ISSN 0110-2125

ANTARCTIC DATA SERIES No. 7

VICTORIA UNIVERSITY OF WELLINGTON

TAYLOR GLACIER

GLACIOLOGICAL AND SEDIMENTOLOGICAL DATA TABLES.

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Antarctic Research Centre

PUBLICATION OF
GEOLOGY DEPARTMENT
VICTORIA UNIVERSITY OF WELLINGTON
No. 10
JULY 1979

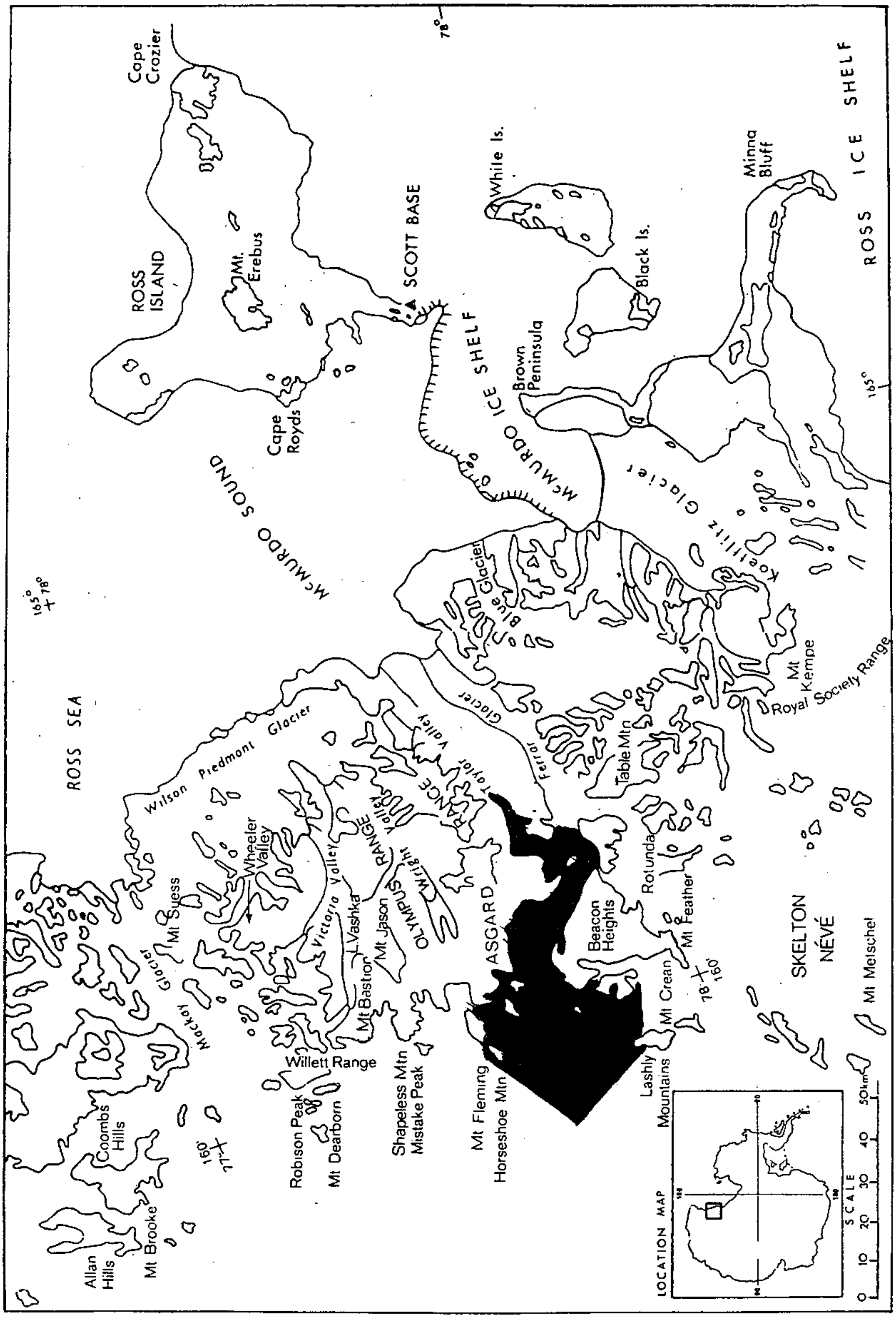

FIGURE 1. Sketch map of south Victoria Land, centred on Taylor Valley and Taylor Glacier (shaded).

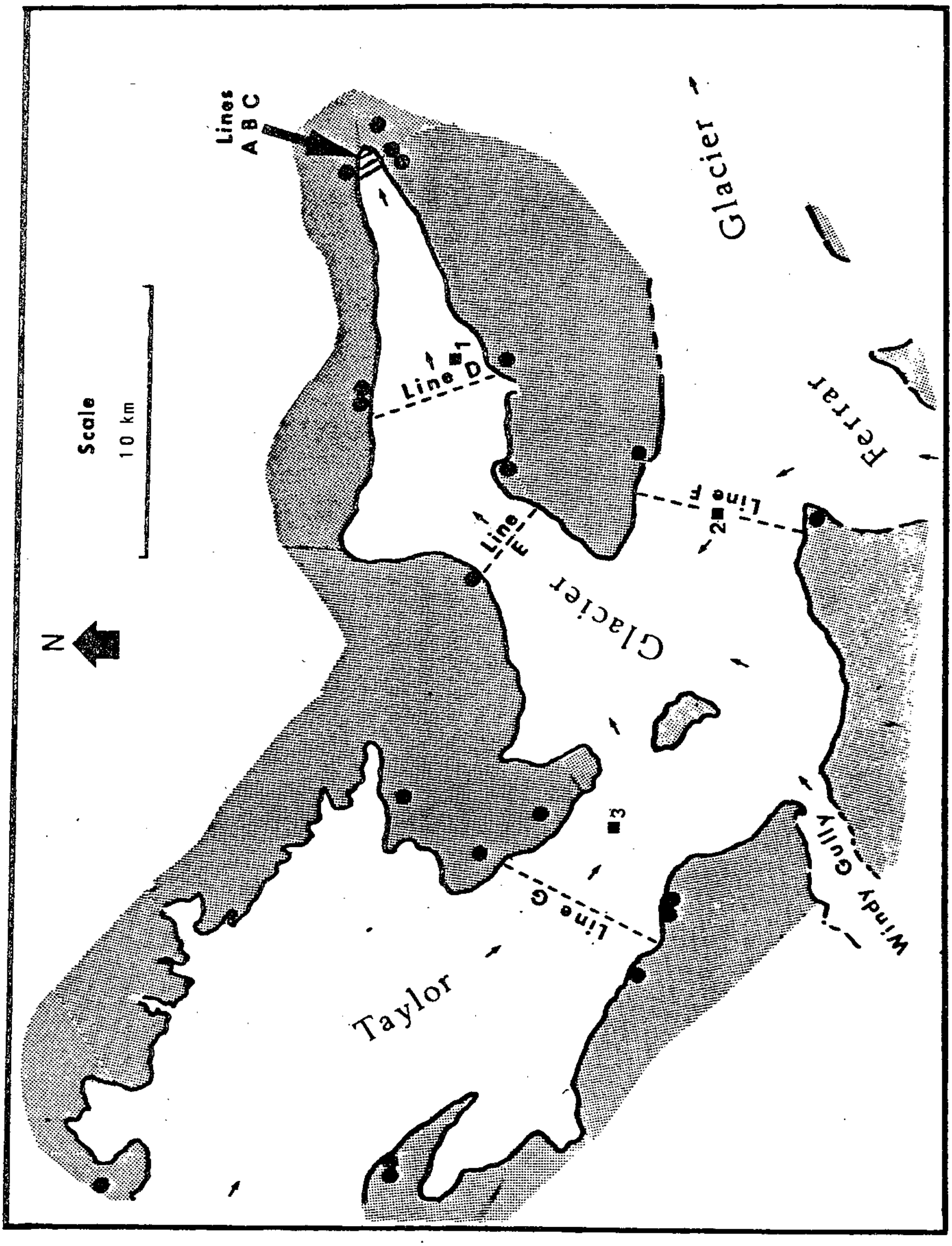

FIGURE 2. Lower Taylor Glacier map with marked locations of (1) ablation-velocity pole lines A-G (dashed lines); (2) survey network trig stations (filled circles); and (3) surface ice temperature sites 1, 2, 3 (filled squares).

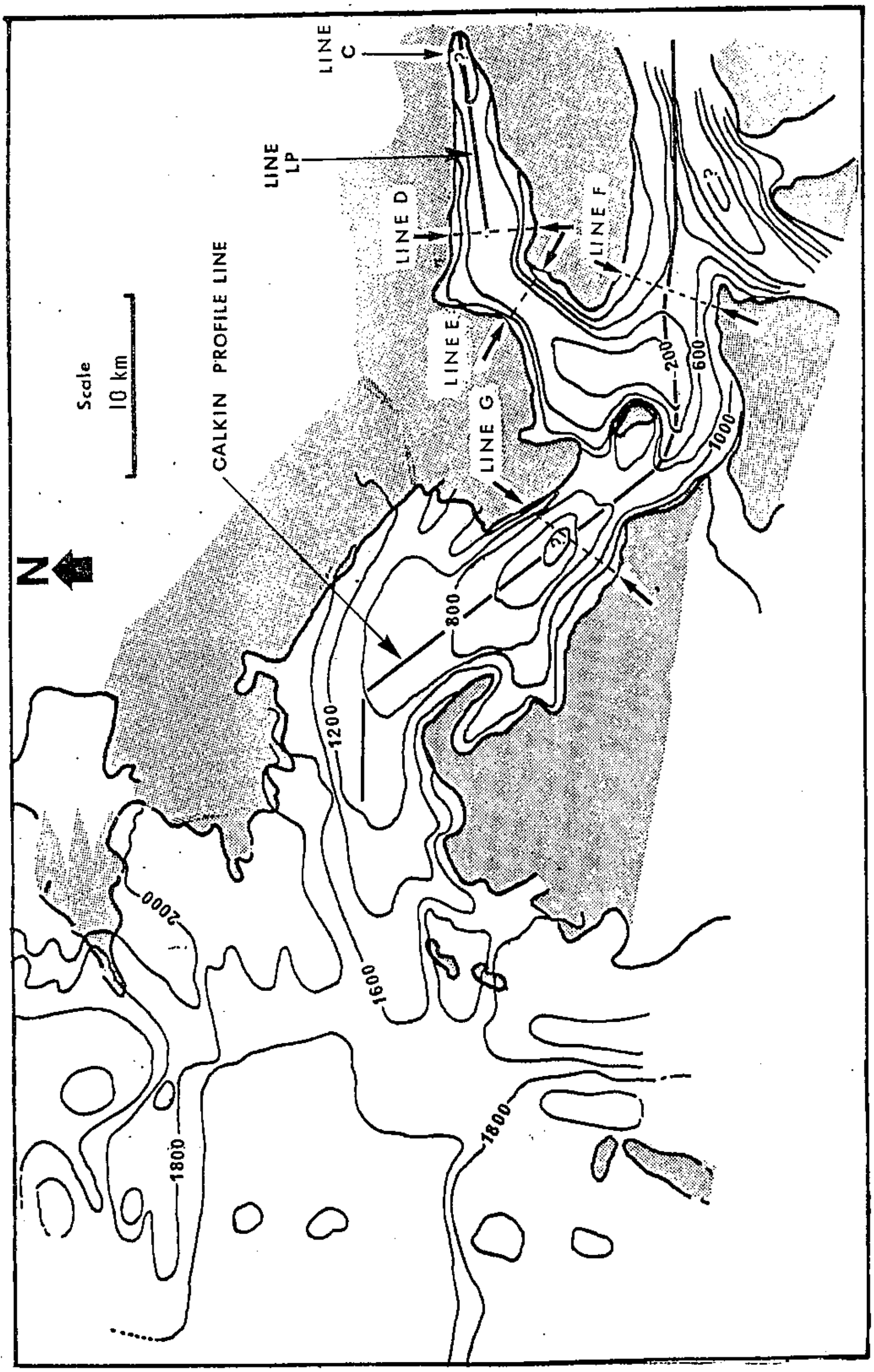

FIGURE 3. Ice bathymetry map for Taylor Glacier. Showing gravity profiles (lines C, D, E, F, G and LP) and part of Calkin's (1974) profile line. Bathymetry for upper Taylor Glacier, west of the Transantarctic Mts., is from Drewry (in press). Contour interval 200 m.

