CONGLOMERATE</u> (73+ m).		
10	Conglomerate, like unit 6. Largest clasts are 10, 8, 7, 6, 6 cm. - erosion surface -	3.3	72.5
9	Sandstone, like unit 5. Siltstone fragments up to 10 cm across in lower m. - erosion surface -	6.0	69.2
8	Conglomerate, like unit 6. Largest 5 clasts in lower m are 6, 6, 5, 5, 5 cm. Sample 23484 0.3 m Conglomerate.	7.5	63.2
7	Sandstone, like unit 5.	2.8	55.7
6	Conglomerate, deeply weathered moderate yellowish brown [10YR 5/4], pebbly, thick-bedded, massive. Coarse quartz sandstone matrix and lenses. Pebbles mainly subrounded to rounded white to pinkish vein quartz. Only other lithologies observed were rare dark grey cherty pebbles. - erosion surface -	8.2	52.9
5	Sandstone, like unit 3, but deeply weathered moderate yellowish brown. Sample 23483 11.4 m Grit. - erosion surface -	13.8	44.7
4	Sandstone, dusky yellow [5Y 6/4] (w/same, light olive grey [5Y 5/2], and light brown [5YR 6/4]), fine, but very poorly sorted with scattered grit and pebbles up to 2 cm across, unbedded, massive. Ferruginous concretionary band from 1.1 to 1.3 m. Sample 23482 0.6 m Fine sandstone. - sharp contact -	2.0	30.9
3	Sandstone, white to light grey (w/same and light brown [5YR 6/4]), fine to very coarse and gritty, very thin-bedded, massive. Abundant trough cross-bedding 0.2 to 0.4 m thick. Lenses of white and pinkish pale red [10R 6/2], moderate orange pink [10R 7/4] and moderate reddish orange [10R 6/6] quartz pebbles up to 2 cm across. Scattered iron concretions up to 3 cm across. - erosion surface -	2.0	28.9
2	Siltstone, white (w/yellowish grey [5Y 8/1] and dark yellowish orange [10YR 6/6]), coarse, unbedded, massive.	0.7	26.9
1	Sandstone, white to light grey (w/white and light brown [5YR 6/4]), fine to very coarse, laminated to very thin-bedded, massive, non-carbonaceous. Trough cross-bedded. Some thin greenish grey and black laminae. Scattered iron nodules 1 to 5 mm across in lower 10 m increase to 5 cm in upper part of unit. Ferruginous	26.2	26.2

greyish olive [10Y 4/2] (w/dark yellowish orange [10YR 6/6] and greyish brown [5YR 3/2]) concretionary structures 30 cm thick and commonly several metres long are scattered and in several bands in lower 10 m. Lenses of white quartz grit and fine conglomerate with some siltstone fragments throughout. Pinkish quartz pebbles appear at about 15 m. Prominent bluff-former with top of bluff at 20 m.

Sample 23481 14.8 m Coarse sandstone.
23480 0.1 m Coarse sandstone.

FEATHER CONGLOMERATE (73+ m).

- erosion surface -

WELLER COAL MEASURES (254 m).

40	Siltstone, black (w/same), gritty, laminated, shaly, coaly.	0.4	253.7
39	Sandstone, like unit 31.	1.2	253.3
	Sample 23479 1.1m Sandstone.		
	- erosion surface -		
38	Sandstone, like unit 36.	1.5	252.1
	- erosion surface -		
37	Siltstone, medium to dark grey (w/light to medium grey), coarse, laminated, shaly. Grades into coal in upper 0.2 m.	1.0	250.6
	- gradational contact -		
36	Sandstone, light grey in lower 1 m grading into interbedded light and dark grey (w/same and light brown [5YR 6/4]), coarse in lower m grading into fine, ripple-laminated, shaly to platy.	1.9	249.6
35	Coal, like unit 15.	0.1	247.7
	- sharp contact -		
34	Siltstone, like unit 16.	2.3	247.6
	- sharp contact -		
33	Coal, like unit 15.	0.8	245.3
32	Scree with many coal blocks.	1.9	244.5
31	Sandstone, light grey (w/white, olive grey [5Y 3/2], moderate yellowish brown [10YR 5/4], dark yellowish orange [10YR 6/6] and light brown [5YR 6/4]), coarse, indistinctly thin-bedded, massive. Abundant coal laminae and streaks. Upper 0.2 m is finer, ripple-laminated and more iron-stained.	1.0	242.6
30	Scree, mainly with blocks of coal.	1.8	241.6
29	Siltstone and claystone, dark grey to black (w/same, light olive grey [5Y 6/1] and light brown [5YR 6/4]), fine, finely inter-laminated, papery to shaly. Very carbonaceous.	1.2	239.8
	- gradational contact -		
28	Sandstone, like unit 23. White quartz pebble lens at base.	2.6	238.6
	- erosion surface -		
27	Siltstone, black (w/same), coarse, laminated, shaly, coaly.	0.4	236.0
	- gradational contact -		
26	Sandstone, dark grey to black (w/same and light grey), very fine, ripple laminated, shaly.	0.5	235.6
	- sharp contact -		

Unit	A	B
25 Sandstone, like unit 23. Becomes finer and ripple-laminated in upper m. - gradational contact -	2.6	235.1
24 Sandstone, light grey (w/white), coarse, indistinctly thin-bedded, massive. Abundant coal streaks. Upper 0.6 m is fine quartz pebble conglomerate. Bluff-former. Sample 23478 1.4 m Coarse sandstone. - erosion surface -	3.6	232.5
23 Sandstone, light grey (w/white, light brown [5YR 6/4] and yellowish grey [5Y 7/2]), fine to medium, laminated, massive. Coal streaks abundant. White subrounded quartz pebbles up to 8 cm across and a few quartzite and schist pebbles in lenses in upper 0.4 m. Bluff-former. - erosion surface -	2.4	228.9
22 Siltstone, dark grey to black (w/same, but light olive grey [5Y 6/1] in upper 0.5 m), fine, laminated, papery to shaly. Coaly from 0.7 to 1.0 m. - gradational contact -	1.5	226.5
21 Siltstone, medium grey to black (w/same, light olive grey [5Y 6/1] and light brown [5YR 6/4]), fine and coarse, laminated to very thin-bedded, shaly to platy. - gradational contact -	4.1	225.0
20 Sandstone, yellowish grey [5Y 8/1] (w/same and light brown [5YR 6/4] and moderate reddish brown [10R 4/6] in lower 0.2 m), medium to coarse, laminated, massive. Carbonaceous laminae. Quartz grit and pebbles up to 6 cm and coal fragments common in thin lenses at base. Trough cross-bedding common. Upper 1.3 m is fine-grained and ripple-laminated. Sample 23477 0.1 m Sandstone. - erosion surface -	3.7	220.9
19 Coal, like unit 15. - sharp contact -	0.2	217.2
18 Siltstone and claystone, like unit 16. Occasional light coloured sandstone laminae and thin beds. - sharp contact -	2.7	217.0
17 Coal, like unit 15. - scree-covered contact -	2.4	214.3
16 Siltstone and claystone, dark grey to black (w/same, light olive grey [5Y 6/1] and light brown [5YR 6/4]), fine, finely inter-laminated, papery to shaly. Very carbonaceous. Several coal bands 5 cm thick from 2.7 to 3.2 m. - gradational contact -	4.7	211.9
15 Coal, bright, banded. Made up of stem fragments 1 to 3 cm across. Sample 23476 2.2 m Coal. 23475 0.6 m Coal. - sharp contact -	3.0	207.2

Unit		A	B
14	Siltstone, dark grey to black (w/same), fine, laminated, shaly. Very carbonaceous.	0.9	204.2
	- gradational contact -		
13	Sandstone, yellowish grey [5Y 7/2] with dark grey lenses (w/same, greyish orange [10YR 7/4] and light brown [5YR 6/4]), fine, ripple-laminated, shaly to massive. Carbonaceous laminae common.	1.3	203.3
	- gradational contact -		
12	Siltstone, medium grey to black (w/light olive grey [5Y 6/1], and light grey [5YR 6/4]), coarse, laminated, massive. Contains stems and <u>Glossopteris</u> in middle of unit. Becomes more carbonaceous towards top.	2.3	202.0
	Sample 23474 1.1 m <u>Glossopteris</u> (on stem?).		
	- gradational contact -		
11	Sandstone, yellowish grey [5Y 7/2] (w/light grey and light brown [5YR 6/4]), fine, ripple-laminated, shaly to massive. Carbonaceous laminae and stringers every 1 m throughout unit.	3.3	199.7
	- sharp contact -		
10	Sandstone, like unit 8, but w/light brown [5YR 6/4 - 5/6] and is mainly parallel-bedded. Bluff-former. Pebbles are sparse but are in prominent lenses or beds, which also contain concentrations of stems and siltstone fragments, at 9.2 to 9.4 m (5 largest pebbles: 11, 11, 13, 15, 20 cm), 12.0 to 14.7 m (10, 11, 12, 13, 16 cm), 19.7 m (8, 8, 9, 12, 16 cm). A pebble band at 19.7 m is underlain by a lens of dark grey (w/light greenish grey [5GY 8/1] siltstone and very fine sandstone 0 to 0.8 m thick and 7 m long with abundant well-preserved <u>Glossopteris</u> in upper 0.1 m. Stems of branching and calamitid types common throughout lens.	37.4	196.4
	Sample 23473 37.1 m Sandstone.		
	23472 20.0 m Sandstone.		
	23471 19.7 m <u>Glossopteris</u> .		
	23470 0.9 m Sandstone.		
	- erosion surface -		
9	Sandstone, like unit 8, but white and medium and with larger more abundant pebbles. Lower 2 m has large medium grey (w/moderate to dark yellowish brown [10YR 5/4-4/2] concretionary structures 0.5 to 1 m thick and up to several metres long). Pebbles are grey quartzite (most common), non-vein quartz (about 20% of the rock), leucogranite, acid volcanics, gneiss, and schist.	17.0	159.0
	<u>Note:</u> Unit forms first platform above snow on southeast ridge of Mt. Crean.		
	Sample 23469 2.0 m Sandstone.		
	23468 0.2 m Pebbles loose.		
	23467 0.2 m Pebbles in place.		
	- gradational contact -		
8	Sandstone, very light grey and yellowish grey (w/same and light brown [5YR 6/4]), fine to medium, laminated to very thin-bedded, massive. Carbonaceous micaceous laminae are common and concentrations of coal streaks and stems up to 30 cm. Trough cross-bedding and broad scours are abundant. Occasional conglomerate lenses and scattered pebbles, mainly of rounded white vein quartz up to 8 cm, but larger pebbles are of varied lithologies (see unit 9).	34.0	142.0
	Sample 23466 22.5 m Sandstone.		
	23465 1.0 m Sandstone.		

Unit		A	B
7	Snow slope.	96	108.0
6	Sandstone, light grey (w/white and a little light brown [5YR 6/4], coarse to gritty, indistinctly very thin-bedded, massive. Several lenses 0.1 to 0.3 m thick of dark grey carbonaceous fine sandstone. Lens at 2.3 m contains <u>Glossopteris</u> . Bluff-former.	3.8	12.2
	Sample 23464 2.5 m Coarse sandstone.		
	23463 2.3 m <u>Glossopteris</u> .		
	- erosion surface -		
5	Sandstone, light and dark grey (w/same and light brown [5YR 6/4]), fine, ripple-laminated, in light and dark beds up to 10 cm thick, shaly to massive.	1.9	8.4
4	Sandstone, very light grey to dark grey (w/very light grey and light brown [5YR 6/4]), medium very thin-bedded, massive. Trough cross-bedded. Abundant carbonaceous laminae and fragments.	1.9	6.5
	- erosion surface -		
3	Coal, bright, banded. Some shaly intervals.	1.4	4.6
2	Sandstone, very light grey to black (w/same, light brown [5YR 6/4], fine, ripple-laminated, shaly.	1.9	3.2
1	Sandstone, white to yellowish grey [5Y 8/1] (w/same and light brown [5YR 6/4], fine, laminated, massive. Trough cross-bedding and ripple laminae. Lower 0.2 m has pebble lenses with clasts mainly of white subrounded vein quartz; also some light to dark grey quartzite. A few carbonaceous laminae and coal streaks. Bluff-former.	1.3	1.3
	Sample 23462 0.3 m Sandstone.		
	<u>WELLER COAL MEASURES</u> (254 m).		
	- erosion surface -		
	<u>AZTEC SILTSTONE</u> (131 m).		
31	Sandstone, yellowish grey [5Y 7/2] (w/same, light brown), very fine to fine, unbedded to indistinctly thin-bedded, massive. Light olive grey [5Y 5/2] iron concretions 5 cm across scattered and in bands 0.3 m thick. Root horizons from 13.8 to 14.1 m.	14.6	131.1
	Sample 23461 13.0 m Fine sandstone.		
30	Snow	5.9	116.5
29	Siltstone, like unit 28, but bluff-forming. Several harder concretionary lenses 0.1 to 0.2 m thick (w/moderate to dark yellowish brown [10YR 5/4 - 4/2]).	1.1	110.6
	- gradational contact -		
28	Siltstone, greyish olive [10Y 4/2] (w/same and moderate yellowish brown [10YR 5/4]), coarse, very thin- to thick-bedded, shaly to slabby. Fish plates at 0.5 m.	1.3	109.5
	- gradational contact -		
27	Siltstone, greyish red [10R 4/2] mottled with greenish grey [5G 6/1], greyish purple [5P 4/2] and medium grey (w/same), coarse, unbedded, massive. Lower 1 m is mostly greenish grey with knobby weathering. Below 3 m there are scattered sub-vertical greyish orange [10YR 7/4] tubes and nodules 0.5 cm across.	6.9	108.2
26	Sandstone, like unit 22. Iron concretions common.	1.0	101.3
	- sharp contact -		

