

T H E
GLASGOW ACADEMY

GREENLAND EXPEDITION 2006

PATRON: PETER WORDIE

ABRIDGED REPORT



EXPEDITION LEADER: NEAL GWYNNE FRGS

The Glasgow Academy Greenland Expedition

4th July – 1st August 2006

Patron

Peter Wordie

Leaders

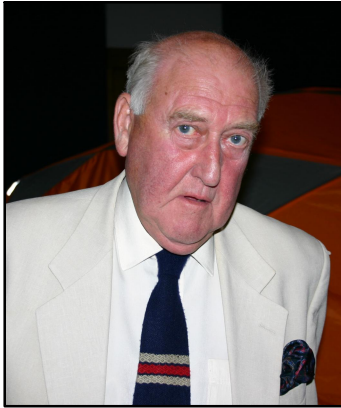
Liz Brookes
Neal Gwynne
Alan Halewood
Nigel Williams

Pupils

Shona Ambrose
Louise Duncan
Rebecca Dunlop
Claire Edmonds
Sophie Fabien
Tom Gentle
Richard Jack
Alan Jardine
Aaron Outhwaite
Iain Smart
Terry Syme
Scott Veitch



FORWARD



Someone once said that visiting the Polar regions was like falling in love for the first time; throughout life one wishes to return. Having read the account of The Glasgow Academy expedition, I am sure that all the party will want to go back and I will be surprised if one or two do not make it.

As one read through their account of the three weeks in their lives, one was struck by the sheer enthusiasm and speed of adaptation, not least to the quality of the mosquito. The photographs brilliantly amplify the account and throughout the humour bubbles up from the pages.

In the course of just under three weeks they managed to climb a series of mountains, including one never climbed before which they have called *Bearsden*. They experienced the stark reality of going down a crevasse where the element of fear is matched by the great beauty of the ice. Although mountaineering was the main focus of the expedition, science had its say with the study of the Greenlandic Seed Bug. Depending on your point of view, they were either fortunate or unfortunate, not to come across a polar bear! The nearest being a skin drying in the village.

All this was made possible by Neal Gwynne and his team. Their preparations and planning were meticulous. These preparations paid off handsomely during their brief expedition by being able to achieve so much in spite of two days' bad weather.

This experience will have surely changed everybody's life and their perception of themselves and others. Altogether a truly inspirational expedition.

Peter Wordie
Expedition Patron

AIM AND OBJECTIVES

Aim To explore a rarely visited Arctic area

Objectives

To climb mountains in the area including first ascents

Milne Land has only ever been visited by a very small number of mountaineering expeditions. This expedition plans to set up a base camp on Charcotgletscher surrounded by many peaks that are unclimbed. Both single day expeditions and short expeditions of two to three days duration to slightly more distant areas can be undertaken from there. These peaks generally involve walking and scrambling.

To collect samples of the Greenlandic Seed Bug

Anecdotal reports and preliminary data suggest that some populations of the Greenlandic Seed Bug (*Nysius groenlandicus*) are composed of a very high proportion of females. This expedition plans to collect specimens of this species using pooters to investigate whether this is the case. Live samples are to be brought back to the UK for a project at the University of Stirling. The project seeks to investigate the extent of these female biases in Greenlandic populations.

To experience Inuit culture

There is an Inuit settlement in Scoresbysund. Two days are to be spent in Ittoqqotoormiit interacting with the local people. The population of around 550 in this town rely on hunting for their livelihood. This will be the only opportunity for pupils to meet Inuit people as Milne Land is not inhabited.

To receive leadership training

The pupils are to receive leadership training both prior to and on the expedition. The intention is for them to complete the syllabus for the Basic Expedition Leader Award. It is hoped that they will gain the necessary mountaineering and leadership skills in order that they can go on to organise and lead their own expeditions in the UK and overseas.