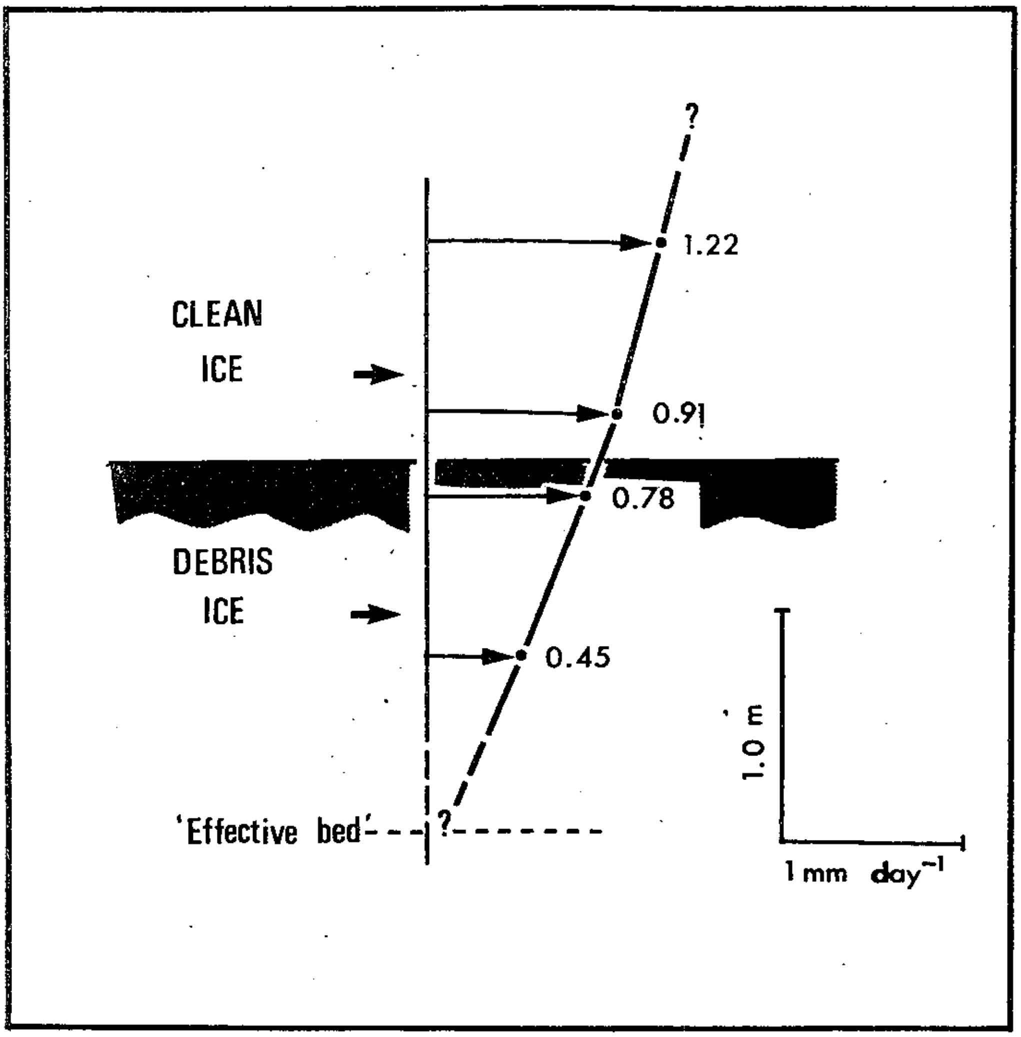

FIGURE 4. Averaged deformation rates for the basal debris ice and the lower part of the overlying clean ice, from the margin of lower Taylor Glacier.

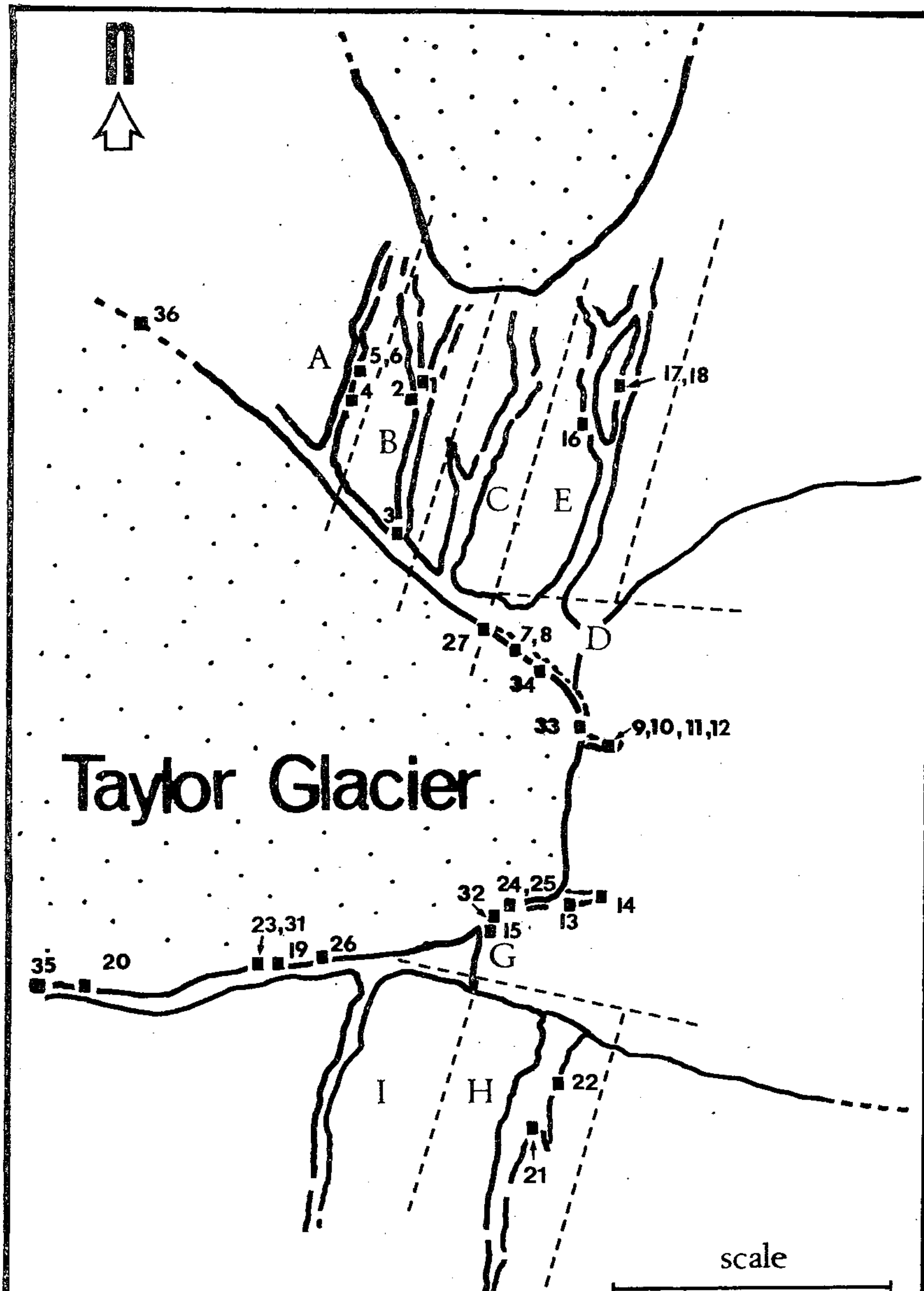

FIGURE 5. Pebble fabric sites (filled squares), Taylor Glacier and surrounds.

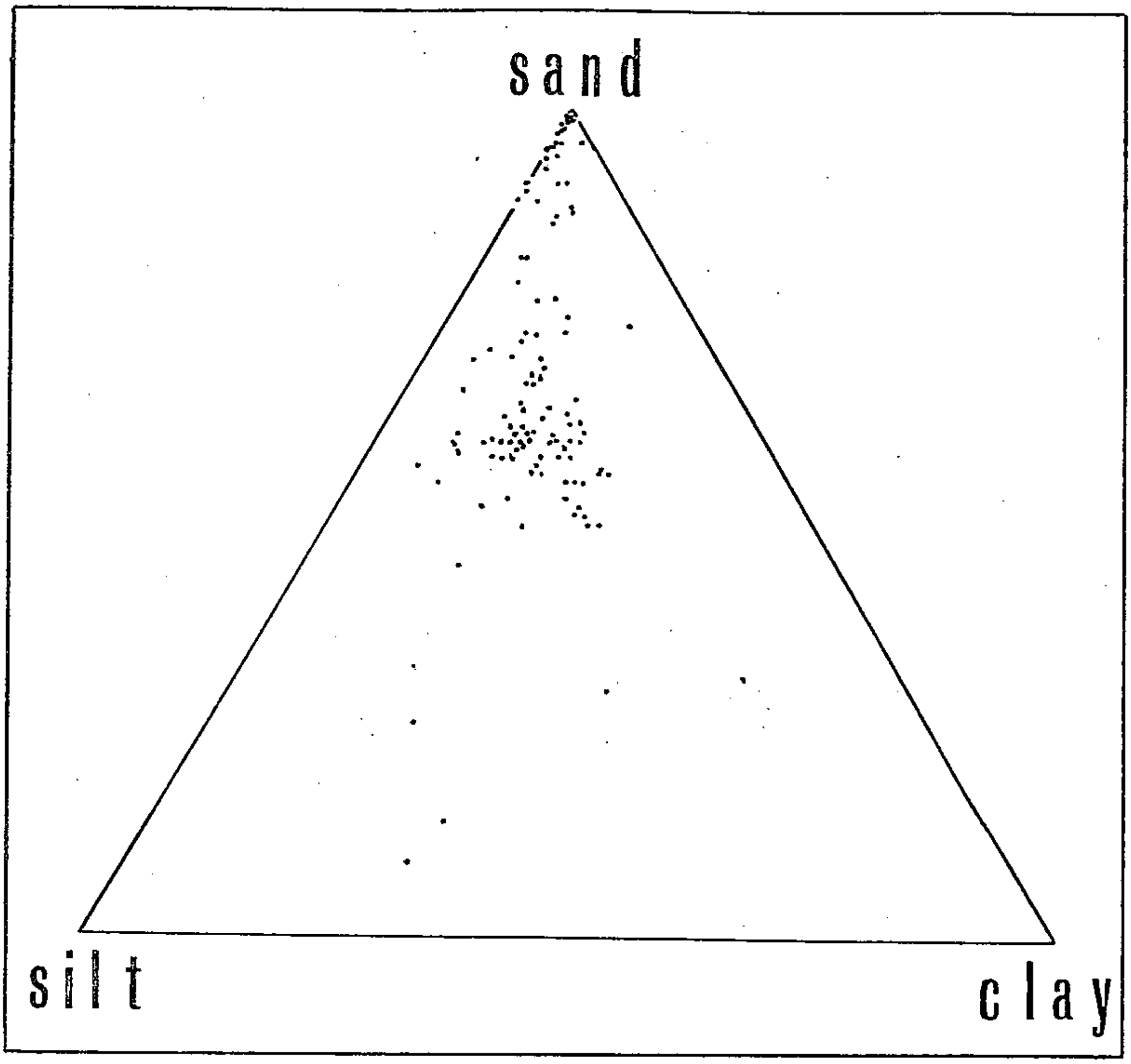

FIGURE 6. Sand - silt - clay percent plot for modern and ancient, basal, englacial, supraglacial and proglacial environments, Taylor Glacier and Taylor Valley.

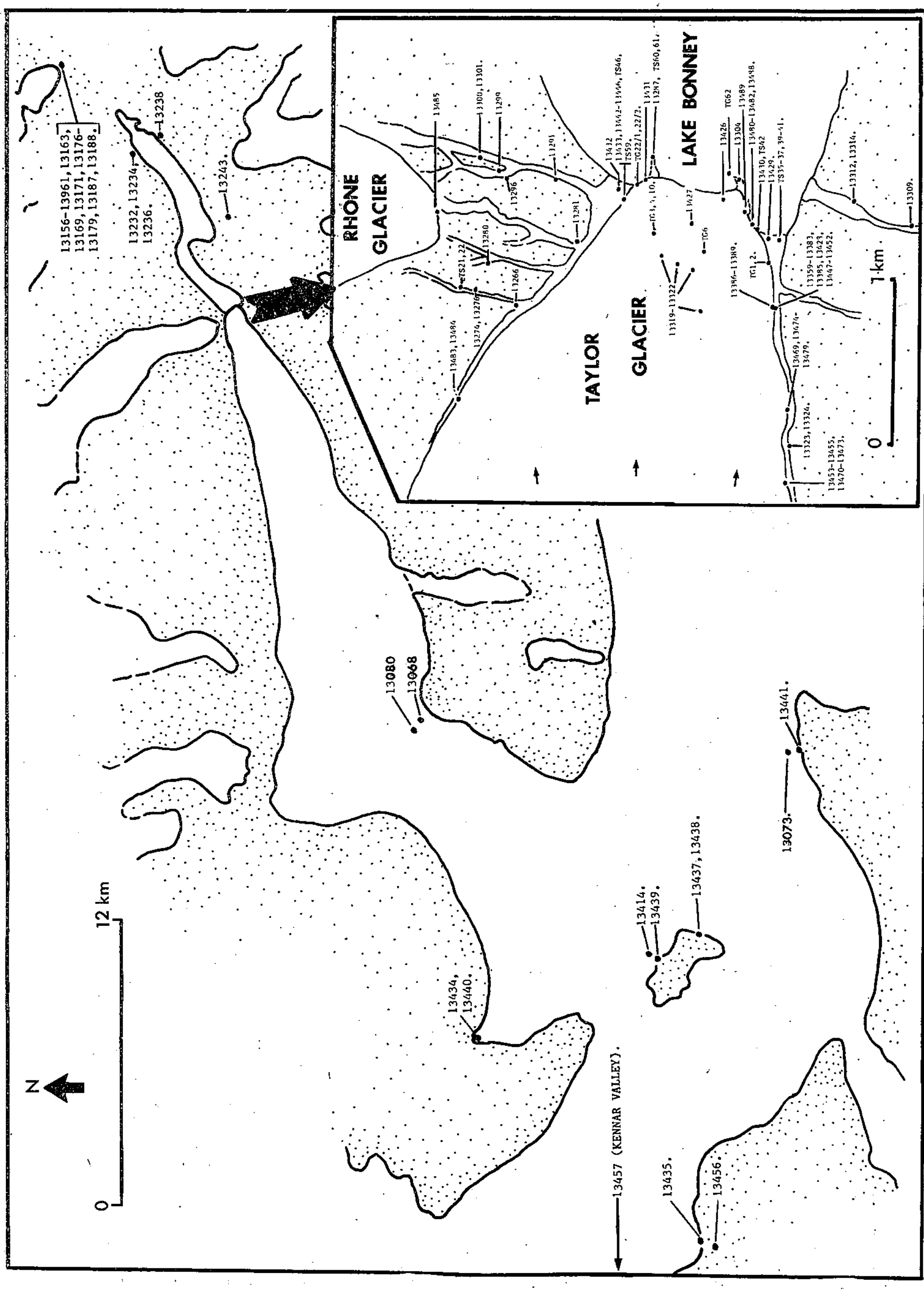

FIGURE 7. Sample collection sites, Taylor Glacier and upper Taylor Valley.