Unit	A	B
25 Sandstone, very light grey to yellowish grey [5Y 7/2] (w/same and light brown [5YR 6/4]), fine, laminated to very thin-bedded, massive. Mainly trough cross-bedded but some parallel bedding. Scattered siltstone fragments up to 30 cm across, and scattered iron concretions 1 to 5 cm across. Bluff-former. Sample 23460 7.9 m Sandstone. - erosion surface -	10.4	100.3
24 Siltstone, like unit 18. - scree-covered contact -	2.9	89.9
23 Siltstone, greyish red [10R 4/2] (w/same), with a few beds of greenish grey [5G 6/1], fine, unbedded, shaly to flaky. - gradational contact -	2.8	87.0
22 Sandstone, yellowish grey [5Y 7/2] (w/same, greenish grey [5G 6/1] and light brown [5YR 6/4]), fine and very fine irregularly laminated, massive with knobby weathering. - erosion surface -	0.8	84.2
21 Claystone, greyish red [10R 4/2] (w/same). Slight greenish grey mottling [5G 6/1] becomes dominant in upper 1 m. Some veined networks leaving only a few patches of greyish red. - scree-covered contact -	2.5	83.4
20 Claystone, medium grey (w/greenish grey [5GY 6/1] to olive grey [5Y 5/2]), finely laminated and unbedded, papery to shaly. - sharp contact -	2.6	80.9
19 Sandstone, yellowish grey [5Y 8/1] (w/same and light brown [5YR 6/4]), fine to medium, laminated to very thin-bedded, massive. Siltstone fragments scattered throughout. Mainly trough cross-bedded but finer and ripple-laminated in upper metre. Mudcracks upper surface. Bluff-former. Sample 23459 0.1 m Sandstone. - erosion surface -	3.9	78.3
18 Siltstone, greenish grey [5GY 6/1] (w/same, moderate yellowish brown [10YR 5/4]), fine, with claystone, ripple-laminated at intervals 0.1 to 0.8 m thick, slabby to massive. Scattered white flecks and tubes 0.4 cm across. - erosion surface -	3.8	74.4
17 Sandstone, like unit 10. 1.5 to 3.0 m. Several siltstone bands 0.1 m thick. Siltstone fragments up to 10 cm across at 3.0 and 4.3 m. Pits and straight furrows 0.1 to 0.3 cm across on many surfaces (animal tracks?). Bluff-former. Sample 23458 1.5 m Sandstone. - snow-covered contact -	6.0	70.6
16 Siltstone, greenish grey [5GY 6/1] (w/same, light olive grey [5Y 5/2]), coarse, unbedded, massive. - irregular gradational contact -	1.2	64.6
15 Siltstone, greyish red [10R 4/2] (w/same), with small yellowish grey [5Y 7/2] nodules. Irregular broad patches of medium grey massive to flaky siltstone. - irregular contact -	1.7	63.4

Unit	A	B
14 Very fine sandstone and siltstone, like unit 12, with tubes (roots). - gradational contact -	0.9	61.7
13 Sandstone, like unit 10. - erosion surface -	3.0	60.8
12 Siltstone and very fine sandstone, greenish grey and light greenish grey [5GY 6/1 - 8/1] (w/same, light olive grey [5Y 6/1 - 5/2] and moderate yellowish brown [10YR 5/4]). Siltstone is fine to coarse grained, very thin- to thick-bedded, slabby. Scattered subvertical tubes 0.5 to 1 cm across at several levels between 1.2 to 1.4 m and veined network is underlain by a thin patchy layer of greyish red. Mudcracks 1.2 cm across and 5 cm apart at 0.5 m. - gradational contact -	2.2	57.8
11 Sandstone, like unit 10, but very fine and ripple-laminated. Linguoid ripplemarks (λ 3 cm; h 0.3-0.5 cm). - gradational contact -	1.5	55.6
10 Sandstone, very light grey (w/same and light brown [5YR 6/4]), fine, laminated, blocky to massive. Trough cross-bedding, parallel and ripple laminae. Abundant greyish red [10R 4/2] (2 cm) and greenish grey [5GY 6/1] (up to 20 cm) beds in lower 2 m. Laminae and lenses up to 0.1 m thick of light olive grey [5Y 6/1] to greenish grey [5GY 6/1] weathering siltstone, and very fine micaceous sandstone from 1 to 3 m. Prominent siltstone fragment horizon at 6.8 m. Bluff-former. Sample 23457 3.3 m Sandstone. - erosion surface -	7.6	54.1
<u>Note:</u> At this point section line comes adjacent to dolerite dyke and then heads west to highest point on outcrop.		
9 Siltstone, mottled light bluish grey [5B 7/1] and greyish purple [5P 4/2] on greyish red [10R 4/2] (w/same), coarse, unbedded, massive. Extensive veined network in above colours. Indistinctly laminated light greenish grey fine sandstone from 3.0 to 3.6 m thick is underlain by a very nodular greyish orange [10YR 7/4] weathering interval 2 m thick. Nodules 1 to 3 cm across are scattered, and spheroidal and elongate in the form of subvertical columns. - gradational contact -	4.9	46.5
8 Siltstone, light to dark grey (w/pale olive [10Y 6/2]), fine to coarse, laminated, shaly. Fish plates at several levels. Excellent crossopterygian head and trunk at 0.6 m. - sharp contact -	1.5	41.6
7 Fine sandstone and minor siltstone, like unit 5, with a lens of fine sandstone up to 1.5 m thick at base. Several intervals of veined networks with white flecks in between. - sharp contact -	3.6	40.1
6 Siltstone, light greenish grey and greenish grey (w/same), sandy, unbedded, massive. Well-developed veined networks with sand-filled veins 0.1 to 0.3 cm wide. - gradational contact -	1.3	36.5
5 Siltstone, like unit 3, with subordinate interbedded fine sandstone units 0.4 m thick as in unit 1. From 4.3 to 6.9 m sandstone dominates and forms bluffs. Above 3 m unit weathers more greenish grey [5GY 6/1]. Mudcracks and rippled surfaces common,	8.6	35.2

and many surfaces have indistinct straight furrows 0.1 to 0.2 cm wide (animal tracks?). Veined networks from 3.1 to 3.4 m and 7.9 to 8.1 m. Fish plates occur in both sandstone and siltstone. Bothriolepis abundant at 4.3 m. Fish plates on upper surfaces of sandstone at several levels, and scattered in dark grey siltstone. Fish abundant at 8.0 m.

- slumped contact -

- | | | | |
|---|---|-----|------|
| 4 | Sandstone, yellowish grey [5Y 7/2] (w/greyish orange [10YR 6/4] and moderate to dark yellowish brown [10YR 5/4 - 4/2]), fine thin- to thick-bedded, flaggy to slabby. A few mudcracks and ripple marks. | 0.7 | 26.6 |
|---|---|-----|------|

- sharp contact -

- | | | | |
|---|---|-----|------|
| 3 | Siltstone, medium grey to black (w/same, dusky yellow [5Y 6/4] and moderate brown [5YR 4/4]), fine to coarse laminated, papery to shaly. Lower 0.5 m has hard dark grey very fine sandstone beds interbedded with black siltstone containing fish plates and scales. The siltstone contains conchostracans. Upper 0.2 m w/greenish grey [5GY 6/1] and has a sand-filled veined network. The finer beds have sheets of gypsum 0.1 to 0.3 cm thick parallel and subparallel to bedding. | 2.0 | 25.9 |
|---|---|-----|------|

- interfingering contact -

- | | | | |
|---|--|-----|------|
| 2 | Sandstone, white to yellowish grey [5Y 8/2] (w/same and light brown [5YR 6/4]), fine, indistinctly parallel-bedded, massive. | 9.2 | 23.9 |
|---|--|-----|------|

Sample 23455 9.1 m Sandstone.

- | | | | |
|---|--|------|------|
| 1 | Interbedded fine sandstone and siltstone. Sandstone is very light grey, white and yellowish grey [5Y 8/1] (w/same and light brown [5YR 6/4]), fine, indistinctly parallel-laminated, massive, in beds up to 1 m thick. Siltstone is greenish grey [5GY 6/1] (w/light olive grey [5Y 6/1]), coarse, laminated to unbedded, in beds mostly 1 to 10 cm thick, except for one massive bed from 1 to 2 cm thick. Mudcracks 0.5 cm wide and 5 cm apart are common. A few ripple marks are present. Root horizon at 2.0 m. Scattered yellowish grey [5Y 8/1] weathering nodules 5 to 10 cm apart from 6 to 8 m. | 14.7 | 14.7 |
|---|--|------|------|

Sample 23454 3.0 m Sandstone.

23453 1.5 m Siltstone.

- interfingering contact -

BEACON HEIGHTS ORTHOQUARTZITE (27+ m).

- | | | | |
|---|---|------|------|
| 5 | Sandstone, white to yellowish grey [5Y 8/1] (w/same and a little light brown [5YR 6/4]), fine, laminated to very thin-bedded, massive. Parallel and ripple-laminated, and small trough cross-beds. One or two stringers of greenish grey coarse siltstone up to 0.1 m thick in lower 2 m. Lenses of medium sandstone containing siltstone fragments up to 20 cm across at several levels. | 10.6 | 26.9 |
|---|---|------|------|

Sample 23452 10.4 m Sandstone.

23451 0.3 m Sandstone.

- erosion surface -

- | | | | |
|---|--|-----|------|
| 4 | Sandstone, light bluish grey [5B 7/1] (w/greenish grey [5G 6/1]), very fine ripple-laminated, blocky. Common white flecks and tubes up to 0.5 cm across. | 3.4 | 16.3 |
|---|--|-----|------|

- gradational contact -

- | | | | |
|---|---|-----|------|
| 3 | Siltstone, light bluish grey [5B 7/1] (w/greenish grey [5G 6/1]), sandy, unbedded, massive to flaky. Upper 0.7 m contains abundant yellowish grey [5Y 7/2] weathering nodules 2 to 5 cm across. | 2.6 | 12.9 |
|---|---|-----|------|

- gradational contact -

Unit		A	B
2	Sandstone, white (w/same and light brown [5YR 6/4]), fine, indistinctly laminated (mainly parallel), massive, very quartzose. Several beds 0.1 m thick of light bluish grey [5B 7/1] (w/greenish grey [5G 6/1]) very fine sandstone, mainly in upper 3 m where there are also scattered poorly defined sub-vertical tubes 3 to 5 mm across and white flecks. Sample 23450 0.2 m Sandstone. - slumped contact -	8.6	10.3
1	Sandstone, light bluish grey [5B 7/1] (w/light olive grey [5Y 6/1] to dusky yellow [5Y 6/4]), very fine, unbedded, flaky to massive. Moraine and scree, about 10 m. Snow slope.	1.7	1.7

SECTION L3 - MOUNT CREAN.

Section measured up steep south-facing slope 2.3 km at 43° from the summit of Mount Crean. Measured with staff and level - RAA PJB 1/71.

Position of base 77° 52.1' S; 159° 34.5' E. Map elevation 2300 m.

