

The First 50 Years of Victoria University of Wellington Antarctic Expeditions

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Recollections and reunion programme



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Welcome

Prior to my first departure for the Ice on a VUWAE expedition, I heard the pre-season talk that ARC Director, Professor Peter Barrett claims to have inherited from Bob Clark.

“There are basically only two things to remember”, he instructed. “Firstly, help out with the boring jobs at Scott Base. This will put you in a good position with base staff, which will make their job easier, and will help make the rest of your field season go smoothly. Secondly, come back safely. While Antarctica can be a hazardous place, VUWAE has a proud record of having no major casualties; so look after yourself and your colleagues. Apart from that, enjoy yourself.”

Peter Barrett's passion for making sure that history informs the way we move into the future guides both his scientific research and his directorship of the Antarctic Research Centre. His love of history has also made sure we would celebrate the first 50 years of Victoria University of Wellington Antarctic Expeditions, and in that celebration leave a legacy for the next 50 years.

Many thanks to the organising committee of Peter Barrett, Warren Dickinson, David Balham, Roger Cooper and Mike Hannah for their work in bringing this reunion together. We hope you enjoy it!

Tamsin Falconer
VUWAE 50 & 51 and Antarctic Research Centre Manager,
for the Reunion Organising Committee

ANDRILL Drill Site on the McMurdo Ice Shelf, November 2006



Recent Benefactors

Throughout the history of VUWAE, organizations and individuals have sponsored and supported the programme with equipment and money. Most recently the Antarctic Research Centre has received a \$1 million donation from former student Alan Eggers, who traveled to the Ice on VUWAE20 in 1975.

We have also benefited from a series of three donations from Singaporean philanthropist Lee Seng Tee. Dr Lee provided funds for the development of the S.T. Lee Library in the Antarctic Research Centre and established an endowed fund for an exchange programme with the University of Alaska. He also provided endowment funding for the S.T. Lee Lecture Series in Antarctic Studies, which has been held annually since 2003.

The students of the Antarctic Research Centre have also benefited from the establishment of an Endowed Development Fund for Antarctic Research. Donors to the fund have contributed more than \$150,000. Silver donors include Antarctica New Zealand, Austral Pacific Energy Ltd, Peter Barrett, Warren Dickinson and Webster Drilling & Exploration Ltd. Bronze donors include Tony Allen, Jo Anderson & Matt Paterson, John Anderson, Cliff Atkins, Dick Barwick, Daniel Bayliss, Dave Bennett, Alan Beu, Colin Bull, Roger Cooper, Walter Cousins, Ray Dibble, Robin & Feriel Falconer, Isobel Gabites, John Gamble, Graham Gibson, George Grindley, Michael Hambrey, Monica Handler & Richard Wysoczanski, Mike & June Hannah, David Hatfield, Jan & Arnold Heine, John Hickman, Chris Horne, David Kelly, Jim & Diana Kennett,

Harry Keys, Barry Kohn, Phil Kyle, Judy Lawrence, Barrie McKelvey, John Nankervis, Anthony Parker, Russell Plume, Bryan Sissons, David Skinner, Tim Stern, David Sugden, Tony Taylor, John Thurston, Colin Vucetich, Trish Walbridge, Robin Williams, Ian Wright and Dan Zwartz.

The S.T. Lee Lectures in Antarctic Studies:

Antarctica and Climate Change in the Century Ahead - Causes, Consequences and Surprises
Professor Robert Dunbar,
Stanford University, USA
Inaugural Lecture - 8 August 2003

Antarctica's Contribution to Abrupt Global Warming Events - Past and Future
Professor James Kennett,
University of California Santa Barbara, USA
12 August 2004

How sensitive is the Antarctic Ice Sheet to climate change? An earth-science perspective
David Sugden, Professor of Geography,
School of GeoSciences,
University of Edinburgh
16 June 2005

The Exploration of Antarctic Subglacial Lakes: Science, Logistics and Politics
Martin Siegert, Bristol Glaciology Centre,
School of Geographical Sciences,
University of Bristol, UK
20 July 2006

The Ice Chronicles and Rapid Climate Change
Paul Mayewski, Climate Change Institute,
University of Maine, USA
26 March 2007

Reunion Programme

SATURDAY 30 JUNE

2 - 4pm:

Meet and mingle, set up displays

Location: Cotton Building, Room 217

Registration & payment, set up memorabilia and slide shows

Afternoon tea available from 2pm

6pm - late:

Celebration dinner

Location: VUW Staff Club, Rankin Brown (Library) Building

Drinks & nibbles from 6-7pm, followed by buffet dinner

After-dinner talk by Richard Barwick, Colin Bull, Barrie McKelvey
and Peter Webb (VUWAE 1 & 2)

Response by Julia Bull and Rod Boys (VUWAE 51: 2006-07)

Lower Victoria Valley looking towards Lake Vida



SUNDAY 1 JULY

10am - 12.30pm:

Recollections & reminiscences

Location: Cotton Building, Room 217

Presentation of recent and current work, Presentations by past VUWAE participants

Coffee/tea available from 9am

10am	Welcome and overview Peter Barrett (Antarctic Research Centre Director) and Tim Naish (ARC Deputy Director)
10.30am	Tony Allen & Graham Gibson (VUWAE 3: 1959-60)
10.50am	MORNING TEA
11.20am	Vince Neall (VUWAE 11: 1966-67)
11.40am	Chris Christoffel (VUWAE 11: 1966-67)
12.00pm	tba

12.30 - 1.30pm:

LUNCH & displays of current research

Location: Antarctic Research Centre (Cotton Building, Rooms 505 & 508)

1.30 - 4pm:

Recollections & reminiscences

Location: Cotton Building, Room 217

Presentations by past VUWAE participants

1:30pm	Barry Kohn (VUWAE 13: 1968-69)
1.50pm	Rosie Askin (VUWAE 15: 1970-71)
2.10pm	Tim Stern (VUWAE 21: 1976-77)
2.30pm	AFTERNOON TEA
3pm	Ian Wright (VUWAE 24: 1979-80)
3.20pm	Cliff Atkins (VUWAE 42: 1997-98)
3.40pm	VUWAE 1 & 2
4pm	Farewell & close

Reunion Participants

Allen, Tony

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Physics expeditions in
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*1974 Erebus expedition: from top right: Tazieff 5th, Kyle 7th,
Dibble 2nd; Bottom near placard: left, Shaun Norman
(NZ leader), above Le Guern, right Werner Giggenschach*



The Birth of VUWAE

By Trevor Hatherton,

reprint from *Tuatara*, Journal of the Biological Society,
Victoria University of Wellington, Vol.15 (1967), pp100-102.

On December 30, 1957 I drove a tractor across the sea ice from Scott Base to meet H.M.N.Z.S. 'Endeavour', preparing to tie up about 9 miles from the base. I was naturally keen to begin unloading the ship and to meet the members of the incoming party. After being introduced to the new party I noticed a couple of rangy youths to whom I had not been introduced, and who were obviously not members of either the wintering party or the ship's crew. 'Who are these two young - - -?' I said. 'Them-oh they're university students', says Lyn Martin the incoming leader, and then seeing the look in my eyes hastily followed up with-'now-don't blame me'.

There they were, the first two of them, uninvited, unheralded and unwanted. With a limited base staff, unlimited American visitors, Hillary 'hell-bent for the pole' and four other parties in the field, unloading and changeover problems and the possibility of Bunny Fuchs and party having to winter over at Scott Base, neither I nor anyone else was enthusiastic about supernumeraries without any place in the long prepared plans.

Somehow, and I have no clear recollection of how they achieved it, these two students 'infiltrated' a couple of non-geological parties intending to study the lakes of the so-called dry valleys. As a result of their work during the next few weeks the dry valleys became Dry Valleys, and during the next few years probably the most intensively studied parts of the Antarctic Continent.

Webb and McKelvey the original students are 10 years older now, and approaching the peak years of their professional life, no longer students, though they can't convince me of that. The success of their work and the subsequent VUWAE expeditions have been based on two things-their personal attributes and the persistent character of R. H. Clark, Professor of Geology. If an unfavourable impression had been left by Webb and McKelvey during that hectic summer of 1957-8 subsequent Victoria University expeditions would have been hard to launch. As it was, their demeanour was exemplary. No scientific studies are of any use until published, and as prompt publication of research is insisted upon by Professor Clark the first VUWAE Dry Valleys papers were among the earliest substantial contributions to the records of New Zealand's research effort in Antarctica. The first favourable impression, dependent upon the attitude of Webb and McKelvey, backed by prompt publication, the fruit of departmental (i.e. professorial) policy, was a combination not to be denied. VUWAE became established.

Since 1957, ten other expeditions have gone and come. Some didn't earn unqualified approval from me for I thought their aims fragmented, but the later expeditions have had to investigate the ever-increasing number of problems that has arisen from the early surveys. Simple logic tells us that if the number of man-months of work has a limit,

“Exploration is the Physical Expression of the Intellectual Passion”

—Apsley Cherry-Garrard

as it must in the New Zealand Antarctic Programme, the number of fields of enquiry can only be increased at the cost of a loss in intensity in each field. At other times it seemed that too many staff were spending too short a time down there, but this is probably a product of this fragmentation. However, I feel, if possible, that University Expeditions should consist of senior students left to their own devices once the problem has been outlined by staff in consultation with the students. The ability to sustain a scientifically productive season in the Ross Dependency unaided is a tremendous test of self-reliance as well as of research capacity. Admittedly some will drown through being thrown into the deep-end, but the list of those who have emerged with great credit from VUWAE expeditions is impressive.

And what of the future? Every young man's first expedition is an adventure so there should be no slackening in the attraction of Antarctica. Scientifically, the problems are even more interesting now that enough data has been gathered, enough ideas formulated, to allow the synthesis which is the art of science, and the testing of the model which is the science of science. We are no longer 'stamp collecting' in Antarctica, and there must be an exciting future there.

But for the present, to the pioneers Webb and McKelvey, to the succeeding teams, and to the general, Professor Clark, I offer my congratulations on a remarkably long-sustained endeavour in exploration and research.

*Nansen, Tamworth
and manhaul sledges
at Scott Base ca.1995*



Members of VUWAE: 1957-2007

VUWAE 1 - 1957/58

McKelvey, B. C.
Webb, P. N.

VUWAE 2 - 1958/59

Bull, C. B. B.
Barwick, R.
McKelvey, B. C.
Webb, P. N.
Bull, C. B. B.
*Clark, R. H.

VUWAE 3 - 1959/60

Balham, R. W.
*Wheeler, R. H.
Allen, A. D.
Gibson, G.
Willis, I. A. G.

VUWAE 4 - 1960/61

Wheeler, R. H.
Blank, H. R.
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Cooper, R.
Willis, I. A. G.

VUWAE 5 - 1961/62

Wellman, H. W.
Wilson, A. T.
*Clark, R. H.
*Wheeler, R. H.

VUWAE 6 - 1962/63

Willis, I. A. G.
Rich, C. C.
Haskell, T.
Kennett, J.
Smith, G. J.
Prebble, W.



VUWAE8, Photo: Bruce Popplewell

VUWAE 7 - 1962/63

Shirtcliffe, T.
Benseman, R. F.
Popplewell, K. B.

VUWAE 8 - 1963/64

Prebble, W.
Wilson, A. T.
*Wellman, H. W.
Henderson, R. A.
Hoare, R.
House, D. A.
Popplewell, K. B.