T A Y L O R   G L A C I E R :

GLACIOLOGICAL AND SEDIMENTOLOGICAL DATA TABLES

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CONTENTS

INTRODUCTION

Victoria University of Wellington Antarctic Expeditions have had a long involvement in the interpretation of glacial processes and the glacial history of McMurdo Sound and the Dry Valley region (Fig. 1). Since 1974 process studies of ice and sediment dynamics have centred on Taylor Valley, Taylor Glacier, and more recently McMurdo Sound. This publication presents selected tables of reduced glaciological and sedimentological data mainly from Taylor Glacier and upper Taylor Valley. These tables are part of a Ph.D. study of glacial debris entrainment, transport and deposition in polar ice, presented and published here because of the wide interest of such data to investigators of glacial processes and environments.

NOTES ON EACH TABLE

TABLE 1A. Surface ablation, 1975-78.

1B. Annual surface ablation, 1976-77.

64 ablation stakes (same poles used in ice velocity measurements (see Fig. 2)) on eight pole lines were measured for ice surface lowering between December 1975 and January 1977. Only slight variations in summer and winter ablation were recorded.

TABLE 2. Annual mass balance, 1976-77.

Balancing the annual net ablation (ice surface lowering, and marginal cliff ablation and calving) against the annual net accumulation (snow precipitation, and ice input from the Ferrar Glacier) indicates a MASS GAIN. The ELA (Equilibrium Line Altitude) is the elevation at which the mass balance is zero.

TABLE 3A. Surface ice movement from surveyed poles, 1976-78.

3B. Annual surface ice movements for 1976-77.

Seven pole lines were established (Fig. 2) and continuously surveyed (Nalder, 1978) for summer and winter ice velocities from January 1976 to January 1978.

TABLE 4. Englacial velocities for pole lines C, D, E, F and G, 1977-78.

Five englacial velocity profiles for centre-poles (lines C-G) were calculated from surface ice velocities (Table 3A) and ice thickness (Stern, 1978). Calculations indicate a maximum internal ice deformation of 10.52 my^{-1} (pole E5), and a maximum basal sliding velocity of 11.93 my^{-1} (pole G5).

TABLE 5. Annual ice discharge rates, 1976-77.

Annual ice discharge is a measure of a certain volume of ice passing through a known cross-sectional area, in a year. The ice discharge is expressed as an average velocity of a vertical column of ice, not influenced by perimeter frictional resistence or internal differential flow. Measured surface ice velocities (averaged values from Table 3B) are presented for comparison.

TABLE 6. Englacial and basal ice temperatures.

Englacial ice temperature profiles for centre-line poles (C4, D5, E5, F6 & G5) and basal ice temperatures for transverse lines C, D, E, F & G and a longitudinal line (from the snout to ELA) are presented. These temperatures are modelled, not measured.

TABLE 7A,B,C. Surface ice temperatures, 1976-78.

Three 15-20 m holes were drilled in the ice surface at sites near ablation/velocity pole lines D, F and G (Fig. 2). Surface ice summer temperatures were recorded using calibrated standard negative potential thermistors.

TABLE 8. Ice and sediment thicknesses.

Ice thickness was determined by gravity survey and radio-echo sounding (see ice bathymetry map - Fig. 3). Lower Taylor Glacier bathymetry profile lines C, D, E, F, G and LP were produced entirely from gravity measurements (Stern, 1978), using relative altitudes from USGS Reconnaissance Map Series (Taylor Glacier sheet). The bathymetry for upper Taylor Glacier was produced from air-borne echo-sounding runs by Calkin (1974) and Drewry (in press). Sediment thickness beneath upper Taylor Glacier (lines F and G) was calculated from the combined gravity and echo-sounding profiles (Stern, 1978).

The gravity stations were located at ablation-velocity pole sites. Stations C0, C7, D0, D11, E0, E9, F0, F11, G0, and G11 are unmarked sites situated on bedrock surrounding Taylor Glacier.

TABLE 9. Basal and englacial debris : ice concentrations.

Debris : ice concentrations are a measure of percent debris to ice by volume. Nine main sampling sites give good coverage of the exposed englacial and basal debris, and the distribution of debris concentrations (0.4 to 60.9 percent) in Taylor Glacier. Individual samples at each site are presented in the table as vertical sequences, corresponding to their englacial and basal positions in the ice marginal debris horizons.

TABLE 10. Basal ice and debris deformation rates.

Engineering dial gauges (accurate to 0.01 mm) measured ice and debris deformation rates in the basal ice at the cliffed margin, lower Taylor Glacier. The dial gauges were positioned in the clean, bubbly-ice (gauges 1 and 2) and in the underlying debris-charged ice (gauges 3 and 4). Ice-debris deformation, averaged over 12 days, showed no marked change in the decreasing deformation rates towards the glacier sole (Fig. 4).

TABLE 11. Supraglacial, englacial, basal and proglacial pebble size and lithology.

Over 250 pebbles (8-64 mm) per sample were used for each of 20 ice-contact, ice-marginal and pro-glacial environments, indicating wide variation in pebble lithologies and pebble size sorting.

TABLE 12. Pebble orientations and dips, Taylor and Wright Valleys.

Measurements of pebble long axis orientations and dips, for basal and englacial debris in Taylor Glacier, and glaciogene sediments of Taylor Valley (section U, Lacroix Glacier units 2 and 15 [Robinson, 1975, Fig. 3], F1-27 & F31-36) and Wright Valley (F28-30). Fabrics F1-27 & F31-36 are located on Figure 5; locations of fabric sites section U, Lacroix Glacier units 2 and 15, and F28-30 are described below.

Note: Pebble fabrics F31-34 are basal sites with pebble long axis (L) and intermediate axis (I) orientations and dips measured.

Fabric site	Location
	TAYLOR VALLEY
Section U	South side of eastern lobe of Lake Bonney, 14 m above sea level (77° 43.3' S : 162° 24.5' E).
Lacroix Glacier unit 15	Uppermost unit of 30 m exposed section in front of Lacroix Glacier (77° 41.2' S : 162° 24.5' E).
Lacroix Glacier unit 2	Unit towards base of the 30 m section in front of Lacroix Glacier.
	WRIGHT VALLEY
F28	Ice-cored debris mound in front of Wright Lower Glacier (77° 25.9' S : 162° 45.0' E).
F29 and F30	"Prospect Mesa" (Vucetich & Topping, 1972), floor of Wright Valley, directly south of Bull Pass, (77° 31.5' S : 161° 52.8' E).

TABLE 13. Sediment grain-size analysis.

Sand-silt-clay grain-size analyses are presented for 'present and past' glacial environments, on, in, under and surrounding Taylor Glacier. Figure 6 shows the wide distribution in sediment grain texture for these closely related sedimentary environments (Fig. 7).

TABLE 1A Surface ablation, 1975-78 (m.H_2O)

	27.12.75-24.10.76	24.10.76-2.1.77	2.1.77-2.11.77	2.11.77-10.1.78	10.1.78-26.10.78
A1	0.24	0.18	0.29	-	0.18
A2	0.22	0.18	0.27	0.10	0.18
A3	0.24	0.18	0.26	0.09	0.22
A4	0.26	0.15	0.26	0.05	0.20
A5	0.26	0.18	0.26	0.17	0.16
A6	0.24	0.19	-	-	-
B1	0.12	0.18	0.29	-	0.41
B2	0.22	0.15	0.21	-	-
B3	0.16	0.14	0.22	0.11	0.15
B4	0.17	0.15	0.23	0.12	0.17
B5	0.16	0.19	0.19	0.16	0.22
B6	0.14	0.19	-	-	-
C1	0.19	0.20	0.20	-	0.21
C2	0.21	0.09	0.29	0.08	0.18
C3	0.24	0.16	0.28	0.13	0.15
C4	0.19	0.18	0.38	0.06	0.17
C5	0.16	0.12	0.27	0.04	0.14
C6	0.21	0.18	0.34	-	0.16
		27.10.76-5.1.77	**5.1.77-4.11.77**	**4.11.77-13.1.78**	
D1		0.05	0.11	0.04	
D2		0.07	0.10	0.03	
D3		0.06	0.12	0.01	
D4		0.06	0.12	0.01	
D5		0.06	0.14	0.05	
D6		0.05	0.08	0.11	
D7		0.06	0.09	0.06	
D8		0.06	0.12	0.08	
D9		0.08	0.14	0.06	
D10		0.11	0.12	0.06	
		29.10.76-6.1.77	**6.1.77-5.11.77**	**5.11.77-15.1.78**	
E1		0.10	0.15	0.02	
E2		0.11	0.13	0.01	
E3		0.11	0.14	0.03	
E4		0.12	0.14	0.05	
E5		0.10	0.13	0.05	
E6		0.10	0.08	0.02	
E7		0.09	0.12	0.05	
E8		0.09	0.06	0.04*	
		6.11.76-9.1.77	**9.1.77-8.11.77**	**8.11.77-17.1.78**	
F1		0.05	0.01*	0.01	
F2		0.07	0.06	0.03	
F3		0.08	0.05	0.03	
F4		0.06	0.03	0.01	
F5		0.07	0.04	0.01*	
F6		0.06	0.04	0.03	
F7		0.06	0.03	0.01	
F8		0.06	0.02*	0.06	
F9		0.08	0.02	0.04	
F10		0.06	0.06	0.01	
		13.11.76-10.1.77	**10.1.77-14.11.77**	**14.11.77-22.1.78**	
G1		0.09	0.13	0.05	
G2		0.08	0.13	0.07	
G3		0.10	0.10	0.09	
G4		0.09	0.07	0.05	
G5		0.06	0.06	0.06	
G6		0.08	0.05	0.05	
G7		0.09	0.05	0.05	
G8		0.09	0.05	0.07	
G9		0.07	0.06	0	
G10		0.08	0.02	0	
				15.11.77-21.1.78	
H1				0.08	
H2				0.14	
H3				0.02*	
H4				0.02*	
H5				0	
H6				0.02*	
H7				0.01	
H8				0	

*Low surface ablation, due to wind drift accumulation.

TABLE 1B. Annual surface ablation, 1976-77 ($m. H_2O$)

Pole	OCT./NOV.1976-JAN.1977	JAN.1977-NOV.1977	OCT./NOV.1976-NOV.1977
A 1	0.18	0.29	0.47
A 2	0.18	0.27	0.45
A 3	0.18	0.26	0.44
A 4	0.15	0.26	0.41
A 5	0.18	0.26	0.44
A 6	0.19	-	-
B 1	0.18	0.29	0.47
B 2	0.15	0.21	0.36
B 3	0.14	0.22	0.36
B 4	0.15	0.23	0.38
B 5	0.19	0.19	0.38
B 6	0.19	-	-
C 1	0.20	0.20	0.40
C 2	0.19	0.29	0.48
C 3	0.16	0.28	0.44
C 4	0.18	0.38	0.56
C 5	0.12	0.27	0.39
C 6	0.18	0.34	0.52
D 1	0.05	0.11	0.16
D 2	0.07	0.10	0.17
D 3	0.06	0.12	0.18
D 4	0.06	0.09	0.15
D 5	0.06	0.14	0.20
D 6	0.05	0.08	0.13
D 7	0.06	0.09	0.15
D 8	0.06	0.12	0.18
D 9	0.08	0.14	0.22
D10	0.11	0.12	0.23
E 1	0.10	0.15	0.25
E 2	0.11	0.13	0.24
E 3	0.11	0.14	0.25
E 4	0.12	0.14	0.26
E 5	0.10	0.13	0.23
E 6	0.10	0.08	0.18
E 7	0.09	0.12	0.21
E 8	0.09	0.06	0.15
F 1	0.05	0.01*	-
F 2	0.07	0.06	0.13
F 3	0.08	0.05	0.13
F 4	0.06	0.03	0.09
F 5	0.07	0.04	0.11
F 6	0.06	0.04	0.10
F 7	0.06	0.03	0.09
F 8	0.06	0.02*	-
F 9	0.08	0.02	0.10
F10	0.06	0.06	0.12
G 1	0.09	0.13	0.22
G 2	0.08	0.13	0.21
G 3	0.10	0.10	0.20
G 4	0.09	0.07	0.16
G 5	0.06	0.06	0.12
G 6	0.08	0.05	0.13
G 7	0.09	0.05	0.14
G 8	0.09	0.05	0.14
G 9	0.07	0.06	0.13
G10	0.08	0.02	0.10

*Low surface ablation, due to wind drift accumulation.

TABLE 2 Annual Mass Balance, for glacier balance year 1976-77.