Unit	A	B
Climbing dolerite sheet.		
<u>LASHLY FORMATION</u> (157+ m).		
26 Sandstone, like unit 24.	7.3	157.4
Sample 23502 0.2 m Sandstone.		
- erosion surface -		
25 Siltstone, white to very light grey (w/same and light brown [5YR 6/4]), fine to coarse, unbedded, massive. Ripple-laminated fine sandstone from 1.0 to 1.5 m.	3.2	150.1
- scree-covered contact -		
24 Sandstone, yellowish grey [5Y 7/2] (w/same and light brown [5YR 6/4]), fine, very thin-bedded, massive. Mainly parallel-bedded. Light brown weathering concretions 5 cm across scattered and in lenses. Lenses of burnt (?carbonised) stems up to 20 cm across from 4.5 to 7.5 m. Broad scours overlain by siltstone fragments and stem impressions every 1 to 3 m above this.	57.3	146.9
Sample 23501 38.0 m Sandstone.		
23500 20.2 m Sandstone.		
23499 0.8 m Sandstone.		
23 Scree.	17.3	89.6
22 Sandstone, yellowish grey [5Y 7/2] (w/same, dusky yellow [5Y 6/4], and moderate yellowish orange [10YR 7/6]), fine, indistinctly very thin-bedded, massive. Slump folds 1.5 m high. Abundant coal streaks and carbonaceous siltstone fragments. Becomes finer towards top.	2.6	72.3
- erosion surface and interfingering contact -		
21 Siltstone, like unit 19. Calamitid stems.	2.2	69.7
Sample 23498 0.1 m Siltstone.		
20 Sandstone, like unit 15.	1.2	67.5
- erosion surface -		
19 Siltstone, like unit 16, with dark grey carbonaceous bands and calamitid stems. Roots and rootlets throughout.	4.3	66.3
- gradational contact -		
18 Sandstone, like unit 15.	2.0	62.0
- erosion surface -		
17 Sandstone, very light grey (w/same and a little light brown [5YR 6/4]), fine, indistinctly trough cross-bedded, massive. Lenses of siltstone fragments up to 25 cm across from 0 to 1 m. Lenses in upper part of unit of siltstone, medium grey (w/yellowish grey [5Y 7/2] to greyish yellow [5Y 8/4]), fine to coarsely laminated, shaly to platy, interbedded with fine ripple-laminated sandstone.	2.6	60.0
- erosion surface -		

Unit		A	B
16	Siltstone, light grey (w/very light grey and yellowish grey [5Y 7/2]), fine to coarse, unbedded, massive. Roots and rootlets common. Tubes on upper surface as in unit 1. - sharp contact -	2.2	57.4
15	Sandstone, very light grey (w/same, yellowish grey [5Y 8/1] and a little light brown [5YR 6/4]), fine ripple-laminated, massive. - gradational contact -	1.7	55.2
14	Sandstone, very light grey and yellowish grey [5Y 7/2] (w/same, light brown and moderate reddish brown [10R 4/6]), fine, very thin-bedded, massive. Bedding mainly parallel but some trough cross-bedding. Lenses of siltstone fragments up to 15 cm across in lower 0.8 m. Coal streaks and stems in lower 5 m, especially below 1.5 m. Bed of quartz grit and white quartz pebbles up to 7 cm across from 4.3 to 4.9 m, also includes siltstone fragments up to 20 cm across and abundant coal streaks. A few pebbles scattered and in thin bands higher in unit. Scattered carbonised and replaced tree-trunks up to 30 cm across from 8 to 10 m. Bluff-former. Sample 23497 14.4 m Sandstone. 23496 4.3 m Conglomerate. 23495 0.4 m Sandstone. - erosion surface -	14.7	53.5
13	Siltstone, light greenish grey [5GY 8/1] to medium grey (w/yellowish grey [5Y 7/2] and dusky yellow [5Y 6/4]), fine to coarse, laminated massive. Several fine sandstone beds up to 0.5 m thick with abundant siltstone fragments at the base and with coaly stems throughout. Some stems are branched and have knot holes, others are calamitids. Roots and rootlets common. Sample 23494 7 m Stems and leaves. 23493 6 m Roots.	9.3	38.8
12	Sandstone, like unit 2. - erosion surface -	2.2	29.5
11	Siltstone, medium dark grey (w/light olive grey [5Y 5/2]), coarse, unbedded, massive. - gradational contact -	0.7	27.3
10	Sandstone, very light grey (w/dusky yellow [5Y 6/4]), fine, very thin- to thick-bedded, massive. Abundant coal streaks, stems up to 5 cm across, pebbles of white vein quartz up to 3 cm across and siltstone fragments up to 10 cm across at base. Coaly material also abundant above and below siltstone finger. Upper part of unit has patches weathering dark yellowish orange [10YR 6/6]. Bluff-former. Sample 23492 0.5 m Sandstone. - erosion surface at 23.0 m and 24.5 m separated by finger of medium grey siltstone from unit 9 -	3.6	26.6
<u>Note:</u> Upper part of section measured 200 m west of lower 9 units.			
9	Siltstone and very fine sandstone, like unit 1. Scattered roots and rootlets. Some medium grey carbonaceous beds with poorly preserved stems. - sharp contact -	7.4	23.0
8	Siltstone, like unit 4. Scattered roots and rootlets. - gradational contact -	1.6	15.6

Unit		A	B
7	Siltstone and very fine sandstone, like unit 1. Siltstone fragments in very fine sandstone at base of unit. - erosion surface -	1.5	14.0
6	Siltstone, light grey (w/dusky yellow [5Y 6/4] and light brown [5YR 5/6]), fine to coarse, unbedded, massive. Scattered roots and rootlets. - gradational contact -	2.5	12.5
5	Sandstone, like unit 2. Coal streaks and fragments common. - erosion surface -	0.3	10.0
4	Siltstone, very light grey (w/dusky yellow [5Y 6/4]), fine, unbedded, massive. Scattered roots and rootlets, some forming large dendritic patterns up to 0.4 m across. Light grey in upper 0.3 m. - gradational contact -	1.7	9.7
3	Siltstone and very fine sandstone, like unit 1. Scattered roots and rootlets. - gradational contact -	1.4	8.0
2	Sandstone, very light grey (w/same and light brown [5YR 6/4]), fine, mainly parallel-laminated, massive. Sample 23491 0.0 m Sandstone. - sharp contact -	1.8	6.6
1	Siltstone and very fine sandstone, light greenish grey [5GY 8/1] (w/greyish yellow green [5GY 7/2], yellowish grey [5Y 7/2] and light brown [5YR 5/6]), laminated to thick-bedded, massive. A little ripple and convolute lamination but mainly parallel lamination. Scattered branched white flecks 1 to 3 mm across and tubes about 1 cm across (roots and rootlets). Upper surface has close-spaced vertical tubes 4 mm across and extending down 2 cm.	4.8	4.8
<u>LASHLY FORMATION (157+ m).</u>			
Dolerite sills, as climbing sheets from east and west. Intrusion approximately along Feather/Lashly contact, though 3 or 4 m of strata may have been displaced by the intrusion.			
<u>FEATHER CONGLOMERATE (107+ m).</u>			
5	Sandstone, deeply weathered yellowish grey [5Y 7/2], light olive grey [5Y 5/2] and light brown [5YR 6/4], medium to very coarse and gritty, laminated to very thin-bedded, massive. Finely speckled appearance. Trough cross-bedded. Quartz pebble beds with pebbles up to 4 cm across from 5.5 to 6.0 m. Finer pebble beds become more common higher in unit. Quartz grit (w/light olive grey and light brown [5YR 5/6]) from 7.0 to 12.6 m, and a largely scree-covered lens of shaly fine sandstone from 12.6 to 13.4 m. Between 18 and 28 m beds weather dusky yellow [5Y 6/4], dark yellowish orange [10Y 6/6] and light brown [5YR 6/4]. Lens of light greenish grey [5GY 8/1] siltstone from 35.0 to 35.5 m. Sample 23490 22.0 m Sandstone. 23489 1.3 m Sandstone. - scree-covered contact -	35.5	107.2
4	Siltstone, greyish olive [10Y 4/2] (w/dark yellowish orange [10YR 6/6]), strongly jointed. Sample 23488 0.4 m Siltstone.	2.0	71.7

Unit	A	B
<p>3 Sandstone, yellowish grey [5Y 8/1] (w/same, and light brown [5YR 6/4] with light olive grey laminae [5Y 5/2]), medium to very coarse, laminated to very thin-bedded, massive. Some bands and lenses of white and pinkish quartz grit and pebbles. Light greenish grey [5GY 8/1] fine siltstone fragments up to 10 cm across with greyish yellow rims [5Y 7/4] in lenses at several levels. Trough cross-bedded. Light greenish grey siltstone lens from 8.3 to 8.4 m. Beds weather more light brown with dusky yellow [5Y 6/4] above 9 m and include some dark yellowish orange [10YR 5/6] bands. A few fine ripple-laminated greyish olive [10Y 4/2] sandstone beds. Beds of quartz pebbles common in upper 5 m.</p> <p>Sample 23487 36.4 m 23486 8.1 m Sandstone.</p> <p style="text-align: center;">- erosion surface and interfingering contact -</p>	37.7	69.7
<p>2 Sandstone, deeply weathered yellowish grey [5Y 7/2] and light olive grey [5Y 5/2] with bands of moderate brown [5YR 4/4], fine to medium, laminated to very thin-bedded, massive. Laminae and lenses of grit and small quartz pebbles common. Trough cross-bedding 0.1 m thick common. Concentrations of siltstone fragments up to 10 cm across.</p> <p>Sample 23485 0.8 m Sandstone.</p> <p style="text-align: center;">- gradational contact -</p>	10.5	32.0
<p>1 Conglomerate, deeply weathered light brown [5YR 6/4] and greyish orange [10YR 7/4], fine and moderately sorted with coarse sand matrix and lenses, very thin- to thick-bedded, massive. Pebbles are almost all white vein quartz mostly 1 to 2 cm but up to 5 cm across with a few grey quartzite and pinkish quartz. Parallel and trough cross-bedded. Lenses and beds up to 0.4 m thick of dusky yellow [5Y 6/4] and light brown [5YR 6/4 - 5/6] weathering fine sandstone. Irregular dusky brown [5YR 2/2] to black films. A few bands 0.5 m thick of concretions (w/greyish brown [5YR 3/2], blackish red [5R 2/2] and light olive brown [5Y 5/6]) with cores up to 0.2 m across of moderate yellow [5Y 7/6].</p> <p><u>FEATHER CONGLOMERATE</u> (107+ m).</p> <p>Scree, about 10 m.</p> <p>Snow.</p> <p>Rolling moraine and snow.</p>	21.5	21.5

SECTION T1 - TABULAR MOUNTAIN.

Section measured up west face of north-striking ridge about 4 km west of the summit of Tabular Mountain. Section begins 200 m north of where the sill at the base of the section appears from under the snow 5.0 km at 279° from the summit of Tabular Mountain. Top of section is extensive platform at Feather-Lashly contact. Measured with staff and level - RAA PJB 1/71. Position of base 77° 50.8' S; 160° 1' E. Map elevation 2150 m.

Unit	A	B
<u>LASHLY FORMATION</u> (100+ m but not measured).		
1 Sandstone, light grey (w/greenish grey [5GY 6/1] and yellowish grey [5Y 5/2]), fine.	1	1
Sample 23420 1 m Sandstone.		
- gradational contact over 0.5 m -		
<u>FEATHER CONGLOMERATE</u> (197 m).		
8 Sandstone, very light grey to white (w/same and light brown [5YR 6/4]), medium to coarse, indistinctly very thin-bedded, slabby and massive. Trough cross-bedded. Lenses of white quartz pebbles up to 0.5 m thick throughout. Top of unit is extensive platform on the northwest ridge.	15.1	196.7
Sample 23516 8.2 m Sandstone.		
- erosion surface -		
7 Sandstone, deeply weathered, speckled light grey and light olive [5Y 5/2] and light brown [5YR 6/4]), fine to medium with common quartz grit lenses, laminated, massive. Parallel and ripple lamination and trough cross-bedding. A few siltstone lenses up to 0.5 m thick and horizons of siltstone fragments. Moderate brown [5YR 4/4] fine sandstone band from 16 to 18 m.	26.8	181.6
Sample 23515 9.2 m Sandstone.		
- gradational contact -		
6 Conglomerate, like unit 4, but pinkish quartz grit and pebbles common.	5.0	154.8
- gradational contact -		
5 Sandstone, deeply weathered yellowish grey [5Y 7/2] inside and white to very light grey and light brown [5YR 6/4] outside, fine to very coarse and gritty, very thin-bedded, massive. Scattered white vein quartz pebbles mostly 1 to 2 cm but up to 3 cm across, with pinkish quartz grit and pebbles common. A few horizons of light grey siltstone fragments up to 10 cm across.	35.1	149.8
Sample 23514 12 m Pinkgrit.		
23513 1.0 m Sandstone.		
- gradational contact -		
4 Conglomerate, very light grey (w/same, white and light brown [5YR 5/6]), fine with fine to coarse sand matrix and lenses, very thin-bedded, massive. Trough cross-bedded. Mainly subrounded white to light grey vein quartz pebbles, but a few are pinkish quartz and light grey quartzite. Largest pebbles in lower 2 m are 4, 4, 5, 5, 5 cm. Pinkish pebbles become more common above 2 m. Pebble size increases at 10 m (7, 7, 8, 9, 9 cm) and above, and there is a coarse lens from 20.3 to 25.2 m (10, 10, 10, 10, 13 cm). Occasional dusky brown [5YR 2/2] to medium dark grey bands 0.1 to 0.3 m thick in which the white quartz pebbles are stained pale yellowish orange [10YR 8/6].	62.7	114.7