VUWAE 9 - 1964/65

Prebble, W.
Vella, P. P.
Cole, J.
Ewart, A.
Frame, A.
Hoare, R.
Bradley, J.
Palmer, D.
Schafer, F.
Zimmerman, D.
Baker, A.
Bell, R.

VUWAE 10 - 1965/66

Ghent, E.
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Hancox, G.
Smith, I.

VUWAE 11 - 1966/67

*Wellman, H. W.
Christoffel, D. A.
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Duncan, A.
Neall, V.
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VUWAE 12 - 1967/68

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Wilson, A. T.
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Cousins, W. J.

VUWAE 13 - 1968/69

Webb, P. N.
McKelvey, B. C.
Kohn, B. P.

Gorton, M.
Murrell, B.
Cousins, W. J.
Blong, R.

VUWAE 14 - 1969/70

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Kyle, P. R.
Topping, W. W.

VUWAE 15 - 1970/71

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VUWAE 16 - 1971/72

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Crump, J.
Allis, R.
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VUWAE 18 - 1973/74

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Luckman, P.
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VUWAE 19 - 1974/75

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VUWAE 20 - 1975/76

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Eggers, A.
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Sillars, K. J.
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Robinson, P. H.

VUWAE 21 - 1976/77

Burgess, C. J.

Palmer, A.
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VUWAE 22 - 1977/78

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VUWAE 23 - 1978/79

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Neale, G.
Mortimer, N.

VUWAE 26 - 1981/82

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Main, L.

VUWAE 27 - 1982/83

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Barrett, P. J.
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Curry, P.
Watson, J.
Fitzgerald, P.
Webster, M.

VUWAE 29 - 1984/85

Barrett, P.
Pyne, A.
Ashby, J.
Macpherson, A.
Pillans, B.
Ward, B.
Wright, I.
Neale, G.
Haanen, A.
Komura, K.
Olsen, J.
Kellett, R.
Korsch, R.
George, A.
Gamble, J.
Vincent, S.
Belgrave, V.
Fitzgerald, P.
Patterson,

VUWAE 30 - 1985/86

K Palmer
P White
Pyne, A.
Kelly, D.
Macpherson, A.
Dawkings, R.
Fitzgerald, P.
*Woolfe, K.

VUWAE 31 - 1986/87

Falkner, K.
Barrett, P. J.
Pyne, A.
Hall, K.
Chambray, M.
Robinson, P.
Reick, H.
Wada, H.
Ashby, J.
Hardy, E.
Mills, C.
Morris, B.
Belgrave, V.
White, P.
Davy, B.
Alder, G.
Pyne, A.
Alder, G.
Dibble, R.
Barrett, S.

VUWAE 32 - 1987/88

Dibble, R.
Ball, T.
Ellis, S.
Lassky, S.
Pyne, A.
Ward, B.
Armstrong, B.
Shane, P.
Blake, G.
Zurita, F.
Faloon, G.
Anderson, B.

VUWAE 33 - 1988/89

*Woolfe, K.
Henare, J.
Gillespie, G.
Dibble, R.
Mackay, K.



Members of VUWAE 29 preparing for a GPR traverse on the Campbell Glacier

McConchie, J.
Winchester, D.
Dawson, P.
Wilson, G.
Pyne, A.
Perrett, T.
Sole, P.

VUWAE 34 - 1989/90

*Woolfe, K.
Arnot, M.
Zwartz, D.
Dibble, R.
O'Brien, B.
Shimizu, H.
Pyne, A.
Goodwin, I.
Moller, P.
McConchie, J.
Winchester, D.
Hawke, R.
Campbell, H.
Trodahl, J.
Riches, S.
Gamble, J.
Teeling, T.
Smellie, J.

Atkinson, B.
Griffiths, C.

VUWAE 35 - 1990/91

Woolfe, J.
Arnot, M.
Barrett, P.
Francis, J.
Smith, N.
Pyne, A.
Dibble, R.
Beaglehole, D.
Carter, G.
Ryan, K.
Exley, R.
Gamble, J.

VUWAE 36 - 1991/92

Pyne, A.
Broughton, E.
Powell, R.
Heaphy, S.
Statham, D.
Falloon, G.
Gamble, J.
Brooker, J.
Wysoczanski, R.

VUWAE 37 - 1992/93

Pyne, A.
Anderson B.
Carter, J.
Gee, E.
Rennie, A.
Grube, P.
Trodahl, J.
Buckley, R.
Beaglehole, D.
Henrys, S.
Pyne, A.
Gamble, J.

VUWAE 38 - 1993/94

Wizevich, M.
Thornley, S.
*Woolfe, K.
Pyne, A.
Rennie, A.
Singh, L.
Leslie, R.
Hackney, R.

VUWAE 39 - 1994/95

Christoffel, D.
Wooler, A.
Bleakley, N.
Pyne, A.
Anderson B.
Hackney, R.
Quinn, J.
Haver, A.

VUWAE 40 - 1995/96

Pyne, A.

VUWAE 41 - 1996/97

Pyne, A.
Shulmeister, J.
Butler, E.
Quinn, J.

Webb, P.
Dickinson, W.
Goff, J.
Jennings, I.
Cooper, P.
Devries, J.
Webster, B.

VUWAE 42 - 1997/98

Barrett, P.
Pyne, A.
Anderson, Jo.
Atkins, C.
Hannah, M.
Butler, E.
Lambeck, A.
Quinn, Julie.
Bowman, Vanessa.
Schluchter, C.
Ternio, S.

VUWAE 43 - 1998/99

Barrett, P.
Butler, E.
Anderson, J.
Atkins, C.
Jackson, N.
Pyne, A.
Patterson, M.
McKay, R.
Hannah, M.
Hiemstra, J.
Van der Meer, J.

VUWAE 44 - 1999/2000

Anderson, Jo
Atkins, Cliff
Barrett, Peter
Hannah, Mike
Jackson, Nick
Pyne, Alex
Bertler, Nancy

Dickinson, Warren
Holme, Phil
Hiemstra, John
Mitchell, Jeremy
Van der Meer, Jaap
Hicock, Steve
Lloyd Davies, Mark
Prebble, Joe

VUWAE 45- 2000/2001

Pyne, Alex
Dickinson, Warren
Kingan, Tony
Cooper, Pat
Kingan, Glen
Pollard, Wayne
Hickock, Steve
Hose, Chris
Holme, Phil
Bornholdt, Carl
Bertler, Nancy
Ayling, Bridget
Hendrikx, Jordy

VUWAE 46 - 2001/2002

Pyne, Alex
Balfour, Natalie
Horgan, Huw
Henderson, Ricky
Bertler, Nancy
Patterson, Nora
Hill, Matt
Dickinson, Warren
Tammick, Sarah
Hopkins, Karyn

VUWAE 47 - 2002/2003

Pyne, Alex
Atkins, Cliff
Dickinson, Warren
Colebatch, Camilla
Wilson, Nicola



Members of VUWAE 29 at Campbell Glacier

Barrett, Peter
Dunbar, Gavin
Robinson, Natalie
Mason, Dougal
Leitch, John
Niessen, Frank
Nixdorf, Uwe
Dunker, Eric
Pringle, Daniel
Trodahl, Joe
Carter, Lionel
Riesselmann, Christina
Giorgetti, Giovanna

VUWAE 48 - 2003/04

Bertler, Nancy
Christie, Louise
Pyne, Alex
Watson, Matt
Wood, Matt

VUWAE 49 - 2004/05

Bayliss, Dan
Bertler, Nancy
Cavanagh, Mike
Kipfstuhl, Sepp
Kingan, Tony
Pyne, Alex
Dickinson, Warren
Hyland, Leigh
Mackintosh, Andrew
Zwartz, Dan

VUWAE 50 - 2005/06

Carter, Lionel
Dunbar, Gavin
Falconer, Tamsin
Hansaraj, Dhires
McKay, Rob
Naish, Tim
Pyne, Alex
Bertler, Nancy
Dickinson, Warren
Schiller, Martin

Sletten, Ron
Williams, Gretchen

VUWAE 51 - 2006/07

Atkins, Cliff
Barrett, Peter
Carroll, Dene
Carter, Lionel
Dunbar, Gavin
Falconer, Tamsin
Hannah, Mike
Hansaraj, Dhires
McKay, Rob
Naish, Tim
Pyne, Alex
Bertler, Nancy
Boys, Rod
Bull, Julia
Kingan, Glen
Kipfstuhl, Sepp
Robinson, Davie
Watson, Matt

*Deceased

Recollections of the first 50 Years

A 50 year trip with Barrie and Peter

When Barrie McKelvey and Peter Webb stepped on board the HMNZS Endeavour they had no idea of the legacy that was to follow them. In 50 years since, much has changed but much has remained. For most of us, our first trip to Antarctica was a 'life changing' experience, but each of us was infected in unique ways. Antarctica has changed little in 50 years and still doggedly guards her scientific secrets like never before. To some it may seem that the Dry Valleys have been 'done to death', yet no where else is it so obvious that the more we learn, the less we know.

In Antarctica we no longer map and survey to learn what is there, but we now collect and analyse micro samples to answer global questions. We are overjoyed to reflect back along with Barrie and Peter, but we are humbled to realize that some who reflect in the following pages will be doing so again in 50 years.



*Peter Webb (left) and Barrie McKelvey
(Photo: M.D.King)*

Warren Dickinson and Tamsin Falconer

VUWAE 2 (1958-59) Colin Bull

VUWAE 1 was a marvelous, serendipitous jaunt by Peter (Webb) and Barrie (McKelvey). VUWAE 2 was my fourth polar expedition, but my first complete university expedition to the Antarctic. We can't pretend that we were an independent expedition because of the necessary logistical help, but we did decide for ourselves what we wished to do.

One day things were getting hectic. The boys (Barrie and Peter) were near the lower depot at the Wright Lower Glacier but felt that they must retrieve their rock specimens from the

upper depot (on south shoulder of Wright Valley, at 5300 feet altitude, near Wright Upper Glacier). They walked the 21 miles to Main Base in 6 hours and when Dick congratulated them on this achievement, Barrie explained that it had only been possible by their choice of rest spots. They only stopped where there was a shallow puddle nearby and Barrie noted that when they sat in the puddle there was always a short, sharp sizzle. At Main Base they ate and slept for 6 hours and then pressed on to the upper depot, another very long walk as well as a 5300 feet climb, and then back down to

my little tent still standing at the west end of Lake Vanda. There they ate the meal I had left for them, stewed steak and vegetables, and then tinned pineapple. They rested for an hour or two, and then sledged back across the lake to Main Base, with their specimens. Barrie asked us to excuse the smoke coming from his armpits. While they waited for the meal I was cooking for them, they had a little snack, which started with 10 Weetabix each and 3/4 of a 2-pound tin of golden syrup between them. Well, one Weetabix makes a rather skimpy breakfast, but two of them are enough for most folk. Dick and I watched open-mouthed, with admiration and astonishment, as they demolished the lot. And then they had dinner! But it really was a remarkable walk! And, come to that, they also showed a totally commensurate ability to eat.

Well, John Glenn, first US earth circler, went back with a very much later space mission. In the same way I am now collecting volunteers for a return visit to Wright Valley. Successful applicants must be prepared to carry me back up Peak 16, as it was before we named it.