A B L A T I O N Z O N E

Location on the glacier surface (m a S.L)	Area (km^2)	Ablation*1 ($m.H_2O\ y^{-1}$)	Volume ice loss ($10^6 m^3 y^{-1}$)	Mass ice loss ($10^6 kg\ y^{-1}$)
Snout - 200m	1.2	0.36	0.47	432
200 - 400m	3.0	0.32	1.04	960
400 - 600m	10.0	0.29	3.15	2900
600 - 800m	34.0	0.25	9.23	8500
800 - 1000m	77.5	0.21	17.69	16275
1000 - 1200m	30.0	0.18	5.87	5400
1200 - 1400m	140.0	0.14	21.30	19600
1400 - 1600m	111.0	0.10	12.07	11100
1600 - 1800m	81.0	0.07	6.16	5670
1800 - 2000m	153.0	0.03	5.00	4590
2000 - 2075m (ELA)	125.0	0.01	1.36	1250
	765.7		83.34	76677
Loss by 'dry calving' from ice cliffs			2.52	2318
Loss by 'cliff ablation' (excluding dry calving)			0.53	483
TOTAL LOSSES			86.39	79478

A C C U M U L A T I O N Z O N E

Location on the glacier surface (m a S.L.)	Area (km^2)	Accumulation*2 ($m.H_2O\ y^{-1}$)	Volume ice gain ($10^6 m^3 y^{-1}$)	Mass ice gain ($10^6 kg\ y^{-1}$)
2075(ELA) - 2200m	251.0	0.13	56.80	52260
2200 - 2400m (ice divide)	402.0	0.13	35.47	32630
	653.0		92.27	84890
Gain, as ice input from Ferrar Glacier			4.44	4085
TOTAL GAINS			96.71	88975

THE DIFFERENCE IN THE MASS BALANCE IS 9497 Mkg MASS GAIN, FOR 1976-77

*1 Calculated error 3 percent.

*2 Estimated error 15 percent.

TABLE 3A Surface ice movement from surveyed poles, 1976-78 (in metres)

Pole	1.1.76-23.10.76	23.10.76-3.1.77	3.1.77-3.11.77	3.11.77-12.1.78
A1	1.69	0.52	1.50	0.50
A2	3.43	0.87	3.50	0.90
A3	3.62	0.93	3.40	0.99
A4	3.97	0.97	3.71	1.12
A5	3.52	0.91	3.45	0.96
A6	2.92	0.79	-	-
B1	2.39	0.14	2.38	0.79
B2	4.15	1.10	4.00	1.13
B3	5.37	-	4.03	1.20
B4	4.11	1.11	4.09	1.33
B5	3.83	1.04	3.84	1.10
B6	2.33	0.64	-	-
C1	2.15	0.86	1.65	1.27
C2	3.82	1.02	3.90	1.07
C3	4.54	1.04	4.39	1.25
C4	4.48	1.16	4.28	1.31
C5	4.20	1.03	3.99	1.41
C6	3.00	2.38	2.83	1.17
		31.10.76-6.1.77	6.1.77-4.11.77	4.11.77-15.1.78
D1		0.62	0.84	0.36
D2		0.53	1.63	0.24
D3		0.67	3.69	0.83
Church Rock		1.80	6.39	0.74
D4		0.82	4.52	1.03
D5		0.89	4.48	1.07
D6		0.83	4.29	0.97
D7		0.93	4.03	1.11
D8		0.43	2.23	0.67
D9		0.18	0.89	0.76
D10		0.60	0.72	0.82
E1		1.70	3.12	0.62
E2		2.01	6.59	1.55
E3		1.95	8.07	3.22
E4		2.33	11.33	2.60
E5		2.44	11.44	2.60
E6		2.29	10.58	2.34
E7		2.08	9.12	2.30
E8		1.20	5.24	0.98
		7.11.76-9.1.77	9.1.77-7.11.77	7.11.77-17.1.78
F1		0.26	0.40	0.13
F2		0.39	1.00	0.46
F3		0.48	1.63	0.47
F4		0.86	1.63	0.61
F5		1.04	1.81	0.45
F6		0.73	1.66	0.36
F7		0.49	1.49	0.33
F8		0.70	1.16	0.27
F9		1.04	0.80	0.32
G1		0.19	1.18	0.27
G2		0.31	1.37	0.31
G3		0.65	3.21	1.15
G4		1.89	11.05	2.62
G5		1.98	11.49	2.86
G6		2.00	11.21	2.78
G7		1.98	10.78	2.68
G8		1.05	5.95	1.67
G9		0.38	2.12	0.76
G10		0.10	1.99	0.89

TABLE 3B Annual surface ice movement* for 1976-77 (in metres).

Pole	Jan. 1976-Jan. 1977	Jan. 1977-Jan.1978
A1	2.21	2.00
A2	4.30	4.40
A3	4.55	4.39
A4	4.94	4.83
A5	4.43	4.41
A6	3.71	-
B1	2.53	3.17
B2	5.25	5.13
B3	5.37	5.23
B4	5.22	5.41
B5	4.87	4.94
B6	2.97	-
C1	3.01	2.92
C2	4.84	4.07
C3	5.58	5.64
C4	5.64	5.59
C5	5.23	5.40
C6	5.38	5.00
D1		1.20
D2		1.87
D3		4.52
Church Rock		7.13
D4		5.55
D5		5.55
D6		5.26
D7		5.14
D8		2.90
D9		1.65
D10		1.54
E1		3.74
E2		8.14
E3		11.29
E4		13.93
E5		14.04
E6		12.92
E7		11.42
E8		6.22
F1		0.53
F2		1.46
F3		2.10
F4		2.24
F5		2.26
F6		2.02
F7		1.82
F8		1.43
F9		1.12
F10		-
G1		1.45
G2		1.68
G3		4.36
G4		13.67
G5		14.35
G6		13.99
G7		13.46
G8		7.62
G9		2.88
G10		2.88

*Estimated error limits: Lines A, B, C ± 0.1 m; lines D, E ± 0.2 m; line G ± 0.1 m (C. Fink, pers. com.).

TABLE 4 ENGLACIAL VELOCITIES*1, for pole lines C, D, E, F and G, for the measurement year 1977-78.

Calculation of englacial velocities from:

$$u_s - u_h = \frac{2\beta(\rho g)^n (\sin^n \alpha)(H-h)^{n+1}}{n+1} \quad {}^{*2}$$

where u_s is the measured surface ice velocity and u_h is the ice velocity at height h above the glacier bed.

Basal (or sliding) velocity (u_b), where h=o;

$$\text{then } u_s - u_{h=o} = u_b$$

and velocity due to internal deformation (u_i),

$$\text{is } u_h - u_b = u_i \text{ (at h)}.$$

LINE C - POLE C5: where $\beta = 0.005$ (x10^5 pascals)$^{-3}$y^{-1}; Ice thickness is 280m.

Height above bed (m)	u_h (my^{-1})	u_b(my^{-1})	u_i(my^{-1})
h = 280	5.40 u_s	2.12	3.28
h = 180	5.35	2.12	3.23
h = 80	4.55	2.12	2.43
h = 0	2.12	2.12	0

LINE D - POLE D5: where $\beta = 0.009$ (x10^5 pascals)$^{-3}$y^{-1}; Ice thickness is 465m.

Height above bed (m)	u_h (m y^{-1})	u_b(m y^{-1})	u_i(m y^{-1})
h = 465	5.55 u_s	4.45	1.10
h = 0	4.45	4.45	0

LINE E - POLE E5: where $\beta = 0.0016$ (x10^5 pascals)$^{-3}$y^{-1}; Ice thickness is 625m.

Height above bed(m)	u_h (my^{-1})	u_b(my^{-1})	u_i(my^{-1})
h = 625	14.04 u_s	3.52	10.52
h = 525	14.03	3.52	10.51
h = 425	13.43	3.52	10.41
h = 325	13.48	3.52	9.96
h = 225	12.28	3.52	8.76
h = 125	9.74	3.52	6.22
h = 50	6.55	3.52	3.03
h = 0	3.52	3.52	0

LINE F - POLE F6: where $\beta = 0.0016$ (x10^5 pascals)$^{-3}$y^{-1}; Ice thickness is 640m.

Height above bed (m)	u_h (my^{-1})	u_b(my^{-1})	u_i(my^{-1})
h = 640	2.26 u_s	1.74	0.52
h = 0	1.74	1.74	0

LINE G - POLE G5: where $\beta = 0.0016$ (x10^5 pascals)$^{-3}$y^{-1}; Ice thickness is 1110m.

Height above bed (m)	u_h (my^{-1})	u_b(my^{-1})	u_i(my^{-1})
h = 1110	14.35 u_s	11.93	2.42
h = 0	11.93	11.93	0

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*1. Estimated error 10 per cent, due to high error in calculating β values.

*2. β and n are constants, dependent on temperature and ice crystal orientation respectively; α is the slope of the glacier surface; H is the total ice thickness.

TABLE 5 Ice discharge rates for glacier balance year, 1976-77 (in $m.y^{-1}$).

$$\text{Ice Discharge} = \frac{\text{Ablation} \times \text{Surface Area}}{\text{Cross-sectional Area}}$$

	Surface Area*1 (downglacier of each line)	Total Ablation*2 (downglacier of each line)	Cross-sectional Area*3	Ave.Veloc.*4 determined from total ablation and divided by the cross-sectional area.	Ave.of measured Ice Velocity*5 for the ice column at each cross-section.
	($x10^6 m^2$)	($x10^6 m^3 y^{-1}$)	($x10^6 m^2$)	($m.y^{-1}$)	($m.y^{-1}$)
Line C	1.20±0.05	0.62±0.04	0.23±0.02	2.7+0.4	2.9±0.1
Line D	23±1	7.0±0.5	0.98±0.07	7.2±1.0	5.0±0.2
Line E	48±2	14.0±1.0	1.03±0.08	13.6±2.0	12.5±0.2
Line F*6 (Knobhead)	-	-	1.92±0.14	-	2.0±0.1
*7 (Windy Gully)	-	-	0.15±0.09	-	2.4±1.6*8
Line G	226±9	40.1±2.8*9	3.66±0.27	11.0± 1.6	12.0±0.1
E.L.A.	766±31	82.0±5.7*10	12.9±2.7*11	6.4±1.7	-

*1. Measured total glacier surface area, downglacier of each line. Estimated error of 4 percent.

*2 Measured total ablation (includes surface ablation, cliff ablation and cliff calving), downglacier of each line. Calculated errors of 7 percent.

*3 Measured cross-sectional area, in $10^6 m^2$, modified from Stern, 1978. Calculated error 7.5 percent.

*4 Calculated errors 20-27 percent.

*5 Surveying error: lines C, F, G ±0.10m; Line D, E ±0.20m.

*6 Line F (Knobhead line) and Windy Gully are subsidiary sources to the downglacier Taylor ice system. Calculation of annual ice discharge at these sites is not possible.

*7 Cross-sectional area at Windy Gully line is an estimate from the ice bathymetry (Fig.3). Estimated error is 40 percent.

*8 Estimated ice velocity, with 40 percent error.

*9 Corrected value of total ablation. Calculated total ablation downglacier of line G is 44.55 x $10^6 m^2 m\ y^{-1}$, of which 4.44 x $10^6 m^3 y^{-1}$ is input from Ferrar Glacier, and therefore does not pass through the cross section at line G.

*10 Corrected value of total ablation for the whole of the Taylor Glacier ablation zone. Calculated total ablation downglacier of ELA is 86.39 x $10^6 m^3 y^{-1}$, of which 4.44 x $10^6 m^3 y^{-1}$ is input from Ferrar Glacier, and therefore does not pass through the cross section at the ELA.

*11 Cross sectional area at the ELA is an estimate from the ice bathymetry (Fig.3). Estimated error is 20 percent.

TABLE 6 ENGLACIAL and BASAL ICE TEMPERATURES.

ENGLACIAL ICE TEMPERATURES

LINE C - POLE C4: Ice thickness (H) is 280m; ablation ($\dot{B}$) is 0.39 my^{-1}; geothermal temperature gradient at the base of the glacier $\left(\frac{\delta\theta}{\delta h}\right)_b$ is 0.0360$^oCm^{-1}$; $\Delta\theta$ is the difference between the surface temperature (θ_t = -17.00^{o}C at line C) and the temperature at the glacier sole (θ_b); θ_h is the temperature at height h above the glacier bed.

Height above the bed (m)	$\Delta\theta$ (^{o}C)	θ_h (^{o}C)
h = 0 (glacier bed)	17.00	0 (θ_b)
h = 80	14.05	-2.95
h = 180	10.00	-7.00
h = 230	5.46	-11.54
h = 280 (glacier surface)	0	-17.00 (θ_t)

LINE D - POLE D5: Ice thickness (H) is 465m; ablation ($\dot{B}$) is 0.27 my^{-1}; geothermal temperature gradient at the base of the glacier $\left(\frac{\delta\theta}{\delta h}\right)_b$ is 0.0223^{o}C m^{-1}; $\Delta\theta$ is the difference between the surface temperature (θ_t = -19.20^{o}C at line D) and the temperature at the glacier sole (θ_b); θ_h is the temperature at height h above the glacier bed.

h = 0	-19.20	0 (θ_b)
h = 65	17.66	-1.54
h = 165	15.24	-3.96
h = 265	12.16	-7.04
h = 365	7.64	-11.56
h = 400	5.48	-13.72
h = 465	0	-19.20 (θ_t)

LINE E - POLE E5: Ice thickness (H) is 625m; ablation ($\dot{B}$) is 0.25 my^{-1}; geothermal temperature gradient at the base of the glacier $\left(\frac{\delta\theta}{\delta h}\right)_b$ is 0.0143^{o}C m^{-1}; $\Delta\theta$ is the difference between the surface temperature (θ_t = -19.68^{o}C at line E) and the temperature at the glacier sole (θ_b); θ_h is the temperature at height h above the glacier bed.

h = 0	-19.68	0 (θ_b)
h = 50	19.28	-0.39
h = 125	17.81	-1.86
h = 225	16.15	-3.53
h = 325	14.10	-5.58
h = 425	11.28	-8.40
h = 525	7.06	-12.62
h = 575	3.94	-15.74
h = 625	0	-19.68 (θ_t)

LINE F - POLE F6; Ice thickness (H) is 640m; ablation ($\dot{B}$) is 0.11 my^{-1}; geothermal temperature gradient at the base of the glacier $\left(\frac{\delta\theta}{\delta h}\right)_b$ is 0.0229^{o}C m^{-1}; $\Delta\theta$ is the difference between the surface temperature (θ_t = -20.10^{o}C at line F) and the temperature at the glacier sole (θ_b); θ_h is the temperature at height h above the glacier bed.

h = 0	-20.10	0 (θ_b)
h = 40	19.14	-0.96
h = 140	16.87	-3.23
h = 240	14.44	-5.66
h = 340	11.75	-8.35
h = 440	8.43	-11.67
h = 540	4.70	-15.40
h = 600	2.03	-18.07
h = 640	0	-20.10 (θ_t)

LINE G - POLE G5: Ice thickness (H) is 1110m; ablation ($\dot{B}$) is 0.15 my^{-1}; geothermal temperature gradient at the base of the glacier $\left(\frac{\delta\theta}{\delta h}\right)_b$ is 0.0082$^oC\ m^{-1}$; $\Delta\theta$ is the difference between the surface temperature (θ_t = -21.50^oC at line G) and the temperature at the glacier sole (θ_b); θ_h is the temperature at height h above the glacier bed.