Unit		A	B
Sample 23512	61.7 m Grit.		
23511	34.1 m Fine sandstone.		
23510	11.0 m Pebbles.		
23509	0.3 m Fine sandstone.		
	- erosion surface -		
3	Sandstone, very light grey to white (w/same and light brown [5YR 5/6]), fine to very coarse and gritty (mainly white subangular quartz), indistinctly laminated to very thin-bedded, blocky to massive. Parallel and trough cross-bedding. Poorly sorted fine sandstone lens from 2.3 to 2.7 m grades up through ferruginous concretionary layer and has mud-cracked upper contact. Similar bed without mudcracks from 5.7 to 6.0 m. Spheroidal ferruginous concretions 2 to 5 cm across scattered sparsely throughout. Unit becomes more gritty and finely conglomeratic above 15 m.	25.2	52.0
Sample 23508	13.7 m Grit.		
	- erosion surface -		
2	Sandstone, light grey (w/yellowish grey [5Y 7/2] and greyish yellow [5Y 8/4]), fine to medium but very poorly sorted and gritty, unbedded, massive. Grit-filled mudcracks 1 cm wide and 10 to 20 cm apart on upper surface.	4.7	26.8
1	Sandstone, white to very light grey (w/same and light brown [5YR 6/4]), fine to very coarse and gritty, very thin-bedded, massive. Trough cross-bedded. Concretionary bands in lower 10 m are 0.5 m thick and 1 to 3 cm apart, and weather dusky yellow [5Y 6/4], light to moderate brown [5YR 5/6 - 4/4] and moderate reddish brown [10R 4/5]. Several pale greenish yellow [10Y 8/2] fine sandstone lenses up to 0.2 m thick, and bands of light greenish grey [5GY 8/1] siltstone fragments up to 10 cm across. Pinkish quartz grains in grit and pebble beds appear at about 7 m. Small ferruginous concretions 1 to 3 cm across appear at 15 m and increase in size to 3 cm near top of unit. Lens of dusky yellow and moderate brown fine poorly sorted sandstone with gradational lower and erosional upper contact from 18.0 to 19.1 m. Local fine conglomerate lenses in upper 2 m. Bluff-former.	22.1	22.1
Sample 23507	10.5 m Sandstone.		
	- sharp contact -		
	<u>WELLER COAL MEASURES (43+ m).</u>		
8	Sandstone, light grey (w/very light grey), fine, laminated, massive. Some carbonaceous laminae.	0.3	42.6
7	Snow.	4.4	42.3
6	Siltstone, dark grey to black (w/same and very light grey), coarse, laminated, shaly. Poorly exposed in scree. Abundant coal blocks from 4 to 5 m.	6.0	37.9
	- scree-covered contact -		
5	Sandstone, like unit 1.	0.2	31.9
	- gradational contact -		
4	Sandstone, light grey (w/white and moderate yellowish orange [10YR 7/6]), very coarse to gritty, very thin to thick-bedded, massive. Lenses of subangular white vein quartz pebbles up to 5 cm across at base and top of unit. Carbonaceous laminae and coal streaks common.	1.1	31.7
Sample 23506	0.4 m Coarse sandstone.		
	- erosion surface -		

Unit		A	B
3	Sandstone, medium grey to black (w/very light grey to dark grey and yellowish grey [5Y 7/2]), fine, ripple-laminated, shaly, micaceous. Moderately preserved <u>Glossopteris</u> impressions. Sample 23505 2.0 m <u>Glossopteris</u> .	2.4	30.6
	- gradational contact -		
2	Sandstone, very light grey (w/white, a little light brown [5YR 6/4] and greyish yellow [5Y 8/4]), very coarse and gritty, indistinctly very thin-bedded, massive. Trough cross-bedded. A few carbonaceous laminae, thin beds and coal streaks. Lenses of carbonaceous fine ripple-laminated sandstone above 18 m. Bluff-former. Sample 23504 3.0 m Sandstone.	22.8	28.2
	- scree-covered contact -		
1	Sandstone, medium and dark grey (w/same, light olive brown [5Y 5/6] and light olive grey [5Y 5/2]), very fine to fine, finely parallel and ripple-laminated, shaly, micaceous. Poorly exposed in scree. Rare moderately preserved <u>Glossopteris</u> . Coal in scree in upper 1 m. Sample 23503 3.0 m <u>Glossopteris</u> . <u>WELLER COAL MEASURES</u> (43+ m). Dolerite sill, about 20 m exposed. Glacier ice.	5.4	5.4

SECTION BH - BEACON HEIGHTS

Section exposed low on north-facing slope beneath col between East and West Beacon 3.2 km at 035° from the summit of West Beacon. Base of section is edge of Taylor Glacier. Measured with rod and level - PJB BPK 11/70. Position of base 77° 48.2' S; 160° 51.5' E. Map elevation 1300 m.

Unit	A	B
<u>ALTAR MOUNTAIN FORMATION.</u>		
<u>Odin Arkose (3+ m).</u>		
1 Sandstone, light grey (w/same and light brown), medium to gritty, very thin- to thin-bedded, massive. Lenses of subrounded mainly quartz pebbles up to 2 cm across. Trough cross-bedding common. Exposure extends a short distance higher, and disappears under scree. - erosion surface with about 30 cm relief (<u>Heimdall Erosion Surface</u>) -	3	3
<u>NEW MOUNTAIN SANDSTONE (130+ m).</u>		
2 Sandstone, very light grey (w/same and light brown), medium, laminated to very thin-bedded, shaly to platy. Mainly parallel bedding. Intervals up to 30 cm thick of honeycomb weathering probably have been burrowed. Thicker intervals with horizontal and vertical burrows about 1 cm across from 4.5 to 9.5, 35.5 to 36.5 and 48.0 to 49.0 m. Low angle planar cross-beds from 0.5 to 1 m thick in lower 30 m. Symmetrical straight-crested ripple marks (λ 1.5 cm) at 48 m.	88	130
1 Scree slope, mainly very light grey medium sandstone. Slope covered with dolerite blocks. Upper part forms platform and probably represents the top of the underlying dolerite sill. Platform is 70 m above base of slope. Ice wall forms margin of Taylor Glacier.	42	42

SECTION B1 - BEACON HEIGHTS

Section is 1.0 km west of section BH, and base is about 60 m above gully at edge of Taylor Glacier 3.0 km at 019° from West Beacon. Measured by eyeheights - PJB 11/70. Position of base 77° 48.1' S; 160° 49.5' E. Map elevation 1300 m.

Unit	A	B
<u>NEW MOUNTAINS SANDSTONE (41+ m).</u>		
2 Sandstone, white (w/same and light brown), fine to medium, laminated or thin- to thick-bedded. Bedding mainly parallel but some planar and trough cross-beds 0.3 to 1.5 m thick. Foresets locally oversteepened. Bored intervals subequal to massive intervals in lower 5 m. Cross-bedding more common higher. Asymmetrical ripple marks (λ 3 cm) in scree. Sample 23520 1 m Sandstone. - gradational contact -	30	41
1 Sandstone, white (w/same and light brown), medium to very coarse, laminated to very thin-bedded, massive. Trough cross-bedding. Grit in upper m contains pebbles of quartz, acid volcanic rocks and rare granite up to 3 cm long. Rare bone- or shell-like fragments also found. Bluff-former. Sample 23519 11 m Gritty sandstone. 23517 1 m Coarse sandstone. Moraine and scree.	11	11

SECTION B2 - BEACON HEIGHTS

Base of section is about 400 m west of section B1 and slightly lower. The section begins 3.0 km at 012° from West Beacon at the lowest outcrop above the 60 m scree slope from the edge of the Taylor Glacier. The section line runs approximately south up the west side of the scree-free gully to the 150-m-thick sill in the Beacon Heights Orthoquartzite. The section was continued above the sill from a spur north-northwest of West Beacon up the north face and to the base of the summit dolerite. Measured with rod and level - PJB BPK 11/70.

Position of base 77° 48.1' S; 160° 78.5' E. Map elevation 1300 m.

Unit	A	B
Dolerite sill, 40 m thick (Harrington and Speden, 1962), to summit of West Beacon.		
<u>WELLER COAL MEASURES (20+ m).</u>		
1 Sandstone, light grey (w/same and white), fine to very coarse, laminated, massive. Trough cross-bedded and parallel-bedded. Lenses of subrounded to rounded clasts up to 15 cm long at base and in lower 2 m. Lithologies include quartz, quartzite, quartz sandstone, siltstone and claystone. Carbonaceous sandstone beds up to 1 m thick at 6, 11 and 18 m.	20	20
Sample 23591 11 m Sandstone.		
23590 1 m Sandstone.		
23589 0 m Grit.		
- erosion surface (<u>Pyramid Erosion Surface</u>) -		
<u>AZTEC SILTSTONE (120 m).</u>		
22 Alternating siltstone, light greenish grey, and sandstone, white, very fine, in beds from 1 to 20 cm thick. Most beds have mudcracks and ripple marks. Parting lineation common.	22	120.2
Sample 23588 21 m Sandstone.		
21 Sandstone, light greenish grey (w/white and light brown), fine to medium, laminated to very thin-bedded, massive. Trough cross-beds 0.1 to 0.3 m thick. Abundant green siltstone fragments up to 6 cm long.	3	98.2
- sharp contact -		
20 Siltstone, light greenish grey (w/same), thin-bedded to unbedded, massive. Scattered fish plates up to 5 cm long. Greenish iron concretionary lens 5 m long and 0.4 m thick in middle of unit.	3.5	95.2
Sample 23587 2.5 m Sandstone.		
19 Sandstone, white (w/same), fine, alternates with siltstone, greenish grey, in beds from 1 cm to 1 m thick. Most beds are about 0.1 m thick. Sandstone beds lens in and out. Some show convolute bedding and slumped foresets.	9.5	91.7
- gradational contact -		
18 Sandstone, like unit 13.	6	82.2
Sample 23586 0 m Sandstone.		
- interfingering contact -		
17 Sandstone, very light grey (w/light greenish grey) fine, thick-bedded, massive. Veined network with veins 0.1 to 0.2 m apart and 1 m deep filled with white sand.	3	76.2
- gradational contact -		
16 Siltstone, like unit 7. Lower 7 m poorly exposed.	11	73.2
- scree-covered contact -		

Unit		A	B
15	Sandstone, like unit 13. Finger of red and grey siltstone from 4.3 to 4.7 m. Sample 23584 4.0 m White sandstone. - sharp contact -	5.5	62.2
14	Siltstone, like unit 7. - sharp contact -	2	56.7
13	Sandstone, white (w/white or a little light brown), fine, very thin-bedded, massive. Clayey. - sharp contact -	4	54.7
12	Siltstone, like unit 7, but mainly red with a few grey patches. Sample 23584 1 m Red siltstone. - scree-covered contact -	2	50.7
11	Sandstone, very light grey (w/same and light greenish grey), very fine, ripple-laminated, shaly. - sharp contact -	0.5	48.7
10	Siltstone, like unit 7.	1.5	48.2
9	Sandstone, like unit 5. - gradational contact -	0.5	46.7
8	Sandstone, white (w/same and light brown), medium to coarse and locally gritty, laminated, massive. Trough cross-bedded throughout. Greenish grey siltstone bed 0.1 m thick at 4 m is folded (λ 0.8 m; h 0.2 m) beneath the overlying 1.5-m-thick sandstone bed.	8.5	46.2
7	Siltstone, alternating greyish red and greenish grey, sandy, unbedded, massive. Boundary between red and grey irregular. Scattered vertical tubes. Several white fine sandstone beds up to 0.6 m thick. Sample 23583 7.8 m White sandstone.	8	37.7
6	Scree.	1.5	29.7
5	Sandstone, white (w/same and light brown), fine, laminated to very thin-bedded, flaggy. Trough cross-bedded. Slope-former. Large <u>Beaconites</u> at 6 m. Sample 23582 7.0 m Sandstone. - gradational contact -	14.5	28.2
4	Sandstone, white (w/same and light brown), fine to medium, laminated, flaggy to massive. Trough cross-beds 0.1 to 0.4 m thick. Symmetrical ripple marks (λ 3 cm; h 1 cm) at 1.5 m. - sharp contact -	10	13.7
3	Sandstone, light greenish grey (w/same), fine to medium, strongly laminated to thin-bedded, slabby. Greenish grey laminae. Sample 23581 Sandstone. - sharp mudcracked contact -	1.0	3.7
2	Sandstone, light greenish grey (w/same and light brown), very fine, unbedded, massive. Hard 0.1 m thick at 0.7 m. Patches of pyrite cubes with faces 0.2 cm across in lower 0.2 m. Sample 23580 0.5 m Greenish grey sandstone. - irregular mixed contact -	1.2	2.7