VUWAE 3 (1959-60) Graham Gibson

We had a great leader in Ron Balham and all worked as a great team. None of our work would have been possible if it had not been for the fantastic support that we got from the Americans (and also the RNZAF). The Snowcat accident on 20th November was very sad and sobering for us all, and also the Beaver crash.

We would hope that the begging letters to get supplies have long since gone, and that modern technology has eliminated some of the problems with dodgy Skeds and the laboured

voice and CW we struggled to send. It was a wonderful experience. We never dreamed it would continue for another 47 years...and more!

VUWAE 3 (1959/60) Tony Allen

The purpose of our 67 day expedition into the Victoria Valley area was to extend the work of VUWAE 1 and 2 in geological mapping, surveying, palaeomagnetic sampling and biology. The expedition team comprised staff and students from Victoria University: Ron Balham (leader), Ralph Wheeler, Graham Gibson, Ian Willis, and Tony Allen. We formed an enquiring, happy team.

The work achieved by the expedition was mainly by field traverses from a base camp at Lake Vashka (Barwick Valley) and from three satellite food dumps near Lake Vida, Apocalypse Peak, and Miller Glacier area, established by a U.S. Navy helicopter. The traverses radiated from these areas and covered an area extending from Purgatory Peak in the east to Mt Bastian in the west and for up to 20km to the north and south, an area of about 700 sq. km.

The valleys are 3 to 6km wide and the valley floors are veneered with glacial moraine, glacial outwash deposits, pediments and local eolian dunes. They are relatively flat and vary from smooth to very rough. The valley walls were up to 1000m high, very steep and mainly covered with coarse scree. Various small glaciers and snowfields occurred in the areas flanking the valleys.

The traverses required exhausting physical effort carrying heavy packs. The rough and steep terrain limited the amount of work achieved. Our work was further limited by the



Ron Balham, Ralph Wheeler, Tony Allen, Graham Gibson and Ian Willis (left to right) in the Victoria Valley.

lack of suitable maps and aerial photographs at appropriate scales for regional or detailed mapping.

The work achieved was mainly of a reconnaissance nature. Many features such as stromatolites and other features observed at Lake Vida, glacial geology and geomorphology, and the multiple intrusion and differentiation within the lower dolerite sill were noted and sampled but not studied. In hindsight, it would have been very rewarding to have studied these features more closely.

Following our expedition I did not continue my interest in Antarctic geology. I seriously broke my leg in a sporting accident and it was imperative to complete my MSc (the geology of the Awatere Valley, New Zealand) to obtain work. In the latter case I made the very happy choice of joining the Geological Survey of Western Australia. As a result I retained only limited contact with the team members, and

passing interest in Antarctic geology.

My participation in VUWAE 3 has formed less than 2% of my geological career. It has not greatly influenced what I have done but perhaps the seeds of my career in hydrogeology were sown when I studied frost polygons and saline soils at Lake Vashka. During field mapping in Western Australia I encountered an older but similar style of geology in the Kimberley region and my Antarctic experience undoubtedly influenced some of my work.

Despite this, the expedition to and from Antarctica and into the Dry Valleys has been one of the unforgettable experiences of my life. I feel privileged to have been amongst the first to have set foot in the beautiful, pristine, forbidding environment which we found. It has had a profound effect on my views about life and nature. I regret not maintaining contact with team members and not keeping up to date with the exciting

developments in Antarctic geology. With a few reservations, I believe we made a small but useful contribution to Antarctic geology, as well as providing a link in the chain of VUWAE expeditions over the last 50 years.

VUWAE 3 (1959-60) Ian Willis

In traveling to McMurdo on the 'Globemaster', which had a huge Caterpillar bulldozer in the hold, we realized we were very much secondary cargo. Before take-off one of the crew members came to demonstrate the use of the "survival suit". His opening phrase was "should anything go wrong before the point of no return, we will return to ChiChi, after that you will be required to put on this survival suit". Where-upon he proceeded to show us how to pull on the survival suit, which had a huge tear down one of the legs. At the end of the demonstration he stated, "of course, yours will not have a tear in it, but does it matter? Survival time without a suit is about a minute, with it maybe up to five minutes. If you think we could get a rescue aircraft on site in that time, you are sadly mistaken. Best of luck".

On our first trip in the chopper over the Dry Valleys, my colleagues and I were all amazed at the sheer grandeur of the area. At one point, whilst flying over one of the remnant glaciers, I remarked to the cabin crew member, "what a spectacular sight". He opened one bleary eye and said, "seen one, seen 'em all!". Where-upon said eye closed again.

Once we left base camp, I was partnered with Ralph Wheeler, the

surveyor on the team, whilst my task was to collect orientated paleo-mag samples for Colin Bull. The first night we pitched the two-man pup tent, I offered to make Ralph a drink flavoured with 'lemon crystals' which he readily accepted. The drink was made to the strength I like and a mug handed to Ralph. A few seconds later there was a huge splutter and explosion with Ralph accusing me of giving him battery acid. From there on out, I made his as weak as p.....

Our main base camp was established at the western end of Victoria Valley with a subsidiary food dump put in at the eastern end. After a brief acclimatization period it was decided to head east and then work back to base camp. Back-packing was the only means of transport and everything we might need was crammed into our packs (including rather useless items such as mukluks) and off we set, tramping into a "fresh" head wind. After a couple of hours, we could clearly see our objective site and decided to stop for "lunch". Mistake number 1, not appreciating the clarity of the

Ian Willis sun bathing in Miers Valley.



atmosphere it was many, many more hours before we reached our goal, tired and extremely hungry. Before eating, mistake number 2 occurred when one of our party (who will remain anonymous) decided to have a pee. Moments later he was rolling on the ground in agony - hot urine through a chilled member - OUCH! (The female field workers will no doubt be having a giggle!). After that we used to stuff one of our leather sledging mits inside our fly when there was a head wind.

Another trait of Ralph's was that he could fall asleep anywhere at any time. To collect an orientated sample took about 20 minutes, and once I had selected a convenient spot, Ralph would stretch out on the terrain, no matter how rocky and fall asleep. This in itself did not bother me, but his snoring was something to be believed and many a time I was tempted to throw a rock at him.

It is possible that I can claim one of the dubious "honours" of a VUWAE member - that of being the only one to fall down a crevasse! About a week after a particularly physically tiring tramp with heavy backpacks from our main base camp at the head of Victoria Valley to a subsidiary camp at the seaward end of the valley, Ralph Wheeler and I set off to triangulate a peak on our way back to base camp. Given our experience of the outward march we were travelling as light as we thought possible but decided to shed a few unnecessary articles such as the field radio, climbing rope, etc as we headed up a valley to a remnant glacier which would give good access to the peak chosen as a survey point. The diehards had advised that these remnant glaciers did not have crevasses.

After a comfortable night camped on the glacier we set off in a straight line for the peak with me in front "breaking step" in the softish snow cover. About five minutes away from our campsite and within a nanosecond of putting my weight on my forward foot, my brain registered that the snow sagged a bit between two semi-parallel lines - you have probably guessed what I realised that fraction too late! A second or so later I was about 10 to 12 ft below the surface on a snow bridge with no direct sunlight, a very limited view and drop offs of several 10s of feet on each side (you must remember this was in the pre-metric era!!). Given my initial shock and expletives (which I won't repeat), my next thought was "s... our rope is several hours away". About that moment Ralph's head popped over the topside followed by an expletive and "thank goodness you are OK!". Small comfort! After a few minutes debate, during which the intense cold was starting to strike, we realized the crevasse was just the right width to wedge our ice-axes across to use as climbing rungs to get out, with Ralph pulling like fury on my arm for that last few feet. Fate does not recall how we got the lower ice-axe out but the handles of both were split. Needless to say we got off that glacier as quickly as possible and kept to visible hard rock for the rest of the trip. Ralph and I joked about the episode later - his account being something like, "I was about 100 ft behind you, looking down as I trudged along in your footsteps on a nice sunny day without a care in the world. Suddenly there was a grunt and I looked up but you were nowhere to be seen - but, oh s..., there was a hole in the snow! Damn (translation of expletive), I was glad to see you when I peered over the edge!!".

VUWAE 4 (1960-61) Roger Cooper

On Christmas Day, 1960, Colin Bull, Ian Willis and I were camped in the Miers Valley, Koettlitz Glacier area. The other two members of our expedition (VUWAE 5), Ralph Wheeler and Dick Blank, had been out geologising for the day. They returned to camp excited as puppies. They had just seen a "wall of water" coming down the otherwise dry Miers Valley stream bed. Apparently, an ice dam had melted and melt water from the Miers Glacier was flowing. They had spent half an hour constructing a dam across it, from rocks and sand. Being dedicated scientists, we all decided to take the following day, Boxing Day, off and worked on the dam. For research purposes, of course. Then someone decided that we should go for a swim in the pool of melt water. Once one person had stripped off his clothes and jumped in, the rest of us had to prove we were

just as bold. The Christmas drambuie helped. So we all ended up splashing about in the near freezing water. Ian Willis discovered that the dark coloured moraine of the valley side had absorbed enough heat from the sun to enable sun bathing and he lay there afterwards for about 15 minutes, long enough for us all to get photographic evidence. Was this the first "swim" in a flowing river in the Ross Dependency? I suspect so. Not many people are that silly.

In the early VUWAE expeditions, most supplies had to be cadged from importers, manufacturers and retailers, as funds for this purpose were strictly limited. For VUWAE 5, a local tobacco firm supplied us with copious quantities of tobacco. We found that it was rolling tobacco so we took plenty of tobacco papers. Needless to say, this was in the pre-cancer scare era. Roll-your-own cigarettes

Dick Blank and Ralph Wheeler in the dammed up Miers River.



turned out to be not too successful in the dry and cold Antarctic climate. You had to manipulate the tobacco, roll it in the paper, then lick the gum strip and stick it down, with freezing glove-less hands. But more often than not, the tobacco had dried out and just crumbled to dust inside the paper roll. The result was that after you put the cigarette in your mouth, but before you could get the lighter to it, all the tobacco slid out of the paper tube and on to the ground. Ever resourceful, we found the answer was to wrap a wad of tobacco in wet toilet paper and keep it in a plastic bag.

Another item generously supplied free was pipe cleaners. One of the “old hands” had advised us that these were handy for tying up plastic sample bags and we had requested 60 dozen. When we unpacked our supplies down south, we found we had been given 60 dozen *packets* of pipe cleaners. The result was we had pipe cleaners coming out of our ears. After every camp site clean-up, there was always the inevitable pipe cleaner still lying around. So we named a glacier in the

southern Koettlitz area, draining east from Mount Huggins in the Royal Society Range, the Pipecleaner Glacier. I can't recall what reason we gave the Geographic Board for the name but it would not have been the real reason.

In December 1960, about half way through the VUWAE 5 expedition to map the Koettlitz Glacier area, we were mapping in the plateau country between Miers Valley and the Walcott Glacier. We slept in standard, light-weight, alpine “pup” tents as all our gear, food etc. was back-packed and had to be light. Radio scheds were held regularly twice a week and although we were only 100 km from Scott Base, we were in a “shadow” area. Using heavy, and not very efficient, commando radio sets (no doubt cadged from the Army), our reception was poor and we often could not make clear contact. On this occasion we received the message that we were to make a collection of rocks representative of the area, to be used in the planned memorial to Admiral Byrd, which was to be constructed in Wellington. A helicopter was arriving the next

day to pick them up. This much was clear but then reception deteriorated. The last bit of the message was that the rocks were to be “about the size of an ordinary house brick”. However, reception failed altogether and we did not hear the word, “brick”. We had no idea of what was wanted and spent some time in amused debate about how to get a collection of house-sized rocks into a helicopter. In the end, we collected up hand specimen-sized examples of Vanda porphyry and other attractive rocks, which were eventually used for decoration of the memorial, built in the shape of a polar tent, on top of Mount Vic. The memorial was later refurbished with larger, more respectable, “brick-sized” Antarctic rocks, and can be seen today.