ITINERARY

Date	From	To	Notes
Tue 4/7	Glasgow	Keflavik	Travel pm: Deliver pack to British Embassy
Wed 5/7	Reykjavik	Milne Land	Scheduled flight from Reykjavik Airport @0845. Twin Otter flight x2 from CNP to Milne Land. pm: Training – firearms & comms.
Thu 6/7	Milne Land	Milne Land	Trek to base camp: N 70.44.929 W 26.02.865
Fri 7/7	Milne Land	Milne Land	Continue trek to base camp
Sat 8/7	Milne Land	Milne Land	Complete trek to base camp
Sun 9/7	Milne Land	Milne Land	Rest day
Mon 10/7	Milne Land	Milne Land	Ascent of <i>Cleveden</i> via <i>Braehead</i>
Tue 11/7	Milne Land	Milne Land	Ascent of <i>Adam & Eve</i> , and <i>Bearsden</i>
Wed 12/7	Milne Land	Milne Land	Ascent of <i>Academy Buttress</i> via <i>Wed Morning 6am Gully</i>
Thu 13/7	Milne Land	Milne Land	Training – crevasse rescue & ice climbing
Fri 14/7	Milne Land	Milne Land	Ascent of <i>Witches Peak</i>
Sat 15/7	Milne Land	Milne Land	Rest day due to poor weather
Sun 16/7	Milne Land	Milne Land	At base camp due to poor weather – crevasse lower & ice climbing. Move to advance base camp
Mon 17/7	Milne Land	Milne Land	Ascent of <i>Lucia's Peak</i> and <i>Anna's Peak</i>
Tue 18/7	Milne Land	Milne Land	Attempt at new peak – unsuccessful. Return to base camp
Wed 19/7	Milne Land	Milne Land	Ascent of <i>King Tut's Tooth</i>
Thu 20/7	Milne Land	Milne Land	Ascent of <i>Zippy Goes to Greenland</i>
Fri 21/7	Milne Land	Milne Land	Ascent to plateau of <i>King Tut's Tooth</i> & crevasse lower & rockclimbing
Sat 22/7	Milne Land	Milne Land	Trek to beach camp
Sun 23/7	Milne Land	Milne Land	Trek to beach camp
Mon 24/7	Milne Land	Milne Land	Collection of Greenlandic Seed Bugs
Tue 25/7	Milne Land	Milne Land	Collection of Greenlandic Seed Bugs
Wed 26/7	Milne Land	Ittoqqortoormiit	Milne Land → Constablepynt by Twin Otter Constablepynt → Ittoqqortoormiit by helicopter
Thu 27/7	Ittoqqortoormiit	Ittoqqortoormiit	Exploration of town
Fri 28/7	Ittoqqortoormiit	Ittoqqortoormiit	Exploration of town. Football match against locals
Sat 29/7	Ittoqqortoormiit	Reykjavik	Ittoqqortoormiit → Constablepynt by helicopter Constablepynt → Reykjavik (scheduled flight)
Sun 30/7	Reykjavik	Reykjavik	am: Exploration of Reykjavik pm: Blue Lagoon
Mon 31/7	Reykjavik	Reykjavik	Tour to Geysir & Gullfoss & free time in Reykjavik Expedition meal
Tue 1/8	Keflavik	Glasgow	Travel

EXPEDITION OVERVIEW... PUPILS' PERSPECTIVE

Tied onto a rope, three people attached behind, with hard, crisp snow to break through and crevasses to dodge, the day begins well. The sun is shining; it is 3am. With the vast untouched territory itching to be explored the team are set for an exciting day of unpredictable adventure. The 2006 Glasgow Academy Expedition to Milne Land, East Greenland, was truly a trip like no other.

From the morning that Mr Gwynne abseiled into the assembly hall to tell of a proposed expedition, excitement was high and for the lucky twelve members of the team a year's preparation lay ahead to ensure that sufficient training in all areas of expedition life had been covered. Regular meetings encouraged the group to interact and winter skills training weekends helped to build confidence to provide a strong, enthusiastic expedition team.