Unit		A	B
1	Siltstone, greyish red with irregular patches of greenish grey, unbedded, papery in lower part and massive in upper part. Sample 23579 0.7 m Red and grey siltstone. <u>AZTEC SILTSTONE</u> (120 m). - scree-covered contact - <u>BEACON HEIGHTS ORTHOQUARTZITE</u> (219 m).	1.5	1.5
8	Sandstone, white (w/same and light brown), fine, laminated, massive and bluff-forming in lower part, but shaly and ledge-forming in upper part. Mainly parallel bedding. Sample 23578 8.5 m Sandstone. - sharp contact with mudcracks 30 cm across -	28	219.4
7	Siltstone, light greenish grey (w/same), unbedded, massive. Sample 23577 0.4 m Siltstone. 23576 0.0 m Siltstone. - sharp irregular contact with 5 cm relief -	0.4	191.4
6	Sandstone, white (w/same and light brown), fine, very thin-bedded, massive. Upper 0.6 m has subvertical burrows. Sample 23575 0.5 m Sandstone. - sharp irregular contact -	1.5	191.0
5	Sandstone, white (w/same and light brown), fine to medium, very thin-bedded, slabby. Parallel and cross-bedded. Some gritty lenses. Sample 23574 9.3 m Sandstone.	9.5	189.5
4	Scree.	11	180.0
3	Sandstone, white (w/same and light brown), fine to medium, indistinctly laminated, mainly massive. Slabby to blocky in lower 4 m, and flaggy to slabby in upper 15 m. Trough cross-bedding more common than parallel bedding. Very fine sandstone with cherty bed 4 cm thick in middle at 4 m. Unit is locally gritty above 12 m. Grit-filled mudcracks 6 cm across at 45 m. Unit forms bluffs from 0 to 13 m, 22 to 27 m and 37 to 42 m. Sample 23573 41 m <u>Haplostigma</u> impression. 23572 37 m Sandstone. 23571 4 m Light greenish grey siltstone. 23570 4 m Cherty very fine sandstone.	46	169.0
2	Sandstone, white (w/same and light brown), medium to coarse, laminated, slabby to blocky. Subequal parallel and low angle trough cross-beds 0.1 to 0.3 m thick. Thin bands of quartz grit and pebbles, and some siltstone chips. Ripple marks (λ 2 m; h 0.3 m) at 9 m. Sample 23569 26 m Sandstone. 23568 1 m Grit. - gradational contact -	29	123.0
1	Sandstone, white (w/same and light brown), medium to coarse, laminated, blocky to massive. Subequal parallel and trough cross-bedding with sets 0.1 to 0.5 thick. Sandstone is very quartzose and well-sorted. A few 1-cm-wide horizontal and vertical burrows. Subangular quartz grit and pebbles up to 3 cm across scattered and in lenses above 16 m. Channel 1 m deep and 2 m wide at 45 m. Bands of quartz grit and pebbles become common and sequence is flaggy to slabby above 80 m. Bluff-former. Dolerite sill, 150 m thick, at 80 m.	94	94.0

Sample 23566 70.5 m Sandstone.
 23565 40.5 m Sandstone.
 23564 2.0 m Sandstone.

BEACON HEIGHTS ORTHOQUARTZITE (219 m).

- sharp contact -

ARENA SANDSTONE (355 m).

- 4 Sandstone, white to yellowish grey (w/same and light brown) fine to medium, indistinctly laminated to thick-bedded, mainly massive. 305.5 355.0
 Ferruginous concretions and beds up to 0.1 m thick 2 or 3 m. Mainly parallel-bedded, but trough cross-beds found every 5 to 10 m. Poorly preserved subhorizontal burrows occur, and Beaconites was found every 10 to 20 m. Unit becomes less clayey in upper part. Face consists of alternating steep bluffs and slopes.

Sample 23554	150.5 m	Sandstone.	Sample 23563	304.5 m	Sandstone.
23553	130.5 m	Sandstone.	23562	292.5 m	Sandstone.
23552	110.5 m	Sandstone.	23561	271.5 m	Sandstone.
23551	91.5 m	Sandstone.	23560	250.5 m	Sandstone.
23550	70.5 m	Sandstone.	23559	230 m	Sandstone.
23549	50.5 m	Sandstone.	23558	240 m	<u>Beaconites</u> from
23548	36.5 m	Sandstone.	23557	210.5 m	Sandstone. col.
23547	30 m	Sandstone.	23556	190.5 m	Sandstone.
23546	10.5 m	Sandstone.	23555	170.5 m	Sandstone.

- 3 Sandstone, white (w/same and light brown), fine to medium, very thin-bedded, massive. Parallel-bedded and friable. Some Scolithus. 17.5 49.5

Sample 23545 8 m Clayey sandstone.

- 2 Sandstone, white (w/same and light brown), fine to medium, laminated to thin-bedded, slabby to massive. Parallel bedding. Thin ferruginous lenses up to 5 m across common, but especially prominent at top. Poorly preserved Scolithus. Bluff-former. 5 32.0

- scree-covered contact -

- 1 Sandstone, white to greyish orange (w/same), fine to medium, very thin to thick-bedded, massive. Parallel-bedded. Quartzose. Bluff-forming lens of trough cross-bedded medium sandstone with a few ferruginous concretions up to 12 cm across at 12 m. Lens has a few borings along bedding planes. Unit poorly exposed from 12 to 18 m. Beaconites and Scolithus burrows and greenish grey shaly siltstone laminae occur in upper part of unit. Ferruginous beds up to 5 cm thick common. Slope-former. 27 27.0

Sample 23544 13.5 m Sandstone.
 23543 1.0 m Sandstone.

ARENA SANDSTONE (335 m).

- scree-covered contact -

ALTAR MOUNTAIN FORMATION (235 m).

Note: Top of unit 16 is the base of the bluff-forming sandstone sequence.

- 16 Sandstone, like unit 14. Sparsely scattered pink and white quartz pebbles up to 6 cm across in lower 0.5 m. Beaconites trail at 7.5 m Ferruginous bed 0.2 m thick at 9 m. 10 235.0

Sample 623542 7.5 m Sandstone.

- gradational contact -

- 15 Sandstone, like unit 13. 1 225.0
- 14 Sandstone, white to greyish orange (w/same), fine to medium, laminated to thin-bedded, slabby to massive. Scolithus beds alternate with well-cemented massive beds up to 25 cm thick. A few thin greenish grey shaly siltstone beds up to 5 cm thick. 6.5 224.0

Unit		- gradational contact -	A	B
13	Sandstone, white and yellowish grey (w/same), medium, laminated to thin-bedded, platy. Trough cross-beds 0.2 m thick. Lower surface of unit has mudcracks. Rare bands of heavy minerals up to 1 mm thick.		2.5	217.5
		- sharp contact -		
12	Sandstone, white and yellowish grey (w/same), fine to medium, thin-bedded. Abundant <u>Scolithus</u> pipes especially well-exposed on ledges. Occasional pink quartz grains.		16	215.0
11	Scree.		4	199.0
10	Sandstone, white and yellowish grey (w/same), medium to coarse, very thin-bedded. Gritty lenses and pebbles up to 1.5 cm across. Trough cross-beds 0.1 to 0.2 m thick. Unit coarser towards top. Greenish grey siltstone fragments at 0.8 m. Sample 23540 1.5 m Grit.		3	195.0
		- sharp contact -		
9	Sandstone, white and yellowish grey (w/same), medium. Abundant vertical pipes (<u>Scolithus</u>). Mudcracks up to 10 cm across on upper surface filled with grit from overlying unit.		3	192.0
		- sharp contact -		
8	Sandstone, white and yellowish grey (w/same), medium to coarse, very thin-bedded, slabby to blocky. Interbeds up to 0.3 m thick of trough cross-bedded arkosic grit. A few scattered quartz and pink feldspar pebbles. Unit becomes more ferruginous towards top. Sample 23539 1.5 m Sandstone.		2.5	189.0
		- slumped contact -		
7	Sandstone, light grey (w/same and light brown), medium, very thin to thin-bedded, slabby. Abundant vertical pipes 1 or 2 cm thick and 10 cm high (<u>Scolithus</u>). Sample 23519 1 m Sandstone. 23518 3 m <u>Scolithus</u> .		9.5	186.5
6	Moraine with large polygons.		57	177.0
5	Scree, with intermittent patches of white powdery clayey sand and occasional outcrops of very fine sandstone and siltstone. Alternating thin-bedded sandstone and greenish grey siltstone at 6 m. Slabby sandstone at 9 m. Light grey and greenish grey fine to medium flaggy to blocky sandstone with greenish discoidal concretions about 2 m across from 23 to 25 m. Trough cross-bed 0.4 m thick. Sample 23516 25 m Clayey sandstone. 23515 9 m Sandstone.		25	120.0
4	Sandstone, very light grey (w/same), fine to medium, laminated, shaly to slabby. Bedding mainly parallel. Thin burrowed beds common. Trough cross-beds 0.3 m thick at 2 m. Symmetrical ripple marks (λ 2 cm) at 16 m.		35	95.0
3	Sandstone, light grey and banded greenish grey (w/same and light to moderate brown), very fine to medium, laminated to very thin-bedded, slabby to massive. Some gritty beds. Well-separated vertical burrows 0.5 cm across common. Individual burrows normally only 10 cm deep. Some thin greenish grey siltstone interbeds. Sample 23531 3 m Sandstone.		15	60.0

Unit	A	B
2 Moraine, with large polygons.	36	45.0
1 Grit, light grey (w/same), locally pebbly, laminated to very thin-bedded, flaggy. Trough cross-bedding 0.1 m thick common. Pebble lenses 5 to 10 cm thick at base, 4 and 6 m. Pebbles mainly subangular to subrounded quartz, minor sandstone and rare granite up to 3 cm across.	9	9.0
Sample 23530 4 m Pebble band.		
23529 0 m Grit.		
<u>Odin Arkose (between 9 and 45 m).</u>		
<u>ALTAR MOUNTAIN FORMATION (235 m).</u>		
- erosion surface with about 5 cm of local relief (<u>Heimdall Erosion Surface</u>) -		
<u>NEW MOUNTAIN SANDSTONE (106+ m).</u>		
3 Sandstone, white (w/same and light greenish grey), fine to medium, laminated to very thin-bedded, shaly to slabby. Beds of greenish grey (w/same) coarse shaly siltstone 3 to 15 cm thick every 3 m. Scattered dark brown concretions 10 to 20 cm across.	24	105.5
Sample 23528 20 m Sandstone.		
23527 0.9 m Sandstone.		
23526 3.5 m Greenish grey siltstone.		
- gradational contact -		
2 Sandstone, white (w/same and light brown), fine to medium, mainly laminated, slabby to massive. Local thin gritty intervals. Occasional 2- to 4-m-thick shaly to platy intervals. Lack of bedding towards top especially where burrowed. Mainly parallel lamination but some trough cross-bedding. Bluff-former. Massive burrowed interval from 1.5 to 4.5 m. Ripple marks (λ 1 cm) at 24.5 m. From 24 to 26 m sandstone is platy and includes several burrowed lenses 0.3 m thick. Trough cross-bed 1 m thick at 30 m. Rare greenish grey laminae appear above 60 m. Burrows at 73.5 m.	80	81.5
Sample 23525 60.0 m Sandstone.		
23524 40.0 m Sandstone.		
23523 19.5 m Sandstone.		
- gradational contact -		
1 Sandstone, white (w/same, light brown or light greenish grey), fine, indistinctly laminated, slabby to massive. Parallel bedding.	1.5	1.5
Sample 23521 0.1 m Fine sandstone.		
Steep scree slope to Taylor Glacier.		

SECTION H1 - HORSESHOE MOUNTAIN

Section measured up steep bluff at eastern end of southeast arm of Horseshoe Mountain 3.9 km at 080° from summit. Measured with staff and level - RAA PJB 1/71. Position of base 77° 34.4' S; 160° 0.5' E. Map elevation 2000 m.