VUWAE 6 (1962-63) Warwick Prebble

In 1962 we explored the hitherto largely unknown and untrodden Brown Hills and Darwin Mountains around and through which the Darwin Glacier flows at 79° south. These ice-free areas and well exposed mountain sides were very inviting amongst the maze of huge crevassed glaciers such as the Byrd to the south and the Mulock to the north. At first sight I remember the Darwin Glacier looked fairly benign. We had hoped to haul our sledge across it to the Darwin Mountains from our base camp at a cosy place, which we called Erewhon by some frozen ponds in the Brown Hills. From the top of Bastion Hill about 1000m above Erewhon I saw some enormous crevasses partly concealed beneath thin snow bridges and we decided not to attempt a very risky crossing on foot. Later were lifted across by Dakota. I recall watching the shadow of our plane take a perceptible time to pass over each of these huge slots. The sight of the



VUWAE8, Photo: Bruce Popplewell

nasty looking black holes in the fragile snow bridges is still very clear.

Exploring and mapping these two areas was such fun: Amazing views at 2400m from Midnight plateau of the Darwin and Hatherton neves on totally clear minus 40°C evenings, sparkling ice crystals tumbling out of a clear night sky on Christmas Eve 1962, elegant pyramid mountains of fractured chocolate brown dolerite, honey coloured and bright pink layers of Beacon sandstone all warm and inviting in the midnight sun, on all sides deep blue ice falls and marble-like expanses of gleaming white glaciers. We were a JATO expedition - some 32 or so bottles in all to lift our loaded plane on its several flights. The raw excitement of twin bank JATO blasts and thundering motors hardly fades in the memory.

Special moments regularly come to mind: the first night in our little Meade tents on the Touchdown Glacier when the fog which nearly prevented our landing and certainly hastened the Dak's swift departure rolled away after midnight to reveal a silent, sunlit, breathtaking vista of icy mountains, spangling snow fields and rocky nunataks; a motionless landscape and see-for-ever views; threading our way up through massive pink granites, tourmaline

Travel on the Skeleton Neve with VUWAE 15





VUWAE8, Photo: Bruce Popplewell

pegmatites, pallisades of columnar dolerite and layers of conglomerate and sandstone; the game of cricket on the glacier while waiting to fly back to Scott Base - extended with the Dak crew who signed our bat; sunbathing in dry still air at minus 10. Well ahead of schedule, we were able to spend January in the Taylor Valley.

The Taylor is a magic place. Memories of the 24 hour traverse from the coast to the Taylor Glacier snout with Tom Haskell, Colin Bull and his gravity meter are special; The long cool shadows of the Kukri Hills. Midnight on Nussbaum Reigel. Brilliantly sunlit mountains and icefalls on the other side of the valley, Lake Bonney to the west and McMurdo sound and Erebus to the East. Ice covered lakes and ponds in the floor of the valley, wadis, dunes and lag pavements. Total silence and stillness

at night. Silence shattered by ice falls avalanching off hanging glaciers. Some very windy days with snow plumes streaming off the tops.

The Dry Valleys, Black Island, Brown Peninsula and Koettlitz were the territory for VUWAEs 8 and 9. Each team was a diverse and committed group of individuals from many disciplines and with different tasks, all driving towards a common plan. That in itself was a fairly unique experience for us at the time. It was matched by novel scientific objectives - solar heated lakes, their chemistry, physics and biology; ground hugging glaciers, Antarctic surficial geology, Polar Plateau snow balance and carbonaceous chondrites, implications for the history of the ice cap and glacial movements and more....

We were led in the science by ourselves and our mentors - there were the not-to-be forgotten discussions between Harold Wellman and Alec Wilson. Their direction and example was inspiring. Memories include the visits by Brian Talboys, Minister of Science and Adrian Hayter, Leader of Scott Base. Their visit was followed by several days of blizzard and strong winds which lashed us on Brown Peninsula. Without snow piling up other ways of keeping your tents fixed down on rock and soil must be devised. Some of the new comers to Antarctica did not sleep for a few days as the wind and drift shrieked past and the tent poles hummed to the tune of the blast. Many of the team did not venture outside for some time. We even managed to have an old polar tent, in spite of being pitched firmly, break a bamboo pole.

Another visit was from my brother Michael when we were moved to the Koettlitz. We were lucky as siblings to share the experience of being together in Antarctica. I shall always remember the heat wave which ensued in the Koettlitz and the Dry Valleys. Water flowing in stream channels, lake levels rising, temperatures of plus 3 and 4, sunny calm days - it was difficult to find enough time to sleep. Other memories are of the long traverses of the ice free areas, lots of drillholes in the lakes, and an occasion when two of us broke through the thin ice on the moat of Lake Bonney and floundered to shore. It was good to get into our spare clothing which we always had in our packs and watch the wet clothes gel and set solid. Hours later on our way back to camp the wet set of gear had dried out by ablation.

I remember the ease with which we moved around the Dry Valleys, the stunning landscape of beautifully sculptured rock outcrops, the sand dunes and ventifact fields, the saline

mires and salt ponds, the rich colours of the rocks and mountains, the contrast of the blue ice falls and white steep-walled glacier tongues which flowed over the valley side and floors and the high and remote camp sites under the ever changing sky. It is tempting to compare the feast of colour, topography and desert landforms to that of the Grand Canyon of the Colorado at twilight - but with the added spectacle of eternal low lighting, dramatic clarity, views limited by distance only and the total stillness and silence when the wind stops.

Other recollections are of the journeys to and from the ice in Hercules, the super constellation "Phoenix" and that veteran of the ice - the big old piston engine Globemaster. I shall not forget the Globemaster having an engine failure one hour out of Christchurch. Oil streamed from the engine cowl and anxious flight crew peered at it with search lights. We treated it all as fun especially the hearty meal of steak etc at the US base when we returned to fix it up before taking off again. Then 11 hours later the magnificent sight of the mountains of Northern Victoria Land. One also does not forget the Hercules flight which ran into in bad weather - unable to return and landing so expertly in poor visibility at McMurdo.

Antarctica was for me and probably for all of us in some way a milestone if not a turning point in our careers. The memories of friendships and teamwork achieved are many. The underlying trust and companionship experienced are precious. Lastly there are the memories of those whose vision, enthusiasm, hard work and skills made it all possible in the first place. The person who immediately comes to mind every time is Bob Clark, to whom I and others owe a lot.

VUWAE 11 (1969-70) Vince Neall

One lasting memory I have was when Colin Vucetich and I spent Christmas 1969 in the Lower Taylor Valley. On our meanderings around the landscape we crossed a low saddle, only to find in the pristine Antarctic atmosphere a pungent rotten odour attacking our nostrils. Further investigation revealed it to be areas of very shallow water in which algae had been growing, but now as the season progressed, the waters were drying up and the algae rotting. I suggested we called it Lake Puhipuhi, when Colin turned to me and nonchalantly said, "I think Hannibal came through here with his elephants". It was just one of those occasions when I well remember cracking up with Colin's unexpected humour of the moment.

VUWAE 11 (1966-67) Chris Christoffel

My first visit to Antarctica was in 1958 when I was in the Navy and towed my magnetometer from the wooden ship HMNZS Endeavour between New Zealand and Antarctica and carried out an extensive survey in the Ross Sea, in conjunction with a biological survey carried out by members of the Institute of Oceanography. On the return trip we carried VUWAE members including Colin Bull, Peter Webb & Barrie McKelvey. I didn't have much time to talk to them as I was too busy in the hold tending my magnetometer.

That first trip got me hooked, and I subsequently had another 15 to Antarctica, some in conjunction with VUWAE. The first of these, with Ian Calhaem, in 1966, measuring heat flow through the bottom of McMurdo Sound by sending our probe through a US fishing hut hole was notable for our launching

into marine zoology. With the aid of an obliging Weddell seal, we caught a 50+kg fish, which we identified from a 200mm long type specimen as a *Dissostichus mawsonii* or now called a tooth fish, the first time found in recent times in the Ross Sea. We gave it to the Natural History Museum, so I must check if it's still there.

The next VUWAE trip in 1975 saw us with Doug Northey, Eric Broughton, Colin Brown & How Kin Wong from the University of Michigan, carrying out a magnetic and seismic survey of McMurdo Sound and Terra Nova Bay. At times our magnetometer was being towed over the ice, but, unbelievably, still gave reliable readings. Our measurements helped determine optimum locations for the MSSTS drill holes.

The first venture on to terra firma was with Peter Garden on Mt Bastion collecting samples for palaeomagnetic measurements, where we teamed up with Peter Barrett and Alex Pyne. Cloud conditions at McMurdo and Bastion were out of phase so that supplies were running low by the time we were collected. Peter and I continued to Beacon Heights, one of the most scenic locations in Antarctica. This was equalled in 1981, when we camped on the cirque near Mt Kempe and could see 250 miles out over the Ross Sea beyond Mt Melbourne and Franklin Island. Mt Erebus seemed to be in touching distance.

Communications with the outside world changed drastically over the years. In the 60's, one had to book a time with the PO operator weeks ahead and then for a half hour on the phone you'd be lucky to get five minutes of intelligible conversation. But in 1994, we were on the summit of Mt Feather at 10,000ft on the edge of the Polar Plateau

when Adam Wooller said, "I think I'll ring Mum." So he whipped out the hand held radio, called Scott Base via a repeater in the Dry Valleys and got patched through the satellite link to Mum's phone. A very sleepy voice answered. Mum was in Devon.

I've enjoyed my 38 years span in Antarctica - the camaraderie - the blizzards - the brilliant days and the times you can see forever - not to mention the scientific rewards.

VUWAE 13 (1968-69) Barry Kohn

I first landed in Antarctica in 1968 after a 14 hour flight in the US Navy Super Constellation - Pegasus. After about 7 hours into our flight the pilot announced that he had both 'good news and bad news' - we had now passed the half way mark, but had also reached the point of no-return, so we would be landing at Williams Field no matter what the conditions. I was reminded rather vividly of how quickly conditions could change on the ice during the 1970-71 season (VUWAE 15). While at Scott Base, a few days before setting out for our field season some of the staff invited us out on a 'looting' expedition to check out what could be retrieved from Pegasus before it was shoved off the ice into the sea. Pegasus had slid off the 'runway' while landing in a whiteout resulting in considerable damage (luckily no-one was seriously injured). That marked the end of the Super Constellation era and on to the C-130 Hercules and C-141 Starlifters.

VUWAE 13 led by Peter Webb and Barrie McKelvey, with myself (team medic) and fellow student Mike Gorton (mechanic) completing the team, aimed to explore the Boomerang-Warren Range-Lashly Mountains area. We were accompanied by two famous Italian mountaineers/journalists who guided us through dangerous areas - they were the precursors to Italy setting up an Antarctic base in later years. With little English between them, we soon found we could 'converse' fairly well without hands, especially when it came to rationing fresh meat or alcohol we had taken to break the monotony of freeze-dry rations. We covered about 500 kilometres with our Polaris toboggans and Nansen sledges that season. Scientific highlights were many, but undoubtedly topped by the discovery of Permo-Carboniferous tillites and rich deposits of beautifully preserved Devonian fossil fish.