Height above the bed (m)	$\Delta\theta$ (^oC)	θ_h (^oC)
h = 0	~21.50	0 (θ_b)
h = 10	21.37	-0.13
h = 110	20.59	-0.91
h = 210	19.78	-1.72
h = 310	18.79	-2.71
h = 410	17.81	-3.69
h = 510	16.67	-4.83
h = 610	15.26	-6.24
h = 710	13.60	-7.90
h = 810	11.50	-10.00
h = 910	8.75	-12.75
h = 1010	4.99	-16.51
h = 1060	2.81	-18.69
h = 1110	0	-21.50

BASAL ICE TEMPERATURES

LINE C: Surface temperature (θ_t) is -17.00^oC; ablation ($\dot{B}$) is 0.39 my^{-1}.

Pole	Ice thickness (m)	$\left(\frac{\delta\theta}{\delta h}\right)_b$ ($^oC\ m^{-1}$)	$\Delta\theta$ (^oC)	θ_b (^oC)
C1	225	0.0397	13.39	-3.61
C2	245	0.0397	15.15	-1.85
C3	270	0.0382	17.00	0
C4	280	0.0360	17.00	0
C5	295	0.0332	17.00	0
C6	300	0.0273	17.00	0

LINE D: Surface temperature (θ_t) is -19.20^oC; ablation ($\dot{B}$) is 0.27 my^{-1}.

D1	150	0.0397	7.09	-12.11
D2	250	0.0397	13.41	-5.79
D3	385	0.0306	~19.20	0
D3A	425	0.0261	~19.20	0
D4	450	0.0236	~19.20	0
D5	465	0.0223	~19.20	0
D6	375	0.0318	~19.20	0
D7	250	0.0397	13.41	-5.79
D8	150	0.0397	7.09	-12.11
D9	60	0.0397	2.54	-16.66
D10	35	0.0397	1.45	-17.75

LINE E: Surface temperature (θ_t) is -19.68^oC; ablation ($\dot{B}$) is 0.25 my^{-1}.

E1	225	0.0397	11.42	-8.26
E2	355	0.0369	~19.68	0
E3	495	0.0218	~19.68	0
E4	600	0.0154	~19.68	0
E5	625	0.0143	~19.68	0
E6	460	0.0247	~19.68	0
E7	250	0.0397	13.08	-5.92
E8	200	0.0397	9.88	-9.80

LINE F - Surface temperature (θ_t) is -20.10°C.

Pole	Ice thickness (m)	Ablation (my^{-1})	$\left(\frac{\delta\theta}{\delta h}\right)_b$ (°C m^{-1})	$\Delta\theta$(°C)	θ_b(°C)
F1	65	0.03	0.0397	2.38	-17.72
F2	100	0.14	0.0397	4.28	-15.82
F3	240	0.13	0.0397	10.94	-9.16
F4	375	0.10	0.0397	17.56	-2.54
F5	495	0.12	0.0313	~20.10	0
F6	640	0.11	0.0229	~20.10	0
F7	500	0.10	0.0323	~20.10	0
F8**	295	0.10	0.0397	13.31	-6.79
F9	185	0.11	0.0397	8.05	-12.05
F10	40	0.12	0.0397	1.62	-18.48

LINE G - Surface temperature (δ_t) is -21.50°C; ablation ($\dot{B}$) is 0.15 my^{-1}.

Pole	Ice thickness (m)	$\left(\frac{\delta\theta}{\delta h}\right)_b$ (°C m^{-1})	$\Delta\theta$(°C)	θ_b(°C)
G1A	40	0.0397	1.58	-19.92
G1B	85	0.0397	3.62	-17.88
G2	200	0.0397	9.00	-12.50
G3	250	0.0397	11.71	-9.79
G3A	580	0.0248	~21.50	0
G4	725	0.0177	~21.50	0
G5	1110	0.0082	~21.50	0
G6	900	0.0123	~21.50	0
**	820	0.0145	~21.50	0
G7	785	0.0155	~21.50	0
G8	650	0.0210	~21.50	0
G9	485	0.0320	~21.50	0
G10	315	0.0397	15.37	-6.13

LONGITUDINAL LINE (from snout to ELA).

Distance from snout (km)	Elevation m.aS.L.	Surface temperature θ_t(°C)	Ablation ($\dot{B}$) (my^{-1})	Ice thickness (H) (m)	$\left(\frac{\delta\theta}{\delta h}\right)_b$ (°C m^{-1})	$\Delta\theta$ (°C)	θ_b (°C)
0.4	180	-17.00	0.39	180	0.0397	0.79	-7.21
0.9	200	-17.08	0.37	200	0.0397	11.08	-6.00
- Line C							
1.5	300	-17.48	0.35	300	0.0354	~17.48	0
2.6	350	-17.68	0.35	150	0.0397	7.50	-10.18
3.1	400	-17.88	0.33	100	0.0397	4.53	-13.35
7.4	600	-18.68	0.29	210	0.0397	10.92	-7.76
7.7	610	-18.72	0.27	210	0.0397	10.68	-8.04
9.9	650	-18.88	0.27	250	0.0397	13.41	-5.47
12.3	730	-19.20	0.27	400	0.0288	~19.20	0
- Line D							
14.3	800	-19.48	0.25	500	0.0211	~19.48	0
- Line E							
20.0	890	-19.84	0.23	690	0.0128	~19.84	0
22.7	920	-19.86	0.23	720	0.0117	~19.96	0
25.7	970	-20.16	0.23	770	0.0104	~20.16	0
26.4	980	-20.20	0.23	780	0.0100	~20.20	0
26.8	1000	-20.28	0.21	700	0.0144	~20.28	0
28.4	1160	-20.92	0.20	760	0.0128	~20.92	0
31.6	1200	-21.08	0.17	620	0.0206	~21.08	0
32.2	1210	-21.12	0.15	610	0.0226	~21.12	0
33.1	1220	-21.16	0.15	420	0.0381	~21.16	0
35.1	1240	-21.24	0.15	440	0.0360	~21.24	0
36.6	1250	-21.28	0.15	650	0.0207	~21.28	0
36.8	1250	-21.28	0.15	850	0.0134	~21.28	0
39.3	1280	-21.40	0.15	880	0.0127	~21.40	0
40.6	1300	-21.48	0.15	700	0.0187	~21.48	0

** Site of intersection between longitudinal radio-echo sound profile (Calkin, 1974) and the transverse gravity profiles (Stern, 1978).

- Line G							
47.1	1390	-21.84	0.15	590	0.0247	~21.84	0
47.5	1400	-21.88	0.13	470	0.0355	~21.88	0
51.3	1490	-22.24	0.13	490	0.0342	~22.24	0
59.8	1620	-22.76	0.08	420	0.0397	19.29	-3.47
68.7	1750	-23.28	0.08	350	0.0317	15.62	-7.66
71.3	1780	-23.40	0.08	230	0.0397	9.99	-13.41
72.1	1800	-23.48	0.05	260	0.0397	10.99	-12.49
72.5	2000	-24.28	0.02	470	0.0397	19.57	-4.70
72.9	2050	-24.48	0.01	520	0.0397	21.85	-2.63
76.7 - ELA							

TABLE 7A Surface ice temperatures, 1976-78 (in ^{o}C).

H O L E 1 (Line D)

Depth (m)	Early November (1976)	Late November (1976)
17.50		-16.10
17.35	-15.85	
16.90	-15.75	
16.50		-16.43
16.35	-16.17	
15.90	-16.15	
15.50		-16.43
15.35	-16.33	
14.90	-16.25	
14.50		-17.04
14.35	-16.53	
13.90	-16.50	
13.50		-16.63
13.35	-16.47	
12.90	-16.60	
12.50		-17.32
11.50		-17.24
10.50		-17.71
9.50		-18.25
8.50		-18.73
7.50		-19.47
6.50		-20.19
5.50		-10.61
4.50		-21.00
3.50		-20.30
2.50		-18.60
1.50		-15.24
0.50		?
Surface		- 2.92

TABLE 7B Surface ice temperatures, 1976-78 (in ^{o}C).

H O L E 2 (Line F)

Depth (m)	Early November (1977)	Early December (1977)	Mid January (1978)
20.0	-20.11		
19.0	-20.08		
18.0	-20.02		
17.0	-20.12		
16.0	-20.22		
15.4			-20.70
15.0	-20.21	-20.45	
14.4			-21.02
14.0	-20.31	-20.53	
13.4			-21.29
13.0	-20.46	-20.75	
12.4			-21.58
12.0	-20.70	-21.08	
11.4			-21.91
11.0	-21.01	-21.43	
10.4			-21.95
10.0	-21.40	-21.97	
9.4			-22.21
9.0	-22.18	-22.41	
8.4			-21.91
8.0	-22.73	-23.31	
7.4			-21.21
7.0	-23.34	-23.85	
6.4			-20.20
6.0	-24.67	-24.27	
5.4			-18.27
5.0	-25.10	-24.13	
4.4			-15.25
4.0	-25.69	-23.17	
3.3			-15.45
3.0	-23.37	-21.47	
2.2			-12.47
2.0	-19.97	-18.22	
1.1			- 8.25
1.0	-13.57	-13.04	
Surface		- 4.85	- 7.30

TABLE 7C Surface ice temperatures, 1976-78 (in °C).

H O L E 3 (Line G)

Depth (m)	Mid November (1976)	Mid January (1976)
15.00	-21.63	
14.40		-22.66
14.00	-21.75	
13.40		-22.05
13.00	-22.02	
12.40		-22.56
12.00	-22.37	
11.40		-22.74
11.00	-22.65	
10.40		-23.01
10.00	-23.24	
9.40		-23.26
9.00	-23.90	
8.40		-23.45
8.00	-24.62	
7.40		-23.45
7.00	-25.34	
6.40		-23.17
6.00	-25.79	
5.40		-22.14
5.00	-25.53	
4.40		-20.57
4.00	-24.54	
3.40		-17.92
3.00	-22.13	
2.40		-14.21
2.00	-16.36	
1.40		- 9.66
1.00	-13.13	
0.40		- 3.89
Surface	- 8.57	

TABLE 8 Ice and Sediment Thickness* (in metres).

POLE LINE A.

Gravity station	Ice surface relative altitude (m above S.L)	Base of ice relative altitude (m above S.L)	Ice thickness (m)	Sediment thickness (m)
C0	180	180	0	
C1	172	-53	225	
C2	175	-70	245	
C3	186	-84	270	
C4	183	-97	280	
C5	183	-112	295	
C6	181	-119	300	
C7	184	184	0	
D0	700	700	0	
D1	715	565	150	
D2	718	468	250	
D3	722	337	385	
D3A	720	295	425	
D4	725	275	450	
D5	730	265	465	
D6	733	358	375	
D7	732	482	250	
D8	731	481	150	
D9	725	665	60	
D10	716	681	35	
D11	707	707	0	
E0	850	850	0	
E1	865	640	225	
E2	865	510	355	
E3	864	369	495	
E4	859	259	600	
E5	851	226	625	
E6	853	393	460	
E7	852	602	250	
E8	852	652	200	
E9	851	851	0	
F0	920	920	0	0
F1	978	913	65	38
F2	975	875	100	225
F3	983	743	240	525
F4	972	597	375	600
F5	980	485	495	613
F6	986	346	640	425
F7	980	480	500	425
F8**	980	685	295	263
F9	977	792	185	163
F10	972	932	40	38
F11	973	973	0	0
G0	1300	1300	0	0
G1A	1235	1175	40	0
G1B	1257	1172	85	13
G2	1317	1117	200	25
G3	1327	1077	250	138
G3A	1333	753	580	300
G4	1330	605	725	388
G5	1328	218	1110	563
G6	1315	415	900	550
**	1230	410	820	550
G7	1323	535	785	563
G8	1320	670	650	400
G9	1320	835	485	200
G10	1325	1010	315	0
G11	1433	1433	0	0

* Estimated errors, ± 7 per cent for lines C-G and ± 20 per cent for longitudinal line (from Stern, 1978)

** Intersection sites between gravity and echo-sounding profiles.

Gravity station	Ice surface relative altitude (m above S.L)	Base of ice relative altitude (m above S.L)	Ice thickness (m)
LP0	601	-	-
LP1	576	271	305
LP2	530	310	220
LP3	493	288	205
LP4	445	285	160
LP5	417	267	150
LP6	391	261	130
LP7	350	190	160
LP8	323	148	175
LP9	297	137	160
LP10	279	134	145
LP11	269	144	125
LP12	247	137	110
LP13	176	96	80
LP14	142	102	40
LP19	96	66	30

Upper Taylor Glacier profile, from Calkin (1974a)

Distance upglacier (km)			
40	770	120	650
42.5	850	0	850
45	915	-215	1130
48	980	400	580
50	930	620	310
53	890	690	200
55	970	520	450
57	1040	60	980
60	1040	490	550
63	1170	600	570
65	1230	820	380
67	1230	600	630
68	1230	410	820
70	1260	530	730
71	1280	600	680
72	1290	800	490
75	1370	1010	360
80	1480	970	550
83.5	1530	820	710
85	-	-	-
90	1670	1040	630
95	-	-	-

Longitudinal profile taken from the sub-ice bathymetry map (Fig. 3), drawn from Drewry (in press), Calkin (1974a), and Stern (1978).