Unit	A	B
Top of long ridge running toward Horseshoe Mountain.		
<u>LASHLY FORMATION</u> (161+ m).		
18 Sandstone, yellowish grey [5Y 7/2] (w/same, light brown [5YR 6/4-5/6]), fine to medium, thin-bedded and unbedded, massive. Lower m has abundant coal streaks, stems up to 30 cm long and siltstone fragments mostly 1 to 3 but up to 20 cm long. Siltstone fragments up to 12 cm long at 12.8 m. Trough cross-bedding. Bluff-former.	12.9	160.5
Sample 23623 12.8 m Sandstone.		
23622 0.0 m Sandstone.		
- erosion surface -		
17 Sandstone, light grey (w/very light grey and light brown [5YR 5/6]), fine to medium, thin-bedded, massive. Carbonaceous laminae at several intervals. Mainly parallel-bedded but trough cross-bedding common from 25 to 40 m. A few coal streaks and siltstone fragments up to 20 cm long in lower 0.2 m. Coal streaks and smaller siltstone fragments common at 8 to 10 m, 24.5, 28.5, 29.8, 33.8 and 34.2 to 35.2 m. Thin coal streaks at 39.4 and 40.5 m. Coal streaks, stems up to 40 cm across and scattered siltstone fragments up to 6 cm across from 42 to 50 m. Erosion surface near base of bluff overlain by up to 1 m of siltstone fragments up to 40 cm long, and dusky brown [5YR 2/2] concretionary structures up to 30 cm across, at 13.7 m. Top of bluffs and base of next set at 24.6 m. Top of bluffs and base of slope at 35 m. Slope grades up to base of bluff forming top of ridge at 50 m. Upper 10 m of unit are unbedded and massive, with vertical fluting.	67.8	147.6
Sample 23621 59.8 m Sandstone.		
23620 40.0 m Sandstone.		
23619 21.4 m Sandstone.		
23618 0.5 m Sandstone.		
- erosion surface -		
16 Siltstone and very fine sandstone, light grey [w/very light grey, light brown [5YR 6/4]], ripple-laminated, shaly to massive. White roots and rootlets in upper 1.3 m.	3.7	79.8
- gradational contact -		
15 Sandstone, like unit 10. Abundant siltstone fragments up to 30 cm across, large coal streaks and a few quartz pebbles up to 4 cm across in lower 0.5 m. Lenses of abundant siltstone fragments up to 20 cm across and stems up to 30 cm wide from 3 to 4 and 14.5 to 15 m. Base of bluffs at 2.0 m; top of bluffs at top of unit.	17.6	76.1
Sample 23617 3.0 m Sandstone.		
- erosion surface -		
14 Sandstone, like unit 10. Lenses of siltstone fragments at base. Locally grades up into up to 0.3 m of siltstone and very fine sandstone like unit 4 with white roots and rootlets.	3.2	58.5
- erosion surface -		

Unit	A	B
13 Siltstone and very fine sandstone, like unit 4, with roots and rootlets, but less sandy and massive above 2 m. Calamitid stems in more carbonaceous upper 2 m. Sample 23616 4.9 m cCarbonaceous siltstone. - gradational contact -	5.1	55.3
12 Sandstone, like unit 10. Siltstone fragments up to 5 cm across and large coal streaks abundant in lower 2 m. - erosion surface -	3.4	50.2
11 Siltstone and very fine sandstone, like unit 4. - gradational contact -	0.3	46.8
10 Sandstone, light grey (w/light brown [5YR 5/6] and pale yellowish green [10GY 7/2]), very fine to fine, parallel and ripple-laminated, massive. Carbonaceous laminae common. Sample 23615 2.5 m Sandstone. - erosion surface -	5.9	46.5
<u>Note:</u> The bed is displaced by a fault with downthrow of 8 m to north. The next block north is downthrown a further 5 m. No tilting was observed, but the faults are probably superficial.		
9 Sandstone, deeply weathered dusky yellow [5Y 6/4] (light brown [5YR 5/6] on surface), medium to coarse, thin- to thick-bedded, slabby. White quartz pebbles up to 3 cm across scattered and in lenses. - erosion surface -	1.2	40.6
8 Siltstone and very fine sandstone, like unit 4. - scree-covered contact -	4.6	39.4
7 Sandstone, yellowish grey [5Y 8/1] (w/same, light brown [5YR 5/6]), medium to coarse, indistinctly very thin-bedded, massive, quartzose. Fine sandstone interbeds in upper 0.5 m. Sample 23614 0.0 m Sandstone. - sharp contact -	1.6	34.8
6 Siltstone and very fine sandstone, like unit 4. Well developed white roots and rootlets. Medium to dark grey shaly siltstone 0.2 m thick in middle of unit. Close-packed vertical tubes 0.4 cm across extend down 2 to 3 cm from upper contact. Sample 23613 4.5 m Siltstone. - gradational contact -	5.2	33.2
5 Sandstone, like unit 3. Abundant siltstone fragments up to 1 cm across in lower 0.4 m. - erosion surface -	2.6	28.0
4 Siltstone and very fine sandstone, light to medium grey (w/same light brown [5YR 6/4] and light greenish grey [5GY 8/1]), laminated, massive. Scattered roots and rootlets. Some of the small sandstone beds have small coal streaks. - gradational contact -	0.6	25.4
3 Sandstone, very light grey (w/light brown [5YR 5/6] and greyish yellow green [5GY 7/2]), fine laminated to very thin-bedded, massive. Parallel and low angle discordant bedding. Thin lenses of quartz grit and small pebbles at base (mainly white but a few pinkish). Coal streaks up to 0.5 m long in lower 0.5 m. Sample 23612 0.0 m Fine sandstone. - erosion surface -	5.4	24.8

Unit		A	B
2	Siltstone, light to medium grey (w/same, light brown [5YR 5/6] and moderate yellowish brown [10YR 6/4]), coarse, laminated, massive. Abundant subvertical tubes 0.5 to 1 cm across and white flecks a few mm across (roots and rootlets). A few vertical regular tubes 0.4 mm wide and 2 to 3 cm long extend down from upper contact. Sample 23611 1.3 m Siltstone. - scree-covered contact -	1.4	19.4
1	Sandstone, yellowish grey [5Y 8/1] (w/moderate to dark reddish brown [10R 4/6-3/4] with moderate olive brown [5Y 4/4] laminae), fine to medium, ripple-laminated, shaly and platy. Some siltstone interbeds. All but lower 5 m and upper 2 m is very poorly exposed in scree. Slope-former. Sample 23610 1 m Sandstone. <u>LASHLY FORMATION</u> (161+ m). - sharp contact - <u>FEATHER CONGLOMERATE</u> (118+ m). <u>Fleming Member</u> (45 m).	18.0	18.0
16	Siltstone and very fine sandstone, like unit 14. Sample 23609 1.5 m Siltstone. - gradational contact -	1.7	118.2
15	Sandstone, like unit 11. Scattered pinkish quartz grains. Upper 2 m is finer and has small trough cross-beds and ripple laminae. - erosion surface -	5.8	116.5
14	Siltstone and very fine sandstone, light grey and light greenish grey [5GY 8/1] (w/same and light brown [5YR 6/4]), laminated, massive. - sharp contact -	0.1	110.7
13	Sandstone, like unit 11. A few white quartz pebbles up to 5 cm across with siltstone fragments near base. <u>Note:</u> Section passes up beside fault with throw of 3.5 m. - erosion surface -	2.9	110.6
12	Sandstone, light greenish grey [5GY 8/1] (w/same and dark yellowish orange [10YR 6/6], with black on joint surfaces), very fine, laminated, platy to massive. - sharp contact -	0-0.3	107.7
11	Sandstone, white (w/same and light brown [5YR 6/4]), medium to very coarse but becomes finer in upper 2 m, unbedded, massive. Rare pinkish quartz grains. Abundant siltstone fragments up to 25 cm across in lower 1 m. Upper 1 m is stained dark yellowish orange [10YR 6/6]. Sample 23608 0.6 m Sandstone. - erosion surface cut down to unit 8 -	10.4	107.4
10	Siltstone, and very fine sandstone, light to medium grey (w/greenish grey [5GY 6/1]), coarse, laminated, massive. Thin carbonaceous laminae common. Sparse white flecks and vertical tubes 0.5 to 1 cm wide (rootlets and roots). Sample 23607 0.9 m Siltstone. - gradational contact -	0-1.1	97.0

Unit		A	B
9	Sandstone, like unit 2. - gradational contact -	0-1.5	95.9
8	Sandstone, dusky yellow [5Y 6/4] (w/same, moderate reddish brown [10R 4/6] and dark grey), medium to very coarse indistinctly bedded, massive. - gradational contact -	6.8	94.4
7	Sandstone, yellowish grey [5Y 8/1] (w/same and light brown [5YR 5/6]), fine to coarse, laminated to very thin-bedded, massive. White rounded vein quartz pebbles up to 3 cm across with a few pale red pebbles [10R 6/2] scattered and in lenses. Trough cross-beds up to 3 m thick. - erosion surface -	7.5	87.6
6	Sandstone, yellowish grey [5Y 8/1] (w/same and moderate reddish brown [10R 4/6]), fine to medium, laminated, massive. Gritty in lower 0.5 m. Sample 23606 2.3 m Fine sandstone. - erosion surface -	2.5	80.1
5	Sandstone, deeply weathered olive grey [5Y 4/1], pale to dark yellowish orange [10YR 8/6-6/6] and moderate reddish brown [10R 4/6], fine to coarse, thin- to thick-bedded, massive, micaceous. <u>Fleming Member (45 m).</u> - scree-covered contact -	4.6	77.6
4	Sandstone, very light grey (w/same, white and light brown [5YR 5/6]), medium to very coarse, laminated to very thin-bedded, massive. Lower 10 m has horizons of siltstone fragments 10 cm across every 2 to 4 m. Parallel and trough cross-beds in sets 0.2 to 0.4 m thick. Scattered quartz pebbles 1 to 3 cm across above 13 m. Sample 23605 13.6 m Coarse sandstone. - erosion surface -	17.3	73.0
<u>Note:</u> May have crossed fault with throw of 3.5 m in units 2 and 3.			
3	Sandstone, like unit 2, with subordinate interbeds of carbonaceous light to medium grey siltstone, and dusky yellow [5Y 6/4] fine sandstone (w/olive grey [5Y 4/1], greyish red [10R 4/2] and pale brown [5YR 5/2]) up to 0.5 m thick. The fine beds are cut out locally by channelling. Sample 23604 6.3 m Coarse sandstone. 23603 1.3 m Carbonaceous siltstone.	11.5	55.7
2	Sandstone and grit, deeply weathered, yellowish grey [5Y 8/1] and light brown [5YR 6/4] with a few beds 5 to 50 cm thick of dusky yellow [5Y 6/4] (w/dark dusky yellowish brown [10YR 4/2-2/2] and greyish brown [5YR 3/2]), coarse to gritty with subordinate conglomerate bands 0.1-1 m thick, laminated to thick-bedded, massive. Mainly parallel-bedded, but small trough cross-beds (0.1-0.2 cm thick) are common and trend northwards. Pebbles mostly 1 cm but up to 2 cm across in conglomerate beds are almost all white subrounded to rounded vein quartz with a few light grey quartz pebbles. From 25.5 to 28.8 m there is a very pebbly interval with conglomerate in lower metre (4, 4, 3, 3, 3 cm). Siltstone fragments up to 25 cm across at base of channel at 29.3 m. Sample 23602 19.6 m Coarse sandstone. 23601 0.4 m Fine conglomerate.	34.0	44.2

Unit

A B

1 Scree, but equivalent to bluffs on southeast face.

10.2 10.2

FEATHER CONGLOMERATE (118+ m).

Moraine and fallen blocks with undulatory surface. Most debris from Feather Conglomerate.

Glacier ice.

SECTION H2 - HORSESHOE MOUNTAIN

Section measured up southwest ridge of Horseshoe Mountain to the summit. Base of section 0.8 km at 255° from summit. Measured with staff and level by RAA PJB 1/71. Position of base 77° 34.7' S; 159° 53.5' E. Map elevation 2200 m.