One of the main plans of VUWAE-15, under the leadership of Peter Barrett and myself as deputy leader was to take a large party, including Australian vertebrate

Barry Kohn and Rodney Grapes relaxing during VUWAE15.





Alywn Chinn, Rosie Askin, Dave Bamford and Doug Bright on VUWAE16

palaeontologists Alex Ritchie and Gavin Young, and locals Rosemary Askin (the first NZ female student to travel south), Rodney Grapes, John McPherson and Dave Reid to recover some of rich fish fossil finds we had discovered during VUWAE 13 but did not have the proper equipment to recover without damage. As the only member from VUWAE 13, I was given the task of leading the group back to some of the important fossil sites. I managed to locate one of our key campsites by fortuitously finding underwear frozen in the snow (left by our Italian colleagues) - better than a GPS! Having Rosemary in the group worked very well (she taught us all that temperament was more important than strength) despite the fact that the Americans were reluctant at first to fly her to their Antarctic base. For me, the expedition was marked by a climbing accident I had while on an icy slope with Alex Ritchie searching for new fish fossil sites. Working near the top of a section I was blown off a ledge by strong

katabatic winds and rolled some 50 m or so down a rough scree slope. Luckily, when I woke up I was only heavily bruised with nothing broken (including my camera inside my down jacket), but was nevertheless evacuated back to NZ and only returned to join our group a few

weeks later. That mountain later became known as Mt. Kohn-descending!

Besides the deep friendships made and wonderful scientific stimulation during my VUWAE days, which added so much value to a traditional university education, rich memories that still remain include: the vastness and raw beauty of the Antarctic landscape (especially the Dry Valleys), the silence, the inability from a distance to judge scale, the coastal wildlife, the loss of sense of smell (making it interesting arriving back at Christchurch airport), adjusting to no showers and 24 hour daylight, sledging over different terrain (including that wind eroded sastrugi), mechanical repairs in the field (especially touching metal), camping on slowly moving blue ice, conversations during radio scheds, having more than 2000 year old pieces of ice core placed in my whisky at a McMurdo party with US Navy pilots, adventures with airplanes - such as very short landings on unknown snowfields, waiting five days for a pick-up (need to keep your thinking flexible)

and JATO bottle assisted takeoffs with rock laden aircraft..... and many more.... Long live VUWAE - an immeasurable treasure.

VUWAE 15 (1970-71) Peter Barrett

It would be hard to beat my first VUWAE expedition sledging around the Skelton Neve with Barry Kohn, 3 of the Honours class (Rosie Askin, John McPherson, Dave Reid), Rodney Grapes and the fish boys from the Australian Museum (Alex Ritchie and Gavin Young). An unhealthy tent-bound start was followed by toboggans falling apart on the rough sastrugi, and a blizzard in which much food and our entire tomato sauce supply for the season was lost in the snow. But over 5 km of Beacon strata were measured and sampled, beautiful Glossopteris and Dicroidium leaves collected, thousands of paleocurrent directions measured, Devonian soils recognised and described, a spectacular Permian glacial valley discovered, a ton of Devonian fish quarried, the Allan Hills mapped and the Darwin Mountains reconnoitred, all leading to 2 PhD theses, many papers and a large monograph on the fish.



Peter Barrett, Gavin Young, Shamus Curren landing at the Darwin Mountains on VUWAE 15.

VUWAE 17 (1972-73) Harry Keys

"One memory"? - many memories!

There are so many memories for me because VUWAE played such a big role in my life and career. Preparing for the field outside the hanger, first going-to-the-toilet epic in a blizzard at Cape Royds, sand in the dehi in dry valleys, ridding chocolate from old food boxes (often VUWAE ones) there, mail drops after two months, search and rescue in a blizzard across McMurdo Sound, night-long sessions in the sunny bar at Scott Base and hangovers to match, generous welfare from Phil Kyle after the same at Black Island and Erebus, and not to forget those long hours back at VUW writing the thesis. The strongest memories are of people and Erebus - Peter Barrett and Russ Plume glissading in the midnight sun at Table Mountain, field life with Janet Andrews and Rosie Kyle at Shapeless, pancakes 24/7 with John McPherson in the Skelton, and expeditions to Erebus punctuated by the exciting challenge of the craters and French Beaujolais. Thank you VUWAE.

VUWAE 17 (1972-73) Trevor Hunt

Panic in the air On the way to Shapeless Mountain we were detained at Vanda Station for several days by bad weather. The weather finally improved, and I was on the last of three flights from Vanda up to Shapeless. We were packed like sardines into the back of the helo. At about 7000 ft over the heavily-crevassed Airdevronsix Icefall at the head of the Wright Valley a bright red warning indicator saying “hydraulics out” began flashing on the instrument panel. One of the pilots indicated to us that this signified loss of hydraulic connection between the cyclic control stick and the main rotor hub. Momentary panic - I knew from helicopter flying experience this was serious and it was clear that this was no place to have an emergency landing. However, he then went on to say that this had happened a couple of times recently and that since there was a dual hydraulic circuit there was no problem. Indeed, he fished out a movie camera and began taking pictures of the instrument panel.

Wheelies After 35 years I can finally confess. At Shapeless Mountain we had two Johnson snowmobiles for transport. One day there were four of us out in the field together (two on one of the snowmobiles and two on a sledge towed behind). We got to a large snow bowl, partly rimmed by a ridge of rock. We stopped near one end of the ridge and the geologists indicated they would like to walk along the ridge collecting samples. I offered to stay with the snowmobile, take some photographs then drive over to pick them up at the other end. This particular snowmobile was always hard to start, and Ken (field leader) had developed the technique of partly opening the throttle and wrapping a cord around it to hold it open while standing

alongside and pulling on the starter cord. This was the first time I had driven this machine so I copied his technique, or thought I did. I wrapped the throttle, got off and pulled the starter cord, the engine roared into life, the centrifugal clutch engaged and before I could grab it the machine was away. The snow bowl was shaped like a shallow saucer and the snowmobile went round and round in ever widening circles. My attempts to catch it as it roared past were fruitless. After about 10 minutes and several circuits of the bowl it reached the edge and plunged over a steep bank opposite the ridge. We all trudged to the edge to view the damage. Surprisingly, it suffered little visible damage: cracked windscreen and a few other minor things. Once we had dragged it back up to the snow bowl it started without hesitation and no internal damage was evident. We kept quiet about the incident, but I did hear later that the mechanics at Scott Base reckoned that the students were hard on equipment.

Clarity of the air I have a “snapshot memory” of standing, at midnight, on the top of Shapeless Mountain, looking eastwards to Erebus. Even though Erebus was more than 150 km away, the air was so clear that I felt as though I could reach out and touch it. When people say to me here in New Zealand that the air is clear, I say “not really - to experience clear air you need to go to Antarctica”.

Time One of the things I remember about tenting at Shapeless Mountain was the slippage of time. In New Zealand we are accustomed to getting up when it gets light and going to bed after dark, and generally operating on a 24 hour cycle. However, in the summer field season in Antarctica it is light all the time, and it may take half an hour to do

what might take just a few minutes back home. It often took three hours to get up, have breakfast and get ready to leave camp. This leads to slippage of time: 24 hours becomes 28 or 30 hours. After a while we found we were getting up one day at midday and returning to the tents at midnight, and getting up at three in the afternoon the next day.

Bamboo poles When we got to Shapeless campsite, we found amongst other things a pile of bamboo poles about 2 metres long with a flag on top. Nobody seemed to know what these were for or who asked for them, and so they were just left on the snow along with other stores not immediately needed. A couple of weeks into our stay we had a blizzard and heavy snowfall which covered up our stores. This resulted in our digging frantically one morning to find the stores and in particular for the box with the toilet paper. As usual it was about the last box to be uncovered. We then realized the poles were for marking where the stores were.

Animal life on the Plateau? Rick Allis and I were making gravity and magnetic anomaly measurements out on the polar plateau near Shapeless Mountain. We had our heads down, absorbed with getting the instrument readings until at one point, out of the corners of our eyes, we sensed irregular movement; like the scurrying of some small creature darting from cover to cover. We knew that there were no animals here and so we at first felt some consternation - were we going mad? After a short while, looking out on to the sastrugi we saw something small a few hundred metres away, scuttling from behind one sastrugi to another. Plucking up our courage we went to investigate. It was an empty Weetbix box being blown about by the

wind. Presumably it had escaped from the previous reconnaissance expedition a few years back; it wasn't from our camp because we did not have any Weetbix. It brought home to us that nothing decays in this place.

No gas stations in the Wright Valley Because the equipment to measure water currents in Lake Vanda failed soon after we got there, Rick Allis and I had some time to spare. One day we borrowed the Gnat, a quaint two-seater, three-wheeled farm bike and headed down the Wright Valley to visit the Meserve Glacier. Officially we were going to change the meteorological screens. On the way down we stopped and climbed up to Bull Pass and saw the ventifacts, and further down we saw some mummified seals. The Gnat had a very small fuel tank, insufficient to get us back to Vanda, but we were assured there was a petrol dump at the Meserve Hut from which we could refuel. However, we searched high and low but could not find the dump. Fortunately we did find an old whisky bottle labelled “White Spirits”, and after some hesitation poured the contents into the fuel tank. We gingerly drove back and arrived in time for dinner. We left a few days later and don't know if the Gnat's engine survived missing its customary feed of lead.

Honey buckets At Vanda Station it was the custom for the men to urinate into a 44-gallon drum. When full, these drums of frozen urine, colloquially called “honey buckets”, were helicoptered out and placed on the sea ice for disposal. The American helo pilots, often from the southern states, liked to keep the cabin at Miami temperatures; this resulted in the honey thawing during the long flight and an unpleasant smell pervading the cabin. So there was often refusal by the pilots to fly out this cargo. However, the guys at Vanda hit on

the scheme that they would not wait until the drum was full - just (say) three-quarters full - and then top it up with general rubbish. The drum, along with several others completely full with general rubbish, would be loaded and the poor unsuspecting pilots would not realize they had been duped by the Kiwis until they were about 20 minutes out of Vanda when the thaw was underway. Apparently the pilots never guessed why the Kiwis were always helpful in loading the helo - so that they would not know from the weight of the drum that it contained more than just general rubbish.

Cheap beer The Yanks at McMurdo Base were fussy about their beer, and once the resupply ship had arrived they would not drink the old beer. This provided a windfall for the thirsty Kiwis. I remember those of us staying at Vanda (January 1973) putting in a bulk order for some of this disdained beer, and a helo coming in fully loaded with cans of Budweiser (about 40 cases). It was not great beer, but at 2 cents a can it was a bargain, and it lasted all of a week as I recall.

New Year with the Japanese Rick Allis and I got dropped at Vanda Station on 31 December 1972 to undertake his work on measurement of current flow in Lake Vanda. That evening all those at Vanda were invited to celebrate New Year with the three members of the Japanese Antarctic Research Expedition based at Vanda. We repaired to the Japanese tent about midnight and for the next five or six hours enjoyed their hospitality, drinking excellent Suntory whisky, eating Japanese food and talking. However, we found the dried seaweed a little difficult; it was like chewing boot leather. There were some sore heads later in the day when we woke up, but

international scientific relations had been strengthened.