Distance from Taylor Glacier "Ice Divide" (km)			
0	2375	1900	475
3.0	2350	1850	500
6.0	2300	1820	480
8.8	2250	1760	490
9.4	2200	1750	450
12.2	2150	1690	460
14.8 (ELA)	2100	1630	470
18.6	2050	1530	520
19.0	2000	1530	470
19.4	1800	1540	260
20.2	1780	1550	230
22.8	1750	1400	350
31.7	1620	1200	420
40.2	1490	1000	490
44.0	1400	930	470
44.4	1390	800	590
50.9 - Line G	1300	600	700
52.2 - Line G	1280	400	880
54.7	1250	400	850
54.9	1250	600	650

Distance from Taylor Glacier "Ice Divide" (km)	Ice surface relative altitude (m above S.L)	Base of ice relative altitude (m above S.L)	Ice thickness (m)
56.4	1240	800	440
58.4	1220	800	420
59.3	1210	600	610
59.9	1200	580	620
63.1	1160	400	760
64.7	1000	300	700
65.1	980	200	780
65.8	970	200	770
68.8	920	200	720
71.5	890	200	690
- Line E			
77.2	800	300	500
- Line D			
79.2	730	330	400
81.6	650	400	250
83.8	610	400	210
84.1	600	390	210
88.4	400	300	100
88.9	350	200	150
90.0	300	0	300
- Line C			
90.6	200	- ?	>200
90.9	180	0	180
91.5	90	90	0

TABLE 9 : Basal and englacial debris : ice concentrations.

Site		V.U.W. Catalogue No.	Field No.	Percent Debris:Ice *
(i)	Basal and Englacial samples, upper Taylor Glacier			
		13434	Ice 1	60.9
		13435	Ice 2	23.3
		13437	Ice 4	44.1
		13438	Ice 5	7.2
		13439	Cavendish 2	7.3
		13440	Dune 2	5.3
		13441	Knobhead 2	4.9
(ii)	Basal samples, lower Taylor Glacier			
		13453	J1	9.2
		13454	J2	25.6
		13455	J3	54.0
		13470	TG 101	60.3
		13471	TG 102	12.5
		13472	TG 103	36.4
		13473	TG 104	68.9
(iii)	Englacial and basal samples, lower Taylor Glacier			
		13452	E6	4.4
		13451	E5	0.4
		13447	E1	20.0
		13448	E2	20.9
		13449	E3	24.2
		13450	E4	39.0
(iv)	Basal samples, lower Taylor Glacier			
		13474	TG 105	<1.3
		13475	TG 106A	<1.2
		13476	TG 106B	7.2
		13477	TG 107	11.2
		13478	TG 108	32.1
(v)	Basal samples, lower Taylor Glacier			
		13480	TG 110	22.7
		13481	TG 111	26.9
		13482	TG 112	42.6
(vi)	Basal samples, lower Taylor Glacier			
		13442	D1	18.1
		13444	D3	14.9
		13445	D4	20.0
		13446	D5	7.9
(vii)	Basal samples, lower Taylor Glacier			
		13483	TG 113	<1.3
		13484	TG 114	20.1
(viii)	Englacial samples, lower Taylor Glacier			
	a.	13469	TG 100	3.9
	b.	13489	Englacial 1	3.1
(ix)	Englacial samples, Rhone, Wright Upper and Victoria Upper Glaciers			
		13485	RG 115	1.3
		13486	W.U.G 116	<1.3
		13487	V.U.G 117	3.7

*1 by volume.

*2 Samples 434, 435, 437 may have undergone ice loss before debris : ice analysis was undertaken. Re-sampling of 434 & 437 is shown in samples 440 and 438, respectively.

TABLE 10 Basal ice and debris deformation rates, (mm. day^{-1})

	GAUGE Nos. 1.	2.	3.	4.
First 20 hours (Initial gauge settings)	1.39	1.15	0.89	0.45
DAY 1	1.40	1.27	0.98	0.50
DAY 2	1.39	1.19	1.00	0.49
DAY 3	1.35	1.09	0.93	0.46
DAY 4	1.30	1.04	0.92	0.46
DAY 5	1.31	1.03	0.89	0.44
DAY 6 (Gauges reset)	1.28	1.02	0.91	0.41
DAY 7	1.40	1.05	0.94	0.45
DAY 8	1.24	0.98	0.86	0.42
Daily average for days 1-8	1.33	1.08	0.93	0.45
DAYS 9-12 (Gauges reset) (daily average)	1.12	0.73	0.62	-
MEAN daily average for days 1-12	1.22	0.91	0.78	0.45

TABLE 11: Supraglacial, englacial, basal and proglacial pebble size and lithology.

A. SUPRAGLACIAL PEBBLE SAMPLES, snout of Taylor Glacier

Catalogue No.	Field No.	Coarse Dolerite	Fine Dolerite	Total Dolerite	Porphyry	Granitic	Basalt	Rest	Percent Total
8-16 mm									
13427	WG/Kh 12	45.9	22.4	68.3	8.2	22.4	-	1.2	46.2
13426	FM 13	47.9	11.0	58.9	3.7	34.7	-	2.7 q	69.3
-	TG-10	53.0	-	53.0	20.0	9.0	-	18.0	88.7
16-32 mm									
13427	WG/Kh 12	32.9	17.6	50.5	21.2	25.9	-	2.4	46.2
13426	FM 13	65.9	9.4	75.3	2.4	18.8	-	3.5 s	26.9
-	TG-10	36.0	-	36.0	36.0	10.0	-	18.0	11.3
32-64 mm									
13427	WG/Kh 12	42.9	14.3	57.1	28.6	14.3	-	-	7.6
13426	FM 13	66.6	16.6	83.2	8.3	8.3	-	-	3.8
-	TG-10	-	-	-	-	-	-	-	-

SUPRAGLACIAL PEBBLE SAMPLES, mid Taylor Glacier (E. line)

Catalogue No.	Field No.	Coarse Dolerite	Fine Dolerite	Total Dolerite	Porphyry	Granitic	Basalt	Rest	Percent Total
8-16 mm									
13080	WG 6	27.0	10.8	37.8	13.5	45.9	-	2.7 q	52.1
13068	FM 7	73.8	19.8	93.6	1.6	1.6	-	3.2 q	68.1
16-32 mm									
13080	WG 6	46.3	13.0	59.3	16.7	22.2	-	1.9 s	38.0
13068	FM 7	82.5	12.3	94.8	-	-	-	5.3 s	30.8
32-64 mm									
13080	WG 6	21.4	7.1	28.5	28.6	35.7	-	7.1 s	9.9
13068	FM 7	100.0	-	100.0	-	-	-	-	1.1

SUPRAGLACIAL PEBBLE SAMPLES, upper Taylor Valley.

Catalogue No.	Field No.	Coarse Dolerite	Fine Dolerite	Total Dolerite	Porphyry	Granitic	Basalt	Rest	Percent Total
8-16 mm									
13073	Kh 4	30.5	14.0	44.5	5.5	47.9	-	2.1	82.2
13414	CM 2	50.0	12.0	62.0	4.7	31.4	-	1.9	84.6
16-32 mm									
13073	Kh 4	40.9	20.5	61.4	9.1	29.5	-	-	15.3
13414	CM 2	68.2	9.1	77.3	2.3	20.5	-	-	14.4
32-64 mm									
13073	Kh 4	42.9	42.9	85.8	-	14.3	-	-	2.4
13414	CM 2	100.0	-	100.0	-	-	-	-	1.0

B. ENGLACIAL AND BASAL PEBBLE SAMPLES, snout of Taylor Glacier

Catalogue No.	Field No.	Coarse Dolerite	Fine Dolerite	Total Dolerite	Porphyry	Granitic	Basalt	Rest	Percent Total
8-16 mm									
13428	PS 1	34.5	8.2	42.7	6.2	46.9	2.6	1.5	71.1
13430	PS 3	25.9	6.9	32.8	6.2	51.0	1.0	8.5 q	85.1
13431	PS 4	27.2	5.6	32.8	9.3	49.8	3.1	5.0	82.4
13433	PS 6	26.3	2.3	28.6	6.5	62.7	0.9	1.4	77.5
- *	TS-59	30.0	-	30.0	11.0	39.0	2.0	18.0	64.8
16-32 mm									
13428	PS 1	37.3	10.4	47.7	6.0	40.3	1.5	4.5	24.5
13430	PS 3	23.8	4.8	28.6	9.5	54.8	4.8	2.4	12.3
13413	PS 4	21.1	3.5	24.6	19.3	50.9	1.8	3.5	14.5
13433	PS 6	37.3	3.9	41.2	5.9	52.9	-	-	35.2
-	TS-59	30.0	-	30.0	6.0	52.0	2.0	10.0	35.2

* Uncatalogued sample.

Catalogue No.	Field No.	Course Dolerite	Fine Dolerite	Total Dolerite	Porphyry	Granitic	Basalt	Rest	Percent Total
32-64 mm									
13428	PS 1	33.3	-	33.3	16.7	33.3	-	16.7	4.4
13430	PS 3	11.1	-	11.1	11.1	77.8	-	-	2.6
13413	PS 4	25.0	-	25.0	-	58.4	8.3	8.3	3.1
13433	PS 6	16.7	16.7	33.4	16.7	50.0	-	-	4.3
-	TS-59	-	-	-	-	-	-	-	-

ENGLACIAL AND BASAL PEBBLE SAMPLES, upper Taylor Glacier

8-16 mm									
13434	Ice 1	62.4	5.1	67.4	2.2	28.7	-	1.7	90.8
13437	Ice 4	37.6	5.0	42.6	4.6	51.5	-	1.3 q	92.7
16-32 mm									
13434	Ice 1	70.6	5.9	76.5	5.9	17.6	-	-	8.7
13437	Ice 4	57.1	9.5	66.6	9.5	23.8	-	-	6.4
32-64 mm									
13434	Ice 1	100.0	-	100.0	-	-	-	-	0.5
13437	Ice 4	33.3	33.3	66.6	-	33.3	-	-	0.9

C. OUTWASH PEBBLE SAMPLES, snout of Taylor Glacier.

8-16 mm									
13429	PS 2	23.8	5.4	29.2	5.1	52.0	9.7	4.0	86.3
13432	PS 5	25.5	5.6	31.1	7.4	54.6	2.3	4.6 m	77.4
16-32 mm									
13429	PS 2	26.2	4.8	31.0	7.1	45.2	2.4	14.3	13.1
13432	PS 5	16.4	8.2	24.6	9.8	57.4	1.6	6.6	21.9
32-64 mm									
13429	PS 2	50.0	-	50.0	-	-	-	50.0 m	0.6
13432	PS 5	-	-	-	-	100.0	-	-	0.7

D. DEPOSITED GLACIAL SEDIMENT PEBBLE SAMPLES, upper Taylor Valley.

8-16 mm									
13156/ 13158	Pl-1/Pl-3	39.7	4.4	44.1	1.7	49.8	-	4.4	92.3
13234	Sample 2	16.0	4.7	20.7	1.6	68.1	8.5	1.1	97.4
13456	Arena Val.	72.4	12.8	85.5	4.4	6.4	-	3.9 sq	88.6
13457	Kennar Val.	-	86.4	95.7	9.3	-	-	4.2 s	53.2
16-32 mm									
13156/ 13158	Pl-1/Pl-3	25.0	12.5	37.5	6.3	50.0	-	6.3	6.5
13234	Sample 2	-	-	-	-	100.0	-	-	2.1
13456	Arena Val.	87.0	8.7	95.7	-	4.3	-	-	10.0
13457	Kennar Val.	76.7	12.8	89.5	-	-	-	10.5 sq	38.7
32-64 mm									
13156/ 13158	Pl-1/Pl-3	33.3	-	33.3	-	33.3	-	33.3	1.2
13234	Sample 2	-	50.0	50.0	-	50.0	-	-	0.5
13456	Arena Val.	100.0	-	100.0	-	-	-	-	8.1
13457	Kennar Val.	94.4	5.6	100.0	-	-	-	-	8.1

Includes:
q - quartzite; s - sandstone; m - metamorphics.