Unit		A	B
Top of Horseshoe Mountain.			
<u>LASHLY FORMATION</u> (157+ m).			
16	Sandstone, yellowish grey [5Y 7/2] (w/same, light brown [5YR 6/4] and moderate reddish brown [10R 4/6]), fine, indistinctly laminated and trough cross-bedded, massive. Lenses of light grey siltstone fragments mostly 1 to 3 cm but up to 15 cm across from 2.5 to 5.5 m. Abundant coal streaks from 7.0 to 7.7 m. Medium grey concretions from 2 to 10 cm across from 10 to 30 m. At 44.4 m there is a bed of subangular white quartz pebbles mostly 1 to 5 cm across and greenish grey [5GY 6/1] siltstone fragments up to 30 cm across. Above 45 m concretions are up to 20 cm across. Silicified wood and coal streaks from 50 to 61 m. Siltstone fragments 3 cm across and coal streaks at 60 m. Bluff-former (ledge at 18 m).	69.2	156.7
	Sample 23637 68.8 m Sandstone.		
	23636 59.6 m Sandstone.		
	23635 40.5 m Sandstone.		
	23634 19.5 m Sandstone.		
	23633 0.0 m Sandstone.		
- sharp contact -			
15	Siltstone and very fine sandstone, light to dark grey (w/light brown [5YR 6/4], yellowish grey [5Y 7/2] and light olive grey [5Y 6/1]), finely laminated to very thin-bedded, shaly to massive.	3.7	87.5
	Sample 23632 3.6 m Siltstone.		
- sharp contact -			
14	Sandstone, very light grey (w/light brown [5YR 6/4] and yellowish grey [5Y 7/2]), fine, indistinctly laminated, massive. Abundant plant stems up to 25 cm across at 1.6 m. Bluff-former.	3.0	83.8
	Sample 23631 0.0 m Sandstone.		
- sharp contact -			
13	Siltstone and very fine sandstone, light to dark grey (w/light brown [5YR 6/4], yellowish grey [5Y 7/2] and light olive grey [5Y 6/1]), finely laminated to thin-bedded, shaly to massive.	7.6	80.8
	Sample 23630 7.4 m Siltstone.		
- gradational contact -			
12	Sandstone, yellowish grey [5Y 7/2] (w/same and light brown [5YR 6/4]), fine, ripple-laminated, shaly and massive. Carbonaceous laminae. Bluff-former.	3.4	73.2
11	Snow, scree, and dark grey carbonaceous siltstone.	2.3	69.8
10	Sandstone, yellowish grey [5Y 7/2] to dark grey (w/dusky yellow [5Y 6/4] and light brown [5YR 6/4]), fine to very fine, laminated to very thin-bedded, shaly to massive. Bluff-former.	1.4	67.5
9	Snow, scree, and very carbonaceous fine sandstone and siltstone debris (w/light and dark grey). Upper 2 m has coal in scree.	9.5	66.1
8	Sandstone, yellowish grey [5Y 8/1] (w/same and light brown [5YR 6/4]), medium, very thin-bedded, trough cross-bedded, massive. Scattered lenses of rounded quartz pebbles and grit. Top of bluff at 2.3 m.	6.0	56.6

Unit		A	B
Pebble bed at 1.2 m consists mainly of quartz pebbles mostly 1 to 3 cm across and up to 8 cm across, with common quartz mica schist. Pebbles also at 2.3 m. Finer grained with ripple-laminated and carbonaceous laminae above 2.3 m.			
Sample 23629	0.4 m Sandstone,		
- slumped contact -			
7	Siltstone and very fine sandstone, light grey (w/light brown [5YR 6/4] and light olive grey [5Y 6/1]), ripple-laminated.	3.3	50.6
- gradational contact -			
6	Sandstone, yellowish grey [5Y 7/2] (w/same, light brown [5YR 6/4] and dusky yellow [5Y 6/4]), fine, ripple-laminated, trough cross-bedded and unbedded, massive. Light grey siltstone laminae common above 2.0 m.	5.8	47.3
Sample 23628	0.3 m Sandstone.		
- erosion surface -			
5	Snow, scree, siltstone blocks, and carbonaceous siltstone and very fine sandstone with <u>Dicroidium</u> assemblage.	12.0	41.5
Sample 23627	10.4 m Very fine sandstone and siltstone with <u>Dicroidium</u> assemblage.		
4	Sandstone, light grey (w/light brown [5YR 6/4] and light olive grey [5Y 6/1]), very fine to fine, ripple-laminated, blocky.	4.8	29.5
- gradational contact -			
3	Sandstone, light grey (w/yellowish grey [5Y 7/2] and light brown [5YR 6/4]), fine, very thin-bedded and unbedded, massive. Trough cross-bedded. Band of rounded white quartz pebbles up to 4 cm across and rounded siltstone fragments up to 4 cm across at 3.4 m. Scattered siliceous logs up to 40 cm wide from 5.3 to 7.7 m.	13.3	24.7
Sample 23626	7.5 m Sandstone.		
2	Snow and fallen blocks.	4.0	11.4
1	Sandstone, light grey (w/same, light brown [5YR 6/4] and yellowish grey [5Y 7/2]), fine, trough cross-bedded below 3 m and ripple-laminated above 3 m, massive. Common carbonaceous laminae. Light to dark grey (w/yellowish grey [5Y 7/2] coarse siltstone laminae from 4.2 to 4.3 m. Bluff-former.	7.4	7.4
Sample 23625	4.3 m Siltstone.		
Sample 23624	4.1 m Sandstone.		

LASHLY FORMATION (157+ m).

Snow.

SECTION H3 - NEAR HORSESHOE MOUNTAIN.

Section measured on a small exposure southwest of Horseshoe Mountain on a south-facing slope beginning at an extensive terrace above halfway up. Base of section 4.1 km at 237° from the summit of Horseshoe Mountain. Measure with staff and level - RAA PJB 1/71.

Position of base 77° 35.1' S; 159° 51' E. Map elevation 2200 m.

Unit	A	B
<p><u>Note:</u> On the southwest face of the outcrop Units 8 and 9 are better exposed. Unit 9 is the same as Unit 8, and the lower 1 m of Unit 9 is coal and dark grey to black shale. Units 6 to 9 are equivalent to Unit 5 in Section H2.</p> <p>Top of bluff.</p> <p><u>LASHLY FORMATION</u> (60+ m).</p>		
11 Sandstone, yellowish grey [5Y 7/2] (w/same, light brown [5YR 6/4] and greyish yellow [5Y 8/4]), fine laminated and unbedded, trough cross-bedded, massive with fluted weathering. Lower 0.5 m has lenses of subangular white and light grey quartz pebbles 1 to 2 cm across, common quartz mica schist pebbles and coal streaks. Quartz pebbles in the basal band are mostly 5 cm but up to 20 cm across. Scattered carbonaceous laminae, especially in upper 2 m.	9.4	60.0
- interfingering contact -		
10 Sandstone, white (w/same and light brown [5YR 6/4]), fine to coarse, thin- to thick-bedded, massive quartzose. Bluff-former.	2.0	50.6
9 Terrace covered with fallen blocks, very fine sandstone and siltstone, medium - dark grey (w/same and yellowish grey [5Y 7/2], and some coal fragments.	3.0	48.6
8 Sandstone, light to medium grey (w/yellowish grey [5Y 7/2]), fine to very fine, laminated to very thin-bedded, shaly. Lower 0.5 m is coarser grained. Plant horizon above 0.9 m.	4.0	45.6
Sample 23640 1.4 - 1.5 m Siltstone with <u>Dicroidium</u> assemblage.		
23639 0.9 - 1.4 m Siltstone with <u>Dicroidium</u> assemblage.		
7 Siltstone, dark grey (w/same and light olive grey [5Y 6/1]).	0.8	41.6
Sample 23638 Siltstone with <u>Dicroidium</u> assemblage.		
6 Scree and jumbled debris on terrace and slope. Mainly very fine sandstone and siltstone, medium to dark grey, (w/light to dark grey). Coal blocks in scree at 4.8 m.	5.1	40.8
5 Sandstone, yellowish grey [5Y 7/2] (w/same and light brown [5YR 6/4]), fine to medium, thin- to thick-bedded, massive. Medium to dark grey siltstone fragments up to 25 cm across from 1.4 to 1.6 m. Siltstone fragments 2 cm across from 2.1 to 3.0 m. Medium grey (w/yellowish grey [5Y 7/2]) siltstone bed from 7.1 to 7.5 m. Few scattered carbonaceous laminae and small coal streaks. Bluff-former.	18.0	35.7
4 Scree, blocks, and very fine sandstone and siltstone, medium to dark grey (w/light olive grey [5Y 6/1]).	2.1	17.7
3 Sandstone, yellowish grey [5Y 7/2] (w/light brown [5YR 6/4] and dusky yellow [5Y 6/4]), fine, ripple-laminated, massive.	2.0	15.6
- slumped contact -		
2 Sandstone, light to medium grey (w/light brown [5YR 6/4] and yellowish grey [5Y 7/2]), fine to very fine, ripple-laminated, shaly to blocky.	1.8	13.6
- sharp contact -		

Unit	A	B
1 Sandstone, yellowish grey [5Y 8/1] (w/same and light brown [5YR 6/4]), fine to medium, indistinctly thin-bedded, massive. Lower 1 m contains rounded white quartz pebbles mostly 1 cm but up to 2 cm across, siltstone fragments 3 to 6 cm across, coal streaks, and silicified wood. Bed of white rounded quartz mostly 1 cm but up to 3 cm across and siltstone fragments (medium grey, w/light brown [5YR 6/4] and yellowish grey [5Y 7/2]) up to 1 m across from 3.0 to 3.8 m. Above 3.8 m siltstone fragments are scattered. Abundant siltstone fragments and carbonaceous laminae from 6.0 to 7.1 m. Lens of shaly laminated siltstone, (medium grey, w/light brown [5YR 6/4] and yellowish grey [5Y 7/2]) from 8.5 to 10.0 m. Erosion surface overlain by siltstone fragment horizon at 10.0 m.	11.8	11.8

LASHLY FORMATION (60+ m).

Snow at base of bluff about 20 m southwest of block-covered terrace.

SECTION D1 - MOUNT DEARBORN.

Section measured from the base of a shear sandstone bluff 1.9 km at 8° from the summit of Mt. Dearborn west to the base of a dolerite cap 2.0 km at 343° from the summit. Measured with staff and level - RAA PJB 1/71.

Position of base 77° 13.7' S; 160° 10' E. Map elevation 2200 m.

Unit		A	B
Dolerite sill, about 50 m thick.			
<u>LASHLY FORMATION (233+ m).</u>			
25	Sandstone, yellowish grey [5Y 7/2] (w/same and light brown [5YR 6/4]), medium, laminated to very thin-bedded. Sample 23677 0.2 m Sandstone.	0.5	232.7
24	Scree and dolerite blocks.	15.0	232.2
23	Siltstone and very fine sandstone, like unit 21. Hard fine sandstone beds 0.1 to 0.3 m thick form ledges every 1 to 4 m. Unit is very poorly exposed under snow and scree. Sample 23676 16.5 m Siltstone.	22.5	217.2
- gradational contact -			
22	Sandstone, yellowish grey [5Y 7/2] (w/same and light brown [5YR 6/4]), fine, very thin-bedded, slabby to massive. Several lenses of grit and white (with a few light grey) subrounded quartz pebbles mostly less than 1 cm but up to 5 cm across in lower 2.5 m. Sample 23675 0.0 m Sandstone.	4.7	194.7
- slumped contact -			
21	Siltstone and very fine sandstone, very light grey to black (w/same), ripple-laminated to unbedded, shaly and papery to massive. Some shaly coal beds. Mainly dark grey and silty in the lower part, and light to medium grey and fine sandy in the upper part. Poorly preserved grasslike leaves and small stems in lower part of unit. Poorly exposed under snow and scree. Sample 23674 2.0 m Carbonaceous siltstone.	11.9	190.0
- gradational contact -			
20	Sandstone, like unit 18. Mainly parallel and trough cross-bedded. Logs common from 4 to 7 m. Sample 23673 4.8 m Silicified wood. 23672 1.2 m Sandstone.	7.7	178.1
19	Scree.	14.7	170.4
18	Sandstone, very light grey (w/same, yellowish grey [5Y 7/2], and light brown [5YR 6/4]), fine, very thin-bedded to unbedded, massive. Low angle discordant bedding common. Abundant siltstone fragments up to 10 cm across and coal streaks in lenses in lower metre. Rare log moulds up to 30 cm across. Occasional beds of greenish grey [5GY 6/1], light brown [5YR 5/6], moderate reddish brown [10R 4/6], moderate yellowish brown [10YR 4/4] and greyish brown [5YR 7/2] weathering fine sandstone and siltstone. Weathering sandstone surfaces have an indistinct knobbly texture with 1 to 3 cm relief in places. Siltstone, lens from 8.1 to 9.4 m. Lenses of coal streaks mostly 0.3 m long but up to 0.6 m above 20 m, with prominent bands at 21.0 and 31.5 m. Laminated coal lens 0.4 m x 1.2 m at 31.5 m. Bluff-former. Sample 23671 60.2 m Carbonaceous siltstone from 0.1 m thick lens. 23670 60.1 m Sandstone. 23669 38.5 m Knobbly sandstone. 23668 22.2 m Sandstone. 23667 0.9 m Sandstone.	70.0	155.7