VUWAE 18 (1973-74) Paul Luckman

Feeling elated at being selected to go to the ice...Being frozen as never before or since, at the Tekapo training camp...learning how to do ice axe self-arrests in a white-out on the Tasman Glacier....Arriving at McMurdo, jet engines screaming, eyes hurting from the glare, being transported by Nodwell to Scott Base....waking up at 2 am the next morning and going for a walk above the Base, with Erebus looming over the landscape... savouring the view as far as Mt Terror... George (field assistant) and I motor-tobogganing out across the sea ice to Cape Evans which we used as the base for my study of the hyaloclastites of Turks Head... the incredible silence out on the ice...holding a conversation in normal tones over a distance of 100 m or more....getting in (too) close to the terminus of the Barne Glacier, and being awed by the size of it....being similarly awed by the height of the cliffs at Turk's Head, and wondering if Jim Cole would be desperately upset if I didn't risk my neck to climb to the top and produce some sort of structural map of area (it's a mess)... staying in the wannagan at Cape Evans... Stepping back in time in the dim light inside Scott's Hut.... shooting off umpteen rolls of film on the penguins, especially the emperors, and the blue-black water at the ice edge at Cape Royds... Joining the Dry Valley Drilling Project team at the Earth Science Lab at McMurdo, with its very own urine glacier... meeting up with Sam Treves, Mike Mudrey, the Japanese, and fellow students/assistants from Northern Illinois University, John Wrenn (ex US Marines



Back: Rosie Askin, ?, Janet Andrews, Ken Blackwood, Graeme Rowe, Front: John McPherson, Russell Plume on VUWAE18.

tough guy) and Gil Ankenbauer (never left Illinois before, or seen the sea before coming to Antarctica) ...Setting up the DVDP camp at Lake Fryxell...climbing up the side of the valley, enjoying the solitude...looking back across to Ross Island... All of us being anxious what sort of Christmas dinner (if any) the drillers' volatile cook would serve up.... but having a great meal in the big tent...moving on down to New Harbour for Holes 8 & 9... helicoptering out the soil polluted by a DFA spill.... the homeliness of Scott Base, and the cook putting on a great spread for my 21st birthday.... jumping a tour on a C130 to New Pole Station which was under construction, getting winded rushing around in the thin air taking photos, leaving it a bit late to rejoin the plane, and narrowly missing the props in taking the most direct route Skiing on perfect powder at the Scott Base Ski Club, so that even a novice could do turns like a pro....

Figuring we'd cross-country ski out to Castle Rock to complete my hyaloclastite project field work, and finding out that walking was a more reliable way of going forwards... Looking forward to returning back to NZ in the middle of February.... arriving back in Wellington and being struck by the vivid emerald living stuff growing all over the hills.... Getting baked in the sun at the beach, and feeling privileged to have had such a great experience... Very special memories of a place that still had an IGY flavour at that time....

Thanks VUWAE, and DVDP, especially Jim Cole and Peter Barrett (and remembering Bob Clark, particularly) for making it all possible.... Also thanks to Barry McKelvey and Peter Webb for making such a good impression on VUWAE 1 that we all could follow on in later years.

VUWAE 19 (1974-75) Ray Dibble

My first trip was in 1962 with DSIR. I went down at Winfly on the Super Connie, and saw my first and best aurora through the plane window. First impressions were the rhythmic freezing and thawing of the inside of my nose in the minus 50 °C temperatures at Williams Field, and the drive to Scott Base in the Tucker Snocat. Entering Scott Base was a surprise too. Some of the winter-over party were scared of us, and played hide and seek.

My task was to install the slow speed tape recording seismograph I had designed at Cape Crozier, hopefully to record the ice-quakes from the calving of icebergs from the Ross Ice Shelf. I left it recording for 3 months, but only one calved - during a storm at Christmas which threatened to destroy the Jamesway. The penguin scientists turned the heater off for safety, and the recorder froze up and stopped. Next morning the berg had beached in front of them so they could see what they had missed! The Scott Base staff packed the recorder up and put it on a ship but not on the manifest, and it travelled back and forth from McMurdo to the US via NZ



Fumarole on Mt Erebus that became the seismograph station in 1974

until I asked what happened to it! I was lucky to get it back!

That I thought was it, but Phil Kyle (a VUW student) asked if he could borrow a tape seismograph to install in a warm cave at the summit of Erebus volcano, where he had discovered an active lava lake in 1972. For VUWAE 19, he organised a joint expedition with Haroun Tazieff and his French team, and accepted my offer to operate a 5-station seismic network, and a visual recorder of seismic power, so that Haroun could plan his attempt to reach the lava lake at a seismically quiet time.

Werner Giggenschach and I arrived at Scott Base on December 2 (1974) and next day were sent up to the Summit without acclimatising to care for the 13-tent village at 12,600ft until the main NZ-French-US team were ready. A major storm was brewing as the main party were flown to the Fang Glacier acclimatisation site. At the Summit, all our tents except the two that Werner and I slept in were blown down. I slept fully dressed (including mukluks), but without worry, because I already had a ladder into the warm cave which was my seismic recording room.

Haroun persuaded VXE-6 to carry heavy winches to pocket sized pads on steep slopes close to the rim of the crater, where a flying fox to the main crater floor was installed. Werner had big boxes full of evacuated flasks with which to suck volcanic gases from the lava lake, but as I saw at close hand, an attempt to improve the load attachment to the flying fox caused them to fall 90m, and break about half of them.

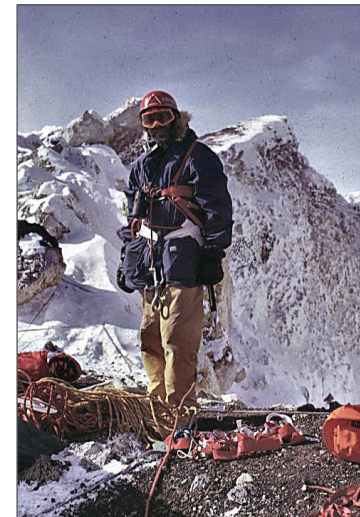
Finally, all was ready for the descent to the lava lake. A 24 hour watch from the rim was

begun, unfortunately coinciding with a 24 hour burst of activity, with 6 eruptions which would have killed anyone in the crater. Contentiously the French decided the risk was too high, and we all packed up and left. The New Zealand public and the media were not impressed.

For VUWAE-1978, Phil Kyle was now in the USARP programme, and had persuaded NSF to build a permanent hut at the Summit camp site. Haroun Tazieff came, and another attempt to reach the lava lake was made, NZ style, using a simple Z pulley system. Werner Giggenschach had reached the bottom of the crater, when the "Active Vent" in the opposite wall exploded. Fortunately it bulged first, and he was warned by radio, and swung his ropes out of the way of the flying bombs. One hit his leg, setting his trousers on fire, and one landed on the bench the rope handlers were on - within a metre of his lifeline ropes. I took a photo from the rim opposite. The New Zealand public and media loved it!

My programme that year included a new infrasonic microphone and a simple induction loop of wire around the crater, both connected to the tape seismograph recorders. Volcanic explosions were recorded on all the detectors.

Next was VUWAE-1980/81, when Phil Kyle, now at New Mexico Tech, Jurgen Kienle of the University of Alaska, and Katsu Kaminuma of the National Institute of Polar Research, Japan, and I, began the International Mount Erebus Seismic Study (IMESS). We aimed to record earthquakes all year using radio telemetry to Scott Base. NIPR was supplying the recording equipment and supplies, and I provided a more substantial buried figure-of-8 loop, and several infrasonic sensors. The first expedition went well, but because all the recordings belonged to NIPR, Takeshi Nagata, the famous



Ray Dibble gearing up to descend into the Crater of Mt Erebus

magnetician who was Director of NIPR, published the data before the rest of us could. His response to our protests was to pay us to visit NIPR, and work on the data at the same time as they did.

Also in 1980/81, David Iles and I made a seismic refraction study of the floor of McMurdo Sound from the sea ice near Butter Point. It was weird being able to record at far higher gain than in New Zealand, when only a metre of ice separated the geophones from deep water. Unfortunately, the spread was not long enough to reliably find the seaward edge to the shallow basement. Strong refractions/reflections from basement which was dipping between 14 and 29 deg east were being recorded right to the end.

For VUWAE-1982/83, we used a longer spread, but the ice surface was dead flat this time,

allowing strong direct arrivals through the ice to obscure bottom refractions with similar velocity. Worse still, the spread was in a different place, and the time-distance graphs were quite different. No definite basement refractions were recorded, but the deepest refractor of 3.5km/s velocity could have been basement of the New Zealand type (greywacke). It wasn't, and Peter Barrett was very disappointed when his CIROS hole didn't reach basement.

In 1984/5, while on Sabbatical Leave, I was (1) employed by NIPR in Tokyo as Invited Professor, (2) part of the NSF team on Erebus, where I loaded and fired 707kg of explosive for seismic exploration of the volcano, (3) invited to the University of Alaska, to search for signals from Erebus eruptions in the recordings of the Windless Bight Infrasonic Array. A big jump in eruption activity at Erebus occurred on 13 September 1984, and I found enough data for a complete paper (1988) on infrasonic recordings of the eruption sequence. NSF gave me a US Antarctic Service Medal for the shot-firing.

Ray Dibble looking at data at Scott Base



After 1985, the relationships between the IMESS partners were uncertain. The International Mount Erebus Seismic Study ended, and NIPR were not invited to McMurdo, but all the IMESS equipment was still running at Scott Base, and on Erebus. I proposed a new VUW programme, the Mount Erebus Eruption Mechanism Study (MEEMS). I needed NIPR to provide the recording materials, and maintain their recorders. Bob Thomson said they would be welcome at Scott Base, and their director promised me their full cooperation. Differences of interpretation as to the depths of earthquakes accompanying explosions in the Lava Lake of Erebus were becoming serious because my infrasonic signals were very coincident in timing with the seismic signals from the seismically located "deep" earthquakes "triggering" them.

For VUWAE 1986/7 I proposed a TV station on the crater rim, recording the eruptions on a video cassette recorder at Scott Base, where it could use the same recording clock as the seismic recorder. NSF had no objection to the TV programme, but they were objecting to so many nations expecting so much support from the US. Phil Kyle was still going to Erebus in 1986/87, but not with IMESS money. He and his team enthusiastically helped me install the TV station, which involved pioneering a skidoo route from Fang Glacier almost reaching to the Crater Rim. Phil was happy that NIPR were helping me with the seismic recordings, but only if NSF would give permission for me to receive signals from at least two of the US telemetry stations on Erebus.

No doubt it was a knife edge decision, but the answer was NO, and Bill Macintosh

(Phil's right hand man) was directed to remove the telemetry receivers from Scott Base, and reinstall them at McMurdo, thus preventing accurate time comparison between the seismic and video recordings. I felt for him! I consulted Bob Thomson and Trevor Hatherton on the ethics of buying our own receivers and "stealing" the seismic telemetry signals from the ether. They said OK, and I resumed seismic recording at Scott Base after only one month. Thus I was able to unofficially display a poster confirming the shallow origin of Erebus explosions at the Cambridge Antarctic Earth Science meeting in August 1987 during a holiday visit.

VUWAE 1987/88 was the acid test. The top NSF administrators visited Scott Base, and were shown our TV and seismic recording system. I thanked them warmly for allowing the programme to continue, and they congratulated us on the results, in which I showed by stacking seismic recordings of similar explosions that the apparent depths of the eruption earthquakes were caused by error in the seismic velocity used in the location, which had been disguised by the emergent onsets of the seismic waves. It was 4km/s instead of the previously determined 2km/s.