Being the first explorers to venture up the glacier the challenges could only be imagined. As each was encountered, every individual was tested: whether leaping crevasses, wading through thunderous torrents of glacial melt water or merely overcoming the deceptively difficult flapjack challenge.

The primary aim of the expedition was to explore the peaks surrounding the Charcotgletscher Glacier and attempt some first ascents. The expedition succeeded in making ascents of twelve peaks including two first ascents. Along with this, the team were striving to develop their leadership skills as young mountaineers which was done with great success. Towards the end of the expedition the pupils walked out of base camp, tied onto their three ropes, to make the second ever ascent of the mountain 'Zippy Goes to Greenland'. It was with a look of trepidation that the four leaders waved us goodbye from their sleeping bags. The team of pupils, now unaccompanied, negotiated all the hazards with tremendous skill and care summiting shortly after 7am: our mountaineering apprenticeship was now truly complete. Mountaineering aside, the trip was used as an opportunity for cultural and scientific research and samples of the Greenlandic Seed Bug were collected for gender tests to be carried out at university level back in Scotland.

To great disappointment for many (and much relief for others) no polar bears were sighted, although the stream hopping lemmings and various arctic birds provided an insight into the wildlife around. The landscape was spectacular with scree covered peaks, topped by ice-filled corries, spreading into crevasse-ridden plains. Sheer ice walls and towering icebergs were encountered frequently and the Greenland ice cap could be seen from the summit of some mountains. It was a privilege and delight to be among the first eyes to view such inspiring and beautiful sights.

A trip to Ittoqqortoormiit, a settlement with a population of only 564, provided an insight into Inuit life. The brightly coloured houses had fish, seal or polar bear skins drying outside as commonly as washing is hung out in Scotland. It was interesting to speak with the residents and learn about their culture. A friendly game of football was enjoyed by the team and the locals on probably the most remote football pitch in the world.

It was a rare opportunity to experience such a trip. The experience was enhanced greatly by the incredibly knowledgeable leader team. The memories made and the friendships gained reflect how absolutely fantastic the adventure was.

SA & CE

MOUNTAINEERING



EXCERPTS FROM THE EXPEDITION DIARY

Sunday 9th July

Looking back, today just kept getting better and better. While the rest of the world was being entertained by the last day at Wimbledon and the World Cup final, all the way over on our own island we had porridge for breakfast and man was it awesome! It's amazing how the little comforts out here make all the difference, as we enjoyed our day of rest. Porridge aside, we were allowed a long lie in, bearing in mind it was only till about 9.30am when we all started to wake up naturally; what a luxury it really was. It didn't stop there, as the majority of us enjoyed the very refreshing washing facilities of the glacial stream, which conveniently runs right by the campsite. There was more relaxing, sunbathing, reading and the odd musical performance by Terry on his harmonica. Not a bad reward for the couple of days of full-on walking it took to get here. Unfortunately we have an early rise tomorrow of 5am but we do have the privilege of hopefully climbing our first virgin peak while we're out here – but that's tomorrow's adventure.

CE

Thursday 20th July

We were all looking forward to today despite the 1.30am start because we were given the task to go and climb a mountain without the leaders. The mountain was called 'Zippy Goes to Greenland' and was right next to base camp. We set out with a view of reaching the summit fairly quickly, roped together in three groups of four. The huge amount of crevasses, however, slowed us down a little, but Rebecca led us well across them to the base of the mountain. The aim was to head up to the left of 'Adam and Eve', but more crevasses caused us to make a detour straight up onto the ridge, with crampons on. The rest of the ridge was fairly straight forward and led us onto the snowy summit, from where we had magnificent views of the glacier below us. I really enjoyed being set free to climb on our own – it felt like we were real mountaineers.