Unit		A	B
	- erosion surface -		
17	Siltstone, light to dark grey (w/same and pale brown [5YR 5/2]), fine, laminated to unbedded, massive. Poorly preserved stems common. Sample 23666 Carbonaceous siltstone.	0.3	85.7
16	Snow and scree	2.0	85.4
15	Sandstone, light grey (w/same and light brown [5YR 6/4]), fine, laminated, massive. Ripple-lamination and low angle discordant bedding common. Trough cross-bedding. Siltstone fragments up to 15 cm across at base and higher in unit. Bed of white quartz pebbles, siltstone fragments and coal streaks from 0.2 to 1 m thick at 6.8 m. Sample 23665 0.7 m Fine sandstone.	15.8	83.4
	- erosion surface -		
14	Siltstone and very fine sandstone, like unit 12. Well-developed white roots and a few rootlets in several intervals. Bases of some sandstone beds show load casts 1 to 2 cm deep. Vertical tubes extend down about 2 cm from upper contact in places and from base of sandstone bed near base of unit. Sample 23664 6.2 m Siltstone and ?zeolite.	6.7	67.6
	- interfingering contact -		
13	Sandstone, light bluish grey [5B 7/1] to greenish grey [5GY 6/1] (w/same), fine to medium with some gritty laminae and stringers, very thin-bedded, massive. Trough cross-bedded and ripple-laminated. Quartz pebbles, mostly white and 1 to 3 cm but up to 8 cm across and siltstone fragments up to 20 cm across in stringers throughout, though concentrated in lower 0.1 m. Coal streaks up to 0.4 m long and 2 cm thick in lower 2 m. Bluff-former. Sample 23663 1.2 m Sandstone.	7.6	60.9
12	Siltstone, very fine sandstone and claystone, light to medium grey, greenish grey [5G 6/1] and light bluish grey [5B 7/1] (w/same and light brown [5YR 6/4]), mainly fine siltstone through to fine sandstone, ripple-laminated to unbedded, mainly massive. Sandstone is in lenses about 0.1 m thick and forms about 30% of the sequence. Some beds have small siltstone and coal fragments. Striate stems and white roots and rootlets at several intervals. Some thin quartzose sandstone beds in lower 2.5 m which is mainly ripple-laminated. Sample 23662 16.4 m Siltstone.	17.1	53.3
	- sharp contact -		
11	Sandstone, white to yellowish grey [5Y 7/2] (w/same and light brown [5YR 6/4] to moderate reddish brown [10R 4/6]), fine to coarse, very thin-bedded, massive, quartzose. Stringers and lenses of white subrounded quartz pebbles up to 8 cm across, siltstone fragments up to 10 cm across and coal fragments 1 to 2 cm across.	3.4	36.2
	- erosion surface -		
10	Siltstone, very fine sandstone and claystone, like unit 2. Scattered white roots and rootlets. - gradational contact laterally and vertically with siltstone like unit 2 -	0.5	32.8
9	Sandstone, yellowish grey [5Y 7/2] (w/same, moderate reddish orange [10R 6/6]), fine to very fine, very thin-bedded, massive. A few coal streaks near base. Abundant siltstone fragments, mostly 2 to 5 cm but up to 20 cm across. Sample 23661 0.2 m Fine sandstone.	3.4	32.3
	- erosion surface -		

Unit	A	B
8 Siltstone, very fine sandstone and some claystone, like unit 2. Scattered white roots and rootlets. Abundant striate stems from 2.6 to 2.8 m. Sample 23660 2.7 m Siltstone. - snow-covered contact -	3.2	28.9
7 Sandstone, like unit 5. - erosion surface -	0.6	25.7
6 Siltstone, very fine sandstone and some claystone, like unit 2. Scattered white roots and rootlets. - snow-covered contact -	2.0	25.1
5 Sandstone, yellowish grey [5Y 7/2] (w/same and moderate reddish brown [10R 4/6]), fine, ripple-laminated, platy to slabby. White quartz pebbles up to 1 cm across at base. - sharp contact -	1.2	23.1
4 Siltstone, claystone and very fine sandstone, like unit 2. White roots and rootlets common. Vertical tubes locally extend down up to 2 cm from upper surface. - snow-covered contact -	1.4	21.9
3 Sandstone, yellowish grey [5Y 7/2] (w/same and moderate reddish orange [10R 6/6]), fine, laminated to very thin-bedded, platy and massive. Trough cross-bedded. Lenses of subrounded white and a few light grey quartz pebbles and siltstone fragments up to 15 cm across in lower 0.1 m. Sample 23659 0.8 m Sandstone. - erosion surface -	3.8	20.5
2 Siltstone, claystone and very fine sandstone, light to medium grey, greenish grey [5G 6/1], light bluish grey [5B 7/1] (w/same), unbedded and laminated, mainly shaly but also flaky, carbonaceous. White roots and rootlets scattered through siltstone and claystone in upper 0.8 m and in 0.4 m thick massive bed at 3 m. In places vertical tubes 4 mm across extend down 2 cm below the upper surface. Sample 23658 10.1 m Siltstone. - scree-covered contact -	11.6	16.7
1 Sandstone, light greenish grey [5GY 8/1] (w/same and moderate reddish brown [10R 4/6]), fine to coarse, laminated to very thin-bedded, platy to slabby. Lenses of quartz grit and pebbles up to 2 cm across. Bed of light greenish grey coarse siltstone from 4.3 to 4.5 m. Sample 23657 5.0 m Fine sandstone. 23656 2.5 m Medium sandstone.	5.1	5.1
<u>LASHLY FORMATION (233+ m).</u> - contact in rubble-covered platform -		
<u>FEATHER CONGLOMERATE (184+ m).</u>		
25 Sandstone, white to yellowish grey [5Y 7/2] (w/same, moderate to dark reddish brown [10R 4/6 - 3/4]), medium to very coarse, slabby to massive. Trough cross-bedding. Top of unit is platform at top of prominent bluff. - sharp contact -	10.5	184.3

Unit		A	B
24	Sandstone, deeply weathered dusky yellow [5Y 6/4] and moderate reddish brown [10R 4/6] with yellowish grey [5Y 7/2] beds becoming more common in upper part, fine to very coarse and gritty, laminated to very thin-bedded, platy to massive. Planar and trough cross-bedding. Lower 0.4 m has stringers of white subrounded quartz pebbles up to 4 cm across, a few pinkish and light grey pebbles, and siltstone fragments up to 20 cm across. The more quartzose coarse yellowish grey sandstone laminae and beds become more common towards the top of the unit.	8.7	173.8
	Sample 23655 1.5 m Coarse sandstone.		
	23654 1.2 m Fine sandstone.		
	- erosion surface -		
23	Siltstone and very fine sandstone, light to medium grey (w/same), laminated, shaly, carbonaceous. A few thin beds of fine sandstone form ledges. Poorly exposed.	3.4	165.1
	Sample 23653 0.1 m Siltstone.		
22	Sandstone, yellowish grey [5Y 6/2] (w/dark reddish brown [10R 3/4] on horizontal surfaces), very fine to medium, in ripple-laminated beds 2 to 10 cm thick, platy.	1.5	161.7
	- sharp contact -		
21	Sandstone, like unit 19. Scattered iron concretions. Lenses of light olive grey [5Y 5/2] fine and very fine, parallel and ripple-laminated sandstone up to 0.8 m thick above 9 m, overlain in places by lenses of quartz pebbles up to 1 cm across and scattered fine sandstone fragments up to 5 cm across.	14.0	160.2
	Sample 23652 3.0 m Coarse sandstone.		
	- slumped contact -		
20	Sandstone, yellowish grey [5Y 7/2] to white (w/same), medium, unbedded, massive. Several beds of light grey coarse siltstone 0.1 m thick.	0.9	146.2
	Sample 23651 0.9 m Siltstone.		
	- scree-covered contact -		
19	Sandstone, yellowish grey [5Y 8/1 - 7/2] (w/same and moderate reddish brown [10R 4/6]), very coarse, very thin- to thick-bedded, slabby to blocky. Contains abundant white (and a few pinkish and light grey) quartz pebbles. Scattered iron concretions 2 to 4 cm across.	1.3	145.3
	- erosion surface -		
18	Sandstone, like unit 5, but fine to medium. Dusky yellow (w/dark reddish brown [10R 3/4]) iron concretionary bed from 0.9 to 1.1 m.	1.4	144.0
	- gradational contact -		
17	Sandstone, like unit 9.	2.0	142.6
	- sharp contact -		
16	Sandstone, yellowish grey [5Y 7/2 - 8/1] (w/same, light brown [5YR 5/6]), fine, indistinctly very thin-bedded, massive. Olive grey [5Y 3/2] shaly fine sandstone in lower 0.3 m. Thin stringers of quartz grit. Burrows about 2 cm wide evident on upper surface.	1.8	140.6
	- scree-covered contact -		
15	Sandstone, like unit 9, but coarse in lower 2 m.	3.4	138.8
	Sample 23650 0.5 m Coarse sandstone.		
	- erosion surface -		
14	Sandstone, like unit 6.	0.5	135.4
	- sharp contact -		

Unit		A	B
13	Sandstone, like unit 9. - sharp contact -	2.2	134.9
12	Sandstone, like unit 6. - scree-covered contact -	0.7	132.7
11	Sandstone, like unit 9. - erosion surface -	1.3	132.0
10	Sandstone, like unit 6. - gradational contact -	0.8	130.7
9	Sandstone, yellowish grey [5Y 7/2] (w/white, yellowish brown [10YR 6/2 - 4/2] and moderate brown [5YR 4/4 - 3/4]), fine to coarse very thin- to thick-bedded, slabby to massive. Indistinctly trough cross-bedded. A few thin quartz pebble and grit lenses. Scattered round iron concretions 2 to 4 cm across. - sharp contact -	7.1	129.9
8	Sandstone, like unit 6. Poorly exposed in lower 0.6 m. - scree-covered contact -	0.9	122.8
7	Sandstone, like unit 5, with white and some pinkish quartz pebbles and grit lenses with pinkish feldspar grains. Sample 23649 0.4 m Coarse sandstone. - erosion surface -	2.8	121.9
6	Sandstone, light grey (w/greenish grey [5GY 6/1] and moderate olive grey [5Y 4/2]), very fine to fine and poorly sorted, indistinctly bedded, massive to flaky. - snow and scree-covered contact -	1.7	119.1
5	Sandstone, white to yellowish grey [5Y 7/2] (w/same, light brown [5YR 6/4] and moderate reddish brown [10R 4/6]), medium very thin-bedded, massive. Contains gritty lenses with white, and a few pinkish, quartz pebbles, and pinkish feldspar grains in lower 5 m. Upper 2 m are finer grained. - erosion surface -	7.1	117.4
4	Sandstone, light grey (w/olive grey to moderate olive brown [5Y 3/2 - 4/4]), fine, poorly sorted, gritty, unbedded, massive. Light coloured vein network locally developed, up to 1 cm wide and 10 cm apart. Sample 23648 0.3 m Gritty fine sandstone. - snow and scree-covered contact -	0.5	110.3
3	Sandstone, like unit 2. Forms low bluffs and slopes. Poorly exposed on lower 20 m and only slightly better above that. Sample 23647 24.2 m Coarse sandstone. - rubble and snow-covered contact -	28.6	109.8
2	Sandstone, white to yellowish grey [5Y 7/2] (w/same, moderate to dark reddish brown [10R 4/6 - 3/4]), fine to very coarse grained, indistinctly thin- to thick-bedded, slabby to blocky. Common grit and fine conglomerate beds with subangular to sub-rounded pebbles, mainly white quartz with subordinate pinkish feldspar, mostly less than 1 cm, but up to 3 cm across. Columns are 1 to 2 cms across and are more common and better developed than in unit 1. Occasional lenses of light olive grey [5Y 5/2]	31.2	81.2

(w/dark greenish grey [5G 4/1]) poorly sorted gritty sandstone about 0.4 m thick. Lenses of rounded white quartz pebbles up to 3 cm across from 22 to 24 m. Top of unit is edge of extensive rubble-covered platform. As much as 3 m of section may have been lost in tracing the edge of the platform. Section continued 200 m northeast at northeast edge of platform.

Dolerite dyke 1.2 m thick at 21.5 m.

Sample 23645 11.0 m Medium sandstone.
23646 30.5 m Coarse sandstone.

Note: Units 1 and 2 dip at 6° to 203°.

- gradational contact over several m -

- | | | | |
|---|---|------|------|
| 1 | Sandstone, white to yellowish grey [5Y 7/2] (w/same and light brown [5YR 6/4]), fine to very coarse with gritty lenses, laminated to very thin-bedded, massive. Parallel bedding and small trough cross-bedding. Some coarse lenses have abundant pinkish feldspar. Occasional laminae and stringers of greenish grey ripple-laminated fine sandstone up to 0.4 m thick. Indistinct non-branching vertical "columns" 0.5 to 1 cm across from 3.2 to 3.4 m, and common above 21 m (though no more distinct). | 50.0 | 50.0 |
|---|---|------|------|

Note: Lower 25 m of section measured up dolerite dyke that runs to southeast across southeast side of bluff. Unit becomes slabby above 40 m. Slightly carbonaceous greenish grey micaceous fine sandstone from 45.2 to 45.7 m. Dolerite dyke 0.4 m wide crosses section line at 46.7 m.

Sample 23644 43.0 m Coarse sandstone.
23643 20.2 m Coarse sandstone.
23642 1.6 m Coarse sandstone.
23641 0.0 m Medium sandstone.

FEATHER CONGLOMERATE (184+ m).

Moraine in rubbly mounds, mainly of grit.

Glacier ice.