Thus the programme continued in VUWAE-88, 89 and 90, until I retired in 1991, but not without incident. In the 1987/88 season the field assistant/safety officer objected to me using full power in the Skidoo to climb the 30 degree slope to the crater rim. Obediently, I tried to make the climb slowly, but when I attempted to turn into the level park at the top without being able to shut the throttle and transfer weight on to the steering skid, it refused to turn until the skid caught on a small rock in the snow, and tipped it over. Thus, I

gained the record for the highest capsizes (3900m) in Antarctica. Since 1986, I had videoed 200 explosive eruptions and three lava flows, the last of 20,000 cubic metres, and recorded another seismic crisis on 2 December 1987. We even added 16-channel digital seismic recording in 1988 so we could cross-correlate seismic waveforms to find 10 families of near identical earthquakes among the roughly 5400 digitally recorded ones.

Epilogue

In 1994 when Phil Kyle began his new Mount Erebus Volcano Observatory (MEVO) programme with NSF funding, he invited me to manage the seismic array from 1993 to 1998, and I made seven more visits to McMurdo. Thank you again NSF. Recently, I submitted a paper to show the video pictures of changes in crater morphology, eruptions, and lava flows, and comparing this to charts of seismic power and cumulative seismic magnitude. The paper fills the gap from 1986 to 1990 in the descriptive record. I am also most grateful to Prof Bob Clark and Prof Peter Barrett for continuous support, the Antarctic Research Committee for giving my proposals an A grade so many times, Bob Thomson for friendship and support since we worked together at the Seismological Observatory during IGY, and Malcolm MacFarlane and everyone else at Antarctic Division.

VUWAE 20 (1975-76) Alan Palmer

My main job was to be field assistant to Paul Robinson who was doing field work, principally in the Taylor Valley, for his PhD. For some time we were camped on Lake Bonney, at the snout of Taylor Glacier, and I was also able to take a

week to collect samples for my Honours project while Paul worked nearby.

Paul was great to work for, we got on well and I learnt a lot from him. We had no major dramas, except that our campsite on the lake ice at the snout of the glacier was flooded one unusually warm day while we were out. The melt water from the stream beside the glacier spilled out over the lake ice and through our tent. We did a lot of walking, both up and down valley, and up and down the valley sides. George Denton was working in the valley that year too but he had a helicopter at his disposal. On several occasions we would see his helicopter buzzing overhead as we trudged along heading for various outcrops. We would get there to find parallel marks in the sand where the helicopter had landed, and footsteps leading to and from the outcrop--usually less than 100m away. We might have walked several kilometres to that same outcrop. However, I would not have missed that walking for the world. On every step there was something new to see.

In 1976-77 we were a field party of four: Chris Burgess (a new lecturer from Aberystwyth); John Anderson (like myself having just completed BSc Hons); Ken Sullivan (a DSIR field assistant) and myself. We were mapping the Beacon Heights Orthoquartzite and other sedimentary rocks in the Fry Glacier region. Little work had been done in the area since the Gunn and Warren days, and they had just skirted the area we were mapping. We travelled by toboggan train: Ken leading, Chris sitting astride the first sledge, John driving the second toboggan and me standing on the second sledge equipped with a brake.

We almost started disastrously. Ken and I

were on the first helicopter load with one motor toboggan and one sledge. We had selected a campsite on the Towle Glacier from aerial photographs. We set down and quickly unloaded the gear, helicopter motor running, so there was the usual flurry of ice particles in the air affecting visibility. As the helicopter left we realised how poorly chosen our site was. We were surrounded by blue ice and quite steep slopes. After a quick reconnoitre, we found a much better site about half a kilometre away, up the glacier, but it was going to be tricky to drive the toboggan there, such was the smoothness and slope of the ice. Ken was keen not to wait until the helicopter returned with the second load. We were concerned that during the unloading, toboggan, sledge and gear could have slid away down the glacier and over the 20m cliffs at the end, over a kilometre away.

What we did was as follows: He would drive the toboggan, towing the sledge as fast as he could up the slick glacier ice until his traction failed. I would then drive in an ice screw just behind the toboggan and he would let the toboggan slide down hill, which then pulled the sledge up. I then had to hold the sledge until the runners were stuck to the ice, and we would repeat the procedure.

By the time John and Chris arrived, a couple of hours later, we were on a much better site, with tent erected and tea brewing. Ken had a great big grin on his face, but I was still shaking from the experience, imagining what would have happened if either the sledge or toboggan or one of us, had slid away down the blue glacial ice.

I am proud to say that we did not lose a single day that trip due to mechanical problems with the toboggans, which was almost unheard of.

Both John and Ken were motorcycle nuts who had carefully checked the machines and fuel at Scott Base, and who lovingly maintained the machines in the field. Chris and I didn't have a clue. Ken's mountain climbing skills saved Chris, John and I from doing stupid things on several occasions, both when negotiating the blue ice or crevasses on the glaciers, and when climbing and describing the sections of Beacon Heights Orthoquartzite.

VUWAE 24 (1979-80) Alan Ross

My thanks to everyone who made it possible and added to the adventures. I was lucky as I spent my 13 weeks based between Scott Base, the drill site on the sea ice and in the field at Shapeless Mountain.

I remember discovering that minus forty really was cold after finding the room we were warming up in while working in the hangar was the summer freezer held at minus 200C, that shovelling a winter's collection of husky puppy pee and poo got lots of dogsled rides and that slalom shovel skiing on a rope behind a snowcat was considered "unsafe". The perfect still and clear nights out on the sea ice and on the Blue Glacier helping Brian Sissans with his gravity survey.

Trying to concentrate on my last Honours exam in a yellow shed out on the sea ice with a drill rig being set up outside, a kerosene lamp to warm my hands hissing loudly and still recovering from the discovery that American beer that had been frozen was only 3 cents a can. Taping records all night while doing "Mouse" at Scott Base, the view out the window and Americans with their disconcerting large tips for the bar person.

There is a limit to how many snow freeze icecreams and frankfurters you can eat the first visit to the McMurdo mess and still walk back over the hill.

The day of the Erebus disaster, starting with the growing concern of a missed radio call to chat with base staff near lunchtime and ending listening to the descriptions from those first back from the crash-site.

My first ride in a helicopter where my only view was a close-up of the cabin ceiling then hesitating to get out as I'd need to stand on sandstone with amazing current ripples (just like the specimen in the cabinet outside the lab at Vic). The silence after the chopper had left, days later replaced by the roar of wind gusts arriving down from the polar plateau. Walking in a field camp to Horseshoe Mountain with Barry and Alex then playing sardines for three days in a small green tent, the amazing hospitality of the Vanda staff on Christmas Day, a bath in the zinc tub in front of the stove and seeing ventifacts at Bull Pass. And the flight back to Scott Base, face riveted to the window not wanting to miss a single thing.

The last couple of days before we went home we were back out on the sea ice, such a different place in mid January after some warmer weather and moving around with a chopper. And finally that first smell of green grass and rain inside the Hercules, even before we landed at Christchurch.

VUWAE 27 (1982-83) Isobel Gabites

I vividly recall, at the age of six, the crackly phone call from my father at Scott Base "it's minus 10 degrees Fahrenheit here - go and ask

your sisters how cold that is” and I was hooked. That was something I wanted to understand for myself. Perseverance paid off and Peter B eventually swung the funding through the government Student Employment Scheme of the day -great scam Peter! So in 1982-83 I accompanied Barry Walker to study the paleobotany of the Lashly Formation so that got us to Allan Hills, Shapeless Mt, Mt Bastion and Portal Mt.

Nothing had prepared me for the way layers of Triassic sediments were peeled back offering me a text-book like exploration of fossilised forests and peat rafts swept downstream by floodwaters, coal deposits, intact floodplain ripples and dunes, and fossilised soils complete with trace fossils. Perhaps I jeopardised my research by leaving pretty much all the evidence there in situ but I simply couldn't bear to disturb those fantastic glimpses of the continent's metamorphosis through time. Nevertheless, a MSc (Dist) eventuated, plus a bad case of that well chronicled illness of 'how can I get back down there' that persists through life.

Actually my most intense memories involve the trauma of having unsolicited drugs intercepted by the black lab at Christchurch; the subsequent interrogation in the hangar between field locations (I gather Alex had a hard job convincing them to let me back into the field at all) and being banned from the ice (so much for any hint of a promising career, thanks Bob - what ever happened to the concept of innocent until proven guilty) . . . of the noisy American explaining to me in the bar how he smuggled his drugs in while behind him Johnny Thurston (OIC and senior police officer) had his ears flapping . . . of diamond dust shimmering in crisp blue air . . .

the deeply emotional throbbing of approaching helicopters (still moves me) . . . of lying in stillness on the ice sheet - nothing there - nothing heard - floating in white space . . . stupid inter-field party radio conversations that cost us our spare batteries when we seriously needed them after an episode of gas-cooker poisoning . . . the wicked humour that kept everyone on their toes . . .and being one of only four Kiwi females down there that season made me even more sensitive to the privilege of being there.

I've had a glacier named after me -a strange feeling to have a precious bit of 'my Antarctica' bound to the Gabites family for all time. For me it also serves as a memorial of my father's involvement with IGY and meteorological research on the ice. Just don't let it melt, OK? If anyone can help stop the melting it's the phenomenon that is VUWAE and the resulting work that might just breed a new respect for our atmosphere.

VUWAE 29 (1984-85) Richard Kellett

In 1984 I was in the third year of my undergraduate geophysics degree. The request for applications for summer students for the 84/85 VUWAE came out and I applied for a position. Unfortunately I missed out on one of the slots for the geological field projects. Luckily the Antarctic Research Centre was approached by the German Geological Survey (BGR) to provide two field assistants for the German Antarctic North Victoria Land Expedition (GANOVEX IV). I was selected along with Jean Olson, an MSc student in seismology, and Jack McConchie (NZARP field guide). I have vivid memories of the training camps at Lake Tekapo with

mountaineer Rob Hall, and the expedition specific training in Terra Nova Bay with Rob's climbing partner Gary Ball. Jack McConchie and I were assigned to the Campbell Glacier Team, working on a traverse across the Campbell Glacier onto the flanks of Mt Melbourne. The project was my first exposure to electromagnetic (EM) and ground penetrating radar (GPR) methods in



Richard Kellett operating CSEM receiver



geophysics. I was fascinated by the complexity of the electronics equipment deployed in such a remote environment. Today I have worked in EM and GPR for over 20 years and have enjoyed working with

equally complicated electronics equipment in Australia, Africa, South America, and the Canadian Arctic. Overall I remember the dedication of the Campbell Glacier team in overcoming logistical restrictions, and equipment problems to collect a significant amount of data and provide a valuable testing ground for the technology.

VUWAE 32 (1987-88) Susan Ellis

Random memories as a student assistant to Ray Dibble on Mt Erebus:

- discovering that seals don't like violin music
- scrabbling around at the ice edge trying to get out, after the requisite dunking as part of the Vanda Swim Club experience
- buzzing out-of-focus emperor penguins by helicopter after joining the Vanda Drambuie Unity
- the terrific cold, beautiful white and pristine conditions on top of Mt Erebus
- breath ice crystals falling into my sleeping bag when dislodged from the tent wall each morning
- Ray carefully sleeping with an orange stuck in his sleeping bag so that it would remain unfrozen
- red icicle tusks on technical assistant (Terry Ball) after he got a nose-bleed
- great friendships struck up with my fellow compatriots at Scott Base and some of the construction workers at McMurdo Station
- hugging trees when I got back to NZ!