TABLE 12: Pebble orientations* and dips, Taylor and Wright Valleys

SECTION U		LACROIX Gl. UNIT 15		LACROIX Gl. UNIT 2		FABRIC F1		FABRIC F2	
Dip	Orientation	Dip	Orientation	Dip	Orientation	Dip	Orientation	Dip	Orientation
39	355	15	221	33	277	06	003	08	011
05	353	29	342	17	326	10	262	05	057
0	023/180	15	216	14	245	08	261	06	275
44	002	28	194	26	038	03	017	18	270
67	016	10	023	21	072	12	163	31	300
40	040	39	266	06	324	19	140	0	170/350
11	323	09	012	42	160	14	150	14	353
15	004	07	008	08	251	19	247	05	226
04	332	19	300	31	052	18	291	06	162
16	093	14	357	19	097	23	277	01	113
02	326	03	310	23	149	03	204	03	053
86	293	14	322	04	134	06	151	02	033
02	334	09	305	15	172	15	196	07	073
03	046	35	787	03	304	12	221	16	083
33	016	0	145/325	72	306	05	241	09	259
31	346	02	094	11	230	58	056	14	191
90	-	25	311	50	096	11	206	02	191
07	099	09	204	12	081	07	230	11	238
0	166/346	13	172	19	305	06	193	04	269
49	003	53	103	11	083	14	108	13	295
16	136	19	131	14	066	01	151	12	213
11	343	06	357	22	252	02	351	21	302
02	232	09	291	01	108	20	255	26	262
01	294	14	335	12	222	03	221	22	126
71	134	01	338	06	067	10	295	0	107/287
11	026	16	332	11	351	33	313	50	331
47	294	49	243	15	106	09	166	44	282
21	330	22	277	29	081	08	251	07	260
08	351	25	228	28	008	09	183	08	220
13	014	02	336	03	090	26	156	13	024
07	259	18	206	02	056	19	161	18	313
29	262	03	353	04	095	26	073	13	333
12	345	14	223	01	061	20	236	22	291
59	136	34	301	17	347	46	267	31	062
15	093	15	227	02	098	21	291	04	333
19	013	10	203	42	061	08	062	32	276
13	340	11	286	88	201	14	277	26	146
02	051	03	282	37	176	14	054	17	301
03	284	26	265	09	097	03	162	04	283
11	351	13	196	57	252	13	276	06	290
		50	202	0	156/336	13	267	18	308
		17	350	37	237	10	336	31	002
		16	007	13	226	22	223	23	133
		47	360	26	263	16	237	09	331
		0	177/357	11	276	12	282	44	111
		18	274	02	066	09	180	04	280
		10	315	07	284	25	203	03	242
		10	214	78	163	15	262	20	303
		20	242	13	328	23	238	16	006
		17	350	10	086	04	300	52	057

* Orientations are presented as magnetic bearings (magnetic declination for upper Taylor Valley is 151° east of north).

FABRIC F3		FABRIC F4		FABRIC F5		FABRIC F6		FABRIC F7	
Dip	Orientation	Dip	Orientation	Dip	Orientation	Dip	Orientation	Dip	Orientation
05	261	03	285	18	247	15	024	31	260
13	060	22	063	36	012	49	331	29	178
25	348	04	316	01	302	13	341	40	280
25	253	25	225	26	295	07	310	35	212
23	176	01	301	03	288	71	021	18	283
11	120	22	012	22	011	27	247	03	173
14	062	19	315	09	283	08	320	08	314
07	340	16	211	10	156	62	080	31	236
09	011	06	026	15	289	39	205	21	291
27	150	20	291	24	344	02	338	19	233
06	359	18	350	46	091	05	273	29	240
02	343	06	080	17	022	0	051/231	08	331
02	291	35	003	07	336	19	073	09	213
47	121	22	325	23	302	19	346	31	297
0	143/323	02	040	16	087	05	295	14	267
04	326	01	286	07	273	21	066	20	116
05	143	15	290	49	346	11	353	14	301
06	016	27	321	38	360	12	006	26	279
48	080	35	326	90	-	07	248	15	299
05	334	09	006	22	095	12	291	16	314
09	020	17	194	02	298	32	142	31	310
24	062	32	136	04	321	11	051	37	283
25	191	06	313	12	080	26	067	21	301
34	016	0	023/203	0	100/280	13	262	20	010
09	336	17	195	36	322	23	293	38	256
28	048	02	286	11	290	02	060	31	303
18	003	08	268	13	065	02	062	29	068
03	305	04	245	12	276	12	097	09	259
16	160	16	086	28	328	22	311	54	242
20	022	14	283	22	336	26	123	41	290
09	258	26	318	29	021	05	313	11	197
16	027	20	036	31	111	16	340	27	226
18	147	05	291	24	328	05	167	78	300
07	330	26	320	02	316	11	038	04	295
61	211	04	040	11	142	13	295	20	297
04	113	58	226	36	343	01	078	13	193
08	293	01	288	10	081	16	290	12	318
18	032	09	358	01	298	16	110	21	303
14	093	0	039/219	22	063	05	295	11	003
03	290	05	073	03	266	14	196	26	210
53	246	10	250	19	335	14	045	24	276
38	323	52	310	15	260	32	206	13	332
03	306	05	320	21	297	36	303	26	293
25	276	01	293	57	300	14	037	56	246
01	247	14	217	02	040	62	062	23	314
14	050	08	355	25	280	27	337	15	055
26	278	21	330	10	323	44	332	34	183
09	222	04	025	06	110	15	273	21	252
01	306	05	253	15	051	11	057	12	191
16	333	01	232	09	337	30	133	19	297

FABRIC F8		FABRIC F9		FABRIC F10		FABRIC F11		FABRIC F12	
53	256	14	215	43	097	24	145	79	211
47	193	04	213	02	010	06	100	0	107/287
09	277	09	315	39	135	20	060	44	185
04	326	42	245	02	283	05	057	50	243
54	193	07	062	18	183	25	076	14	227
36	283	23	180	03	283	59	111	31	291
21	285	22	256	05	221	34	016	36	273
11	200	10	246	43	293	11	206	19	154
45	312	44	095	35	253	50	018	41	187
14	316	04	055	04	248	41	212	22	086
22	037	17	280	71	263	29	085	46	321
0	101/281	25	215	0	101/281	16	066	04	265
04	295	22	240	23	253	10	060	28	226
02	277	04	033	19	277	08	068	41	243
11	239	14	247	03	313	34	080	50	268

FABRIC F8		FABRIC F9		FABRIC F10		FABRIC F11		FABRIC F12	
63	120	04	240	16	088	19	183	16	057
06	311	06	211	14	245	42	080	22	237
38	116	04	287	04	075	12	053	14	226
13	070	10	167	03	248	46	126	26	245
09	283	09	217	15	298	51	081	23	250
06	351	11	270	09	291	33	121	18	146
19	341	09	251	27	232	31	137	15	281
06	106	0	073/253	19	231	36	130	33	255
06	236	06	205	17	217	46	060	43	217
03	126	15	208	03	322	58	195	26	281
34	073	17	183	16	137	29	150		
04	055	26	283	02	355	09	060		
06	088	21	175	19	136	21	098		
32	281	12	016	15	282	47	223		
38	226	13	193	09	298	01	017		
34	325	17	213	15	173	16	048		
36	285	17	279	10	291	28	145		
22	202	06	325	17	253	46	120		
14	022	25	241	11	288	30	135		
07	273	08	250	16	280	02	033		
42	318	05	221	52	291	15	331		
11	038	03	277	06	208	04	306		
23	195	01	296	14	050	08	017		
62	015	14	231	18	305	16	123		
15	020	24	192	01	292	03	062		
12	104	23	128	14	281	21	261		
02	263	34	225	11	253	90	-		
22	358	08	340	39	326	03	045		
24	115	59	097	16	215	02	048		
07	339	26	123	24	284	17	114		
09	307	15	197	11	240	21	092		
14	128	0	035/215	06	322	30	170		
40	094	10	293	17	135	26	054		
19	323	18	101	03	283	32	107		
18	068	09	091	08	191	28	138		

FABRIC F13		FABRIC F14		FABRIC F15		FABRIC F16		FABRIC F17	
18	036	27	106	04	355	08	165	22	253
16	283	08	128	29	027	04	283	08	215
19	245	02	181	07	237	13	303	26	096
30	280	19	212	25	335	10	286	59	083
11	200	40	153	08	340	31	071	14	021
22	302	67	285	14	316	21	055	41	031
13	251	04	076	10	185	10	251	23	149
09	026	10	100	22	328	17	294	06	246
07	317	09	022	09	174	07	315	01	358
08	286	12	096	23	310	02	247	37	057
19	301	63	117	38	340	27	300	40	056
03	257	06	179	31	346	01	294	51	071
67	281	03	166	50	330	12	267	18	167
19	253	08	148	13	031	0	074/254	44	243
33	185	10	075	11	353	03	303	30	248
32	278	28	109	27	342	09	244	16	023
36	293	17	150	17	308	25	101	32	240
02	322	03	082	47	342	26	034	23	011
23	250	35	163	02	293	26	138	43	034
12	348	01	083	18	251	04	286	12	218
09	087	29	089	20	335	03	310	59	063
15	280	22	060	03	337	24	126	39	351
39	040	49	312	35	296	90	-	69	057
31	072	03	177	08	322	04	283	35	329
17	255	19	170	05	258	04	187	47	317
14	286	32	118	15	293	07	220	05	120
16	101	49	228	10	345	04	163	20	103
31	209	13	213	24	307	17	027	29	293
42	280	06	235	07	033	04	307	17	138
31	181	36	161	16	003	06	075	40	097
44	015	29	067	05	038	29	073	26	026
11	284	05	144	19	319	13	038	24	133

FABRIC F13

24	307
52	320
35	015
03	292
09	273
39	308
08	282
24	098
02	235
28	230
19	288
0	099/279
04	286
18	261
18	205
05	275
43	066
06	276

FABRIC F14

12	099
16	229
36	098
66	210
15	078
23	111
16	262
03	010
18	281
46	068
10	123
05	043
04	124
12	075
11	002
04	207
11	057
17	017

FABRIC F15

08	040
26	299
0	125/304
09	028
02	267
04	332
66	350
29	328
17	283
08	271
19	035
0	163/343
20	051
04	319
11	017
13	342
18	138
49	104

FABRIC F16

03	347
32	091
82	087
13	082
12	101
36	031
09	041
12	200
10	134
02	096
0	076/256
02	123
04	090
02	156
01	321
21	326
40	360
23	013

FABRIC F17

06	013
14	170
90	-
03	231
45	081
28	214
21	121
51	119
37	041
03	176
15	244
08	311
07	223
33	115
22	056
25	156
29	072
09	111

FABRIC F18

16	103
21	070
10	078
12	061
13	328
21	108
26	183
35	079
31	317
25	095
07	275
01	040
08	322
08	350
02	220
08	230
19	355
26	071
15	167
02	213
0	085/265
02	283
11	356
16	271
09	143
06	335
05	094
38	315
40	129
24	333
26	297
21	181
24	324
30	236
21	242
25	032
11	352
42	292
18	122
08	281
09	253
17	071
39	153
22	227
53	278
13	243
16	130
36	102
11	315
13	306

FABRIC F19

08	003
04	067
12	350
03	334
28	057
17	010
29	332
12	005
26	348
02	346
02	003
04	360
04	207
08	332
09	050
08	120
04	340
09	173
04	014
0	110/290
43	097
04	330
24	180
03	026
01	344
24	256
11	002
04	323
01	028
11	246

FABRIC F20

07	349
31	217
15	200
02	335
33	220
39	238
23	228
20	225
02	326
16	202
08	252
05	256
43	307
04	212
07	315
13	342
04	326
11	304
01	337
18	360
32	298
06	016
20	329
09	020
04	307
09	356
18	351
36	137
07	252
11	342

FABRIC F21

03	310
10	115
26	279
38	235
23	228
16	219
34	307
09	080
09	324
20	233
05	226
27	283
09	337
42	027
90	-
06	206
16	263
49	002
17	239
17	216
17	220
14	312
18	191
19	212
05	212
13	203
15	307
17	209
47	197
11	216
07	350
26	134
02	191
13	231
16	218
0	161/341
10	182
04	213
31	194
14	212
16	206
01	137
11	264
08	013
22	194
03	217
31	220
25	340
10	325
34	320

FABRIC F22

31	185
08	128
04	242
06	332
01	321
11	177
16	146
09	340
47	283
01	328
16	003
34	014
21	157
09	073
08	332
08	326
26	340
41	346
43	350
03	001
12	288
14	190
09	313
07	223
08	334
18	173
03	246
03	335

FABRIC F23

12	341
03	076
09	231
37	298
10	312
31	177
15	319
07	004
16	131
02	295
19	352
0	145/325
30	284
44	276
09	020
03	322
35	314
10	181
31	331
22	313
02	306
01	309
07	237
18	198
20	271
86	027
81	085
33	289
19	296
05	338
04	250
06	232
23	112
16	255
28	171
12	307
07	318
04	290
20	333
29	016
21	309
17	336
73	147
09	332
15	341
10	317
95	329
24	340
26	307
48	304

FABRIC F24

04	184
34	093
15	206
09	283
07	026
10	211
16	256
89	077
13	091
17	296
22	260
52	101
09	217
27	283
03	150
06	307
07	141
14	100
22	077
20	148
31	246
09	132
0	126/306
08	252
65	283
07	113
04	016
63	105
58	145
09	145
12	264
03	303
04	072
12	296
12	160
57	031
22	206
74	141
0	131/211
71	025
38	122
03	173
40	131
11	284
19	160
59	295
48	091
27	327
44	104
46	092

FABRIC F25

24	042
05	060
29	128
21	135
24	141
19	067
16	106
11	072
08	098
03	175
02	333
08	121
19	206
26	040
24	115
06	112
14	121
09	323
13	128
24	119
11	166
10	345
41	248
22	025
02	113
14	019
09	211
27	107
0	171/351
16	355
24	162
04	051
09	060
27	033
18	024
25	308
32	040
06	197
03	016
10	020

FABRIC F26

13	046
06	311
17	338
17	310
24	251
15	148
03	286
03	357
23	060
11	010
06	079
02	025
01	332
16	353
02	357
15	015
07	258
08	306
14	051
04	353
10	353
08	101
01	340
04	329
06	162
02	036
06	335
08	015
02	341
05	013
04	328
02	016
19	123
37	013
04	357
21	169
09	001
02	205
06	016
17	360
12	355
43	315
22	323
16	347
09	320
15	009
13	351
14	342
03	348
33	041