SV

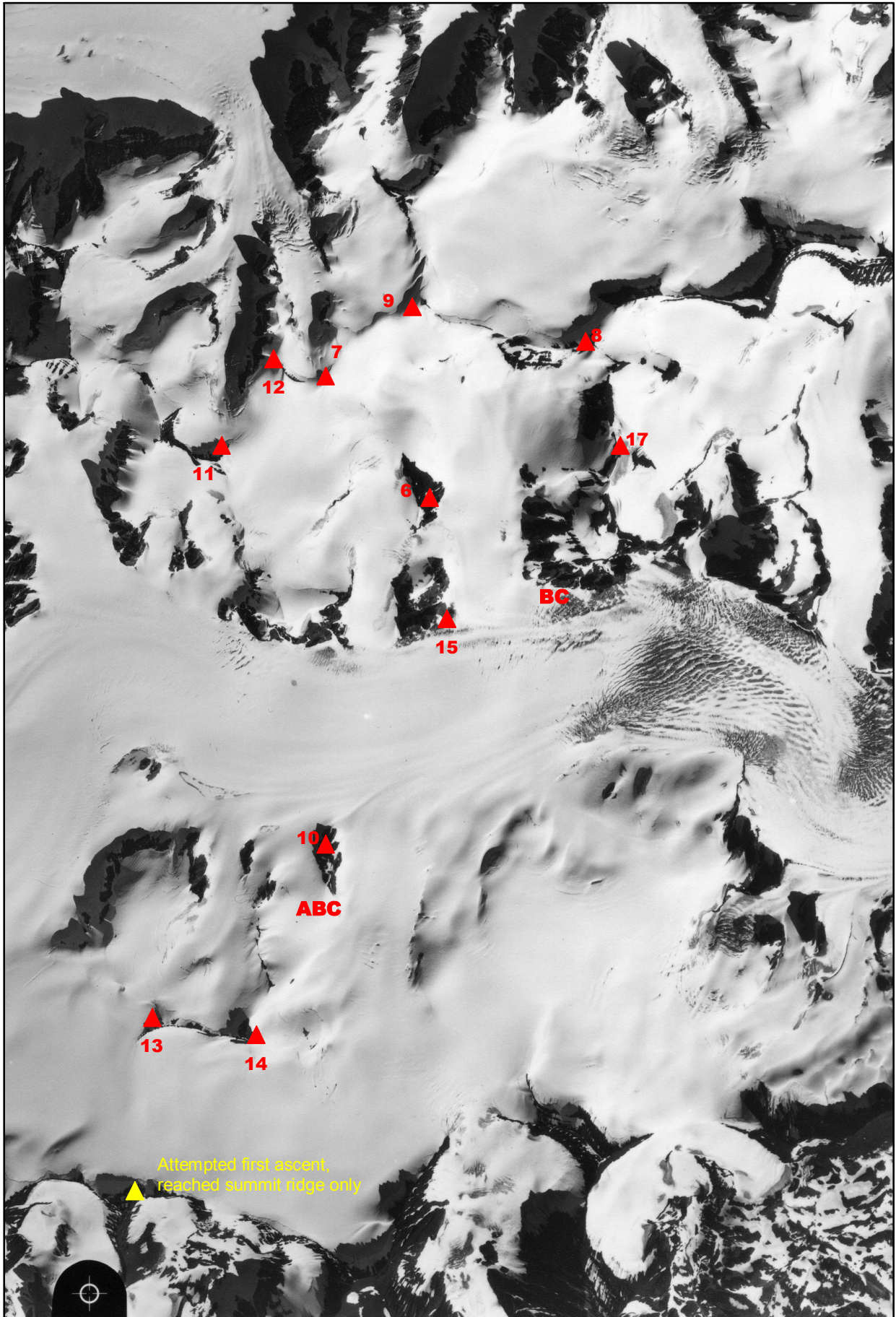