VUWAE 33 (1988-89) Ken Woolfe; 1965-1999

Written by his partner Lisa Crossland

Although I can't offer memories of the Ice, I'd like to offer my memories of the stories told to me by someone I shared my life with who "went south" almost every single year from our first meeting at Victoria University in 1988. My partner, Ken Woolfe was made to go south (many at Victoria may remember his steadfast refusal to EVER wear long trousers, no matter what the temperature in Wellington)! Over the years, various expeditions with Malcolm Arnot, Dan Zwartz and Tony Teeling (to name a few) always resulted in a return after Christmas (and usually after the New Year) with wonderful stories which I always now think of as falling into the 3 'fs': funny, frustrating and fascinating.

Funny were those involving the descriptions of mad recipes in field tents (literally) cooked-up in the middle of nowhere, when food supplies were low but creativeness was high - 'Magnetic Anomalies' spring to mind! There was also the incident during overland travel where a precious bottle of Canadian Club was



*Drillers at work on the floor of
CIROS 1 (1986-87)*

broken and anything soaked in alcohol suspended from the apex of the tent and strategically positioned over hot water - the team-members lay on their backs in a circle and inhaled the steam!

Frustrating were the letters I received from Ken in the field, usually describing the weather - being stuck in his pit in high winds and driving snow; digging out the ropes and gear after heavy snowfall; and weather that delayed helicopters when everyone was waiting for mail from home.

Finally, fascinating were the many beautiful photos - striped outcrops, nunataks and a single, small person against a huge view across a glacier...not to mention the stories about getting into difficult field areas and the skill of helicopter pilots. Ken's last trip south was as part of the Cape Roberts Project and I was lucky enough to be party to discussions about the amazing science coming from that work with international guests at our home here in Australia.

CIROS 1 (1986-87) drill site offshore New Harbour



These are all wonderful memories. Antarctica was very much part of Ken and VUWAE was where it all started. His stories gave me a glimpse into the southern continent and a huge respect for (and envy of) those of you who spend time exploring and working there.

VUWAE 37 (1992-93) Emily Gee

I was the only girl in my team, and we were out on the ice for several weeks. Everyone I saw had a beard -- from the guys I was working with, to the helicopter crew members who brought us out fresh food and mail. I began to have dreams that I grew a beard too. I used to wake up quite panic stricken!



*Drilling on Table Mountain with Knob Head
in the background during VUWAE41*

VUWAE 41 (1996-97) Warren Dickinson

My first trip to the ice in November 1996 has been and will probably remain my most vivid recollection, even though I have been to the ice many times since. I chalk these memories up to brain overload and fusing of engrams. My event was to core the Sirius Group on Table Mountain in search of elusive in situ diatoms below the surface. Our drilling kit, put together on a shoestring budget, consisted of a tripod to hold the post-hole drill motor and a home made air compressor, euphemistically named Bitch.

A day before departing for the field in the Kiwi Iroquois, Bain Webster, our driller, knew he was in way over his head and decided to return to his business in Porirua. Before leaving he seconded Pat Cooper, head driller from the Cape Roberts Project, to help the 'beakers' on Table Mountain. Pat was always

up for a good caper, and he took on the task of drilling shallow core in permafrosted sediment with a dogged determination. Our first day of drilling yielded 1 m of core and Webster's pristine diamond bit, hard-frozen in the hole. We spent almost 2 days trying to free that bit before sacrificing it to the Antarctic god of sanity. After the sacrifice, Pat wasted no time in using a hacksaw and gas torch to fabricate a new bit that would prove to be highly successful in the coming campaign. We spudded the next hole 6 inches from the first, and Pat carefully cored 8.5 m with about 98% recovery. Given the equipment, budget, and harsh conditions on Table Mountain, this has to remain one of the all-time greatest successes in the Dry Valleys, and judging by our consumption of spirits that evening it is remarkable I even remember that day so well.

After this first hole, which reached the contact of the Sirius with the underlying Beacon, my companions and I figured we could accomplish anything. The rest however, wasn't exactly anticlimactic as we cored a further 8 holes without getting stuck and reached 9.5 m in one

of them. Cooper was never one to wait for a scheduled site shift by the Kiwi Air Force, and under his command we had a great time sliding the 400 lb Bitch on drill rod, some 1.5 km downhill to a new location.

We left Table Mountain after 25 days with nearly 50 m of frozen core. In the end, we never found those diatoms but learned much about how to core frozen sediments and about the chemistry and diagenesis that occurs over millions of years in frozen sediments. Without doubt, a similar expedition today would yield much more core in half the time. However, it would lack a similar feeling of accomplishment, which was largely possible because of the dogged and sometime heroic determination of my four companions on Table Mountain. Since then one of my greatest joys has been to take students on their first trip to the ice and watch their excitement and determination long after the gloss has worn off of mine.

VUWAE 42 (1997-98) Cliff Atkins

During winfly, I helped Alex Pyne measure the thickness of the sea ice at the proposed Cape Roberts Project drillsite. Despite the marginal sea ice conditions, the decision was made to go ahead with the drilling season. After only about 10 days of drilling a severe storm descended on McMurdo Sound. During the night, the drillers reported that the storm swell under the ice was lifting the drill bit off the bottom of the hole, and it was decided that there was no point drilling under such conditions. After several hours attempting to



The Cape Roberts Project winfly crew (Peter Sinclair, J.R, Cliff Atkins, Jim Cowie, Alex Pyne and Brian Reid) at the open water near the rig after the storm.

radio the camp, we managed to get through and confirm a "tactical retreat" for the night. Spirits were still pretty high, and we were convinced we would be back drilling the next day. After securing the drillsite, we drove back to the camp at Cape Roberts going slowly from flag to flag in low visibility over fresh snowdrifts. As we approached the known sea-ice crack, I could see it had broken open and was 1-2 m wide with open water! I stopped the haggis several metres back from the edge and went for a walk to find a narrow place where we could cross. No luck, so finally we radioed the camp and got Alex out of bed. Now this is not a decision we took lightly at 4am! While waiting for Alex to come to the radio, I wondered whether we were making a big fuss out of nothing. After all, the haggis can (technically) cross over a fairly wide crack. I relayed the situation to Alex and they decided to come out in the other haggis with bridging planks. When they arrived Alex took a long look at the extent of the crack and all he said to me was "good

call Cliff". I nodded and quietly thanked my lucky stars I hadn't tried to cross!

Alex knew that the sea ice break up was liable to be worse further offshore where the rig was. This was confirmed the following day from a helicopter. A very wide crack had opened up only a few hundred metres away from the drillsite and the decision was made to abandon drilling for the season. Everyone was pretty gutted by the news but got on with the job of breaking down the drillsite in less than 24 hours.

A few weeks later, I was on a Fam trip to the Historic Huts. Our Hagglund was crammed full of Kiwis and Americans, many of whom had not been in a Hagglund before. The mood was a little sombre that morning as news had just broken that three skydivers had been killed after jumping from a Herc over the South Pole. Despite this, we had a great day marvelling at the huts of Scott and Shackleton. On the way back over the sea ice, everyone was napping in the rear cab of the haggis when the whole vehicle suddenly lurched sideways, and we could hear the engine revving hard and the tracks ripping in the ice. The cab came back to upright but seemed to be swaying. It occurred to a few of us that we had broken through the sea ice and were hopefully floating! The realisation of what was happening, and the mental image of the tracks under us hanging in the dark depths began to dawn on everyone. One guy in the back panicked and tried to open the door to get out. Needless to say, he was told rather bluntly to leave the door alone and informed that the haggis can swim, as long as the doors remained SHUT! We scraped the ice off the windows and could see only the boots of people on

the ice outside (at our head-height) while they were yelling for us to keep still. We could hear people scrambling around on the roof removing the survival gear so our car would float higher at free up the escape hatch windows.

The guy opposite me leaned over and quietly said that water was leaking in through the side door down his back. We kept this quiet but a couple of people noticed the water slowly rising in the central foot-well. Finally the escape hatch windows were opened and bridging planks pushed across the broken ice to the window and people climbed out one by one. Another Hagglands arrived about an hour later and hauled our stricken machine out onto the ice. We drained out the water and headed home to Scott Base very aware of every bump and lurch! That night we all enjoyed a few beers in the bar re-telling our adventure to everyone and realising just how serious the situation had been. These days, everyone is given a safety briefing before travelling in the haggis and told that they float as long as the doors stay shut!

Passengers of our stricken haggis climbed out the escape hatch window over the planks. Photo by Vanessa Thorn.



VUWAE 48 (2003-04) Matt Wood

For me, field work in Antarctica was a lesson in scale and perspective. I'd never really thought about how important features on our landscape such as buildings and trees are, in defining distances when we look out over a New Zealand vista.

We had set up camp roughly in the centre of the Victoria Lower Glacier. It was time to venture out to the southern valley wall on cross-country skis, to set up a GPS base station on an outcrop of rock. I figured we would be there in 15 minutes, perhaps 20 minutes max.

Two and a half hours later we arrived at the valley wall. Looking back across the icy expanse I could barely discern our camp as a tiny black dot on the featureless white glacier surface. Finally I could appreciate the vast size of the place in which we were working. It was a humbling experience to say the least.

VUWAE 51 (2006-07) Roderick Boys

In December 2006, I was fortunate enough to accompany Nancy Bertler (VUW), Sepp Kipfstuhl (AWI) and Glen Kingan (Webster Drilling) to Mt Erebus Saddle. Our objective was to core ice for a high resolution climate record. This data would extend the proxy data currently available from coastal, low-elevation ice domes in Antarctica and improve regional climate models.

The Erebus Saddle is one of the most hostile places on Ross Island, and tales of extreme 90 knot winds from those who were there the previous year had left me feeling a little anxious about my first Antarctic experience.

However going into the field with such an experienced team soon put my worries at ease. In addition, we had brilliant weather conditions for almost the whole two and a half weeks. Unfortunately, a fault with the drill unit put an early stop to our work, but we succeeded in obtaining 168 m of 'beautiful core' from the target depth of 209 m. This core has now been relocated to the new JARI ice core facility at GNS in Wellington where it awaits further analysis.

The Antarctic experience is one that heightens the awareness concerning the vulnerability of the environment to climate change. Changes in the boundary conditions of the complex climate system reveal themselves as life-affecting changes in this and other vulnerable ecosystems. The urgency for mitigating action and further detailed research into the many faceted problem of climate change is abundantly clear. Climate change is one of the most complex problems humanity has faced, and ice cores are now providing us with an unparalleled account of our climates past.

Nancy Bertler, Sepp Kipfstuhl, Rod Boys and Glen Kingan before departing Erebus Saddle



Then...



VUWAE 6 (1962-63) preparing to head south: Jim Kennett, Charlie Rich, Ian Willis, Tom Haskell, Warwick Prebble, G Smith.

...Now



Women working at ANDRILL drill site in December 2006. Tamsin Falconer (VUWAE), Terry Wilson (USA), Catalina Gebhardt (Germany), Christina Millan (USA), Alissa Quinn (NZ), Colleen Clarke (NZ), Diana Magens (Germany).