FABRIC F27

37	282
02	276
21	201
08	284
04	278
13	286
09	290
38	202
30	289
14	231
05	220
03	217
12	302
20	263
11	198
22	265
16	312
07	257
13	246
0	115/295
18	200
09	182
04	081
07	211
02	084
20	096
14	299
24	305
02	013
21	242
54	276
23	266
10	320
17	268
26	283
01	099
09	279
05	246
15	251
13	243

F A B R I C F 3 1

L-axis		I-axis	
18	330	12	059
20	044	06	331
35	052	90	-
03	307	08	044
25	113	16	023
05	147	15	044
30	183	15	273
52	103	54	179
11	354	06	075
09	063	13	328
35	139	08	039
12	087	07	356
11	050	22	328
09	020	04	209
17	357	06	089
16	129	70	216
24	302	29	214
13	336	20	067
18	356	05	085
21	004	08	094
16	039	25	310
28	199	35	112
10	002	13	136
32	240	18	327
20	325	11	229
17	055	03	159
09	258	08	086
43	086	15	353
07	071	14	339
17	341	26	069
07	319	90	-
25	357	56	269
09	352	29	081
21	004	03	295
13	319	21	049
07	294	12	027
24	049	11	321
03	327	14	044
07	057	11	284
21	355	17	043
17	090	12	356
29	011	19	084
16	332	08	057
02	040	05	313
23	008	31	279
07	023	03	297
03	346	09	081
17	053	14	140
06	148	14	159
11	032	15	301

F A B R I C F 3 2

L-axis		I-axis	
15	332	12	239
06	344	04	072
06	351	10	081
11	339	0	069/249
25	334	33	244
04	019	06	069
11	322	01	232
10	340	02	070
06	036	11	306
31	332	0	062/242
16	004	22	274
23	351	01	081
04	351	04	261
07	033	22	303
04	006	14	276
16	332	49	242
21	317	21	227
22	009	25	279
31	335	13	245
14	345	04	255
36	350	42	260
22	004	31	274
11	015	02	285
04	326	0	056/236
18	350	23	260
28	197	06	107
20	328	06	238
46	024	04	114
08	326	35	236
35	089	06	359
31	340	0	070/250
31	210	80	120
33	301	15	211
29	016	04	106
15	079	19	349
07	003	09	093
39	233	33	323
15	331	02	061
0	156/336	06	246
03	315	08	045
09	281	07	011
07	340	18	070
13	019	21	289
16	218	07	308
24	006	21	276
14	344	08	074
10	319	02	049
14	210	31	300
31	008	22	278
04	328	14	058

FABRIC F33

L-axis		I-axis	
07	278	04	188
22	254	53	164
11	261	22	171
40	140	30	230
04	091	05	181
33	267	15	177
12	294	16	204
08	301	01	211
18	260	01	350
12	076	50	166
23	308	04	038
06	238	12	328
21	190	10	100
03	309	04	279
23	302	13	212
02	272	02	002
03	105	09	015
21	146	14	156
09	228	23	318
10	014	11	284
08	273	03	003
09	257	01	167
16	332	09	062
11	275	18	185
07	251	11	161
04	300	14	210
28	342	28	072
41	273	20	183
15	278	07	188
36	288	11	198
19	270	18	350
01	224	13	134
17	281	08	191
09	264	11	174
18	290	06	200
14	294	06	024
16	289	08	199
10	351	40	261
10	053	30	313
34	301	09	031
27	245	03	335
06	021	38	291
06	280	02	010
16	276	12	186
35	278	16	188
07	290	11	200
23	264	06	174
17	300	11	030
03	056	42	326
06	354	03	264

FABRIC F34

L-axis		I-axis	
02	060	11	330
05	244	14	334
02	246	09	156
17	299	24	209
08	251	09	341
07	295	18	025
12	138	17	228
02	238	31	328
06	310	19	220
11	053	21	323
19	206	04	116
24	239	07	329
16	257	18	347
11	048	21	138
14	326	19	056
06	243	16	153
06	010	29	280
01	092	06	002
12	239	0	149/329
04	232	10	322
09	225	22	135
10	071	26	341
22	259	08	349
19	248	14	338
02	251	03	341
05	228	06	138
09	261	11	351
02	095	04	005
11	246	09	336
14	270	16	180
22	015	19	285
14	256	17	346
19	249	16	339
02	243	05	333
01	232	0	142/322
07	261	11	351
16	018	12	108
18	273	13	003
0	089/269	05	179
05	238	0	148/328
04	260	09	350
45	002	12	272
16	286	20	016
02	240	06	330
11	278	07	188
04	218	08	308
04	246	01	336
24	332	21	242
07	223	10	313
03	255	06	345

FABRIC F35

02	202
07	309
0	093/183
07	290
16	334
03	325
14	130
08	141
11	321
08	313
18	066
13	319
19	326
16	304
14	323
07	075

FABRIC F36

02	207
23	033
32	202
24	245
33	240
35	235
17	050
18	225
06	055
08	235
31	240
33	237
48	255
41	235
47	200

FABRIC F35

12	277
11	321
14	333
06	336
04	049
03	216
04	349
07	328
06	338
03	330
05	291
05	274
08	315
01	116
12	341

FABRIC F36

52	235
34	260
33	263
36	235
20	245
39	200
48	220
35	220
39	235
38	215
12	280
37	230
24	220
27	008
28	275
10	195
24	195
46	195
47	215
46	255
37	210
42	230
50	215
40	205
48	220

WRIGHT VALLEY

FABRIC F28

01	137
07	73
11	215
06	162
90	-
23	126
08	007
17	184
13	204
27	290
02	040
21	319
44	279
12	174
28	165
11	053
18	344
02	178
14	332
15	212
16	103
08	115
20	092
29	021
05	044
04	155
23	119
48	084
38	043
15	145
49	077
18	013
19	225
20	095
04	203
36	254
03	023
13	228

FABRIC F29

07	032
90	-
62	121
74	106
06	033
06	315
05	296
09	328
12	043
06	354
15	176
01	100
19	323
14	320
08	075
04	330
03	099
06	200
26	273
02	090
06	237
03	093
21	178
15	309
30	016
11	272
39	305
14	081
09	056
15	113
10	164
13	160
33	236
06	168
14	035
32	272
28	263
12	055

FABRIC F30

51	066
21	007
51	336
32	101
30	108
29	103
19	305
22	040
09	173
04	302
15	137
15	007
08	028
18	143
03	227
38	131
13	166
53	123
18	061
32	175
03	266
57	195
06	281
05	337
13	228
03	227
39	122
13	160
16	272
25	251
09	182
07	306
12	057
16	349
31	266
26	081
09	173
52	061

FABRIC F28

15	177
20	216
05	194
62	121
12	196
23	020
06	089
24	329
02	158
08	006
07	112
41	277

FABRIC F29

02	180
21	287
11	313
05	117
17	257
33	102
46	039
29	229
25	306
32	058
21	285
15	342

FABRIC F30

18	017
64	046
40	147
08	359
32	128
12	045
13	110
19	087
04	161
11	231
15	355
22	295

TABLE 13: Sediment Grain-size analysis (percent sand, silt and clay).

V.U.W. Catalogue No.	Field No.	Percent SAND	Percent SILT	Percent CLAY
1. Samples of basal debris, Taylor Glacier				
*	TG 1	58.6	21.5	19.9
*	TG 2	62.9	19.1	18.0
13362	1/4	58.0	24.4	17.6
13364	1/6	53.4	30.7	16.9
13365	2/1	59.3	25.9	14.8
13366	2/2	61.9	18.8	19.3
13367	2/3	61.0	24.1	14.9
13368	2/4	60.4	26.0	13.6
13369	2/5	60.8	25.1	14.2
13370	2/6	60.7	25.0	14.3
13371	2/7	57.8	27.3	15.0
13372	2/8	62.0	24.7	13.3
13374	3/1	60.6	24.3	15.1
13375	3/2	63.7	19.6	16.7
13376	3/3	59.7	28.2	12.1
13377	3/4	59.9	28.8	11.3
13378	3/5	62.9	25.5	11.6
13379	3/6	54.9	21.7	23.4
13380	3/7	50.7	23.9	15.4
13381	3/8	71.6	19.1	9.4
13453	J1	53.4	24.0	22.7
13454	J2	60.1	22.3	17.6
13455	J3	93.1	5.9	1.0
13443	D2	49.7	23.3	27.0
13446	D5	54.6	23.4	22.0
*	TG 22/1	57.6	23.5	18.9
*	TG 22/2	54.7	21.0	24.3
13469	TG 100	45.0	39.3	15.7
13470	TG 101	91.2	5.9	2.9
13471	TG 102	90.9	5.4	3.7
13472	TG 103	54.7	19.5	25.7
13473	TG 104	87.8	6.3	5.9
13476	TG 106 B	52.3	22.5	25.2
13477	TG 107	56.6	37.5	5.9
13478	TG 108	56.2	17.7	26.1
13480	TG 110	58.0	28.8	13.2
13481	TG 111	49.5	22.4	28.1
13482	TG 112	74.0	7.2	18.8
13484	TG 114	60.5	17.5	22.0
2. Samples of englacial debris, Taylor Glacier				
13385	5/2	82.0	13.6	4.4
13488	Englacial 1	70.0	21.3	8.7
13440	Dune 2	72.8	18.5	8.7
13441	Knobhead 2	70.3	25.4	4.3
13439	Cavendish 2	73.1	17.0	9.1
13438	Ice 5	76.8	15.5	7.7
13452	E6	54.6	36.0	9.4
Victoria Upper Glacier:				
13487	VUG 117	96.0	1.0	3.0
3. Samples of supraglacial debris, Taylor Glacier				
13386	TG 1	99.8	0.2	0
13387	TG 2	99.9	0.1	0
13388	TG 3	96.9	3.1	0
13389	TG 4	97.8	2.2	0
13319	TG 1	78.6	16.0	5.4
13320	TG 2	100.0	0	0
13321	TG 3	99.7	0.3	0
13322	TG 4	99.9	0.1	0
*	TG 6	98.5	1.5	0

4. Samples of 'meltout'sediment surrounding Taylor Glacier				
13287	F10	62.1	18.2	19.7
13304	F14	59.7	19.7	21.1
13324	STS 2	64.9	16.6	18.5
13359	1/1	60.4	18.6	21.0
13360	1/2	63.0	21.4	15.6
13361	1/3	69.2	18.4	12.4
13363	1/5	71.1	22.7	6.2
13383	2/0	60.4	27.4	12.2
13373	2/9	64.1	23.0	12.9
*	TS 42	57.3	25.2	17.6
*	TS 60	59.8	22.2	18.0
*	TS 61	60.3	22.0	17.7
13479	TG 109	86.5	8.6	4.9
5. Samples of 'near' proglacial environments, Taylor Glacier				
*	TG 3	96.4	3.6	0
*	TG 4	96.2	3.8	0
*	TS 31	12.5	56.9	30.7
*	TS 35	50.2	29.7	20.1
*	TS 36	90.3	9.7	0
*	TS 37	99.0	1.0	0
*	TS 38	97.6	2.4	0
*	TS 39	93.8	6.2	0
*	TS 40	96.9	3.1	0
*	TS 41	97.7	2.3	0
6. Samples from the 'moraine' of Upper Taylor Valley				
13236	Sample 4	87,6	5.7	6.7
13323	STS 1	72.9	14.3	12.8
*	TS 21	75.5	13.5	12.0
*	TS 22	63.4	19.6	17.0
13238	T1	67.1	20.4	12.5
13266	A 1/1	57.8	21.1	21.1
13274	A 3/1	58.9	26.4	14.7
13276	A 3/3	58.9	32.0	9.1
13280	B 7/1	60.0	31.9	8.1
13281	C 1/1	65.9	27.7	6.5
13291	E 2/1	29.4	30.8	39.8
13296	E 4/1	26.3	53.0	20.7
13299	E 5/1	8.6	62.5	28.9
13300	E 6/1	67.8	22.0	10.2
13301	E 6/2	51.8	33.1	15.1
13309	H 1/1	61.2	30.6	8.2
13312	H 2/1	56.1	26.4	17.5
13314	H 2/3	51.0	24.0	25.0
13243	U1	87.5	7.5	5.0
13232	1A	56.0	19.0	25.0
13157	P2	96.1	3.9	0
13158	P3	94.5	5.5	0
13159	P4	90.6	9.4	0
13160	P5	89.3	10.6	0
13161	P6	78.6	13.5	7.9
13163	P8	99.9	0.1	0
13169	P12	99.8	0.2	0
13171	P14	55.6	25.4	19.1
13176	P19	88.6	8.9	2.5
13177	P20	50.6	23.0	26.4
13178	P21	98.9	1.1	0
1317	P22	78.8	16.0	5.2
13187	P30	99.4	0.6	0
13188	P31	81.7	13.6	4.7
7. Samples from ice-cored deposits surrounding Taylor Glacier.				
13382	4/1	66.8	20.6	12.6
13437	Ice 4	95.0	3.6	1.4
*	TS 46	60.0	24.9	15.1
*	TG 62	68.4	18.9	12.7

* Uncatalogued samples from Powell (1976).

ACKNOWLEDGEMENTS

My personal thanks to Alan Hull, Harry Keys, Alan Palmer, Tim Stern and Colin Vucetich for their field companionship and assistance; Peter Barrett, Director, Antarctic Research Centre, for continual guidance throughout the Taylor Glacier programme. I am in debt to the Department of Geology; University Grants Committee; University Council; Antarctic Division, DSIR; Lands and Survey; U.S. National Science Foundation; and the many others who assisted in the field and at Scott Base in making this programme a success.

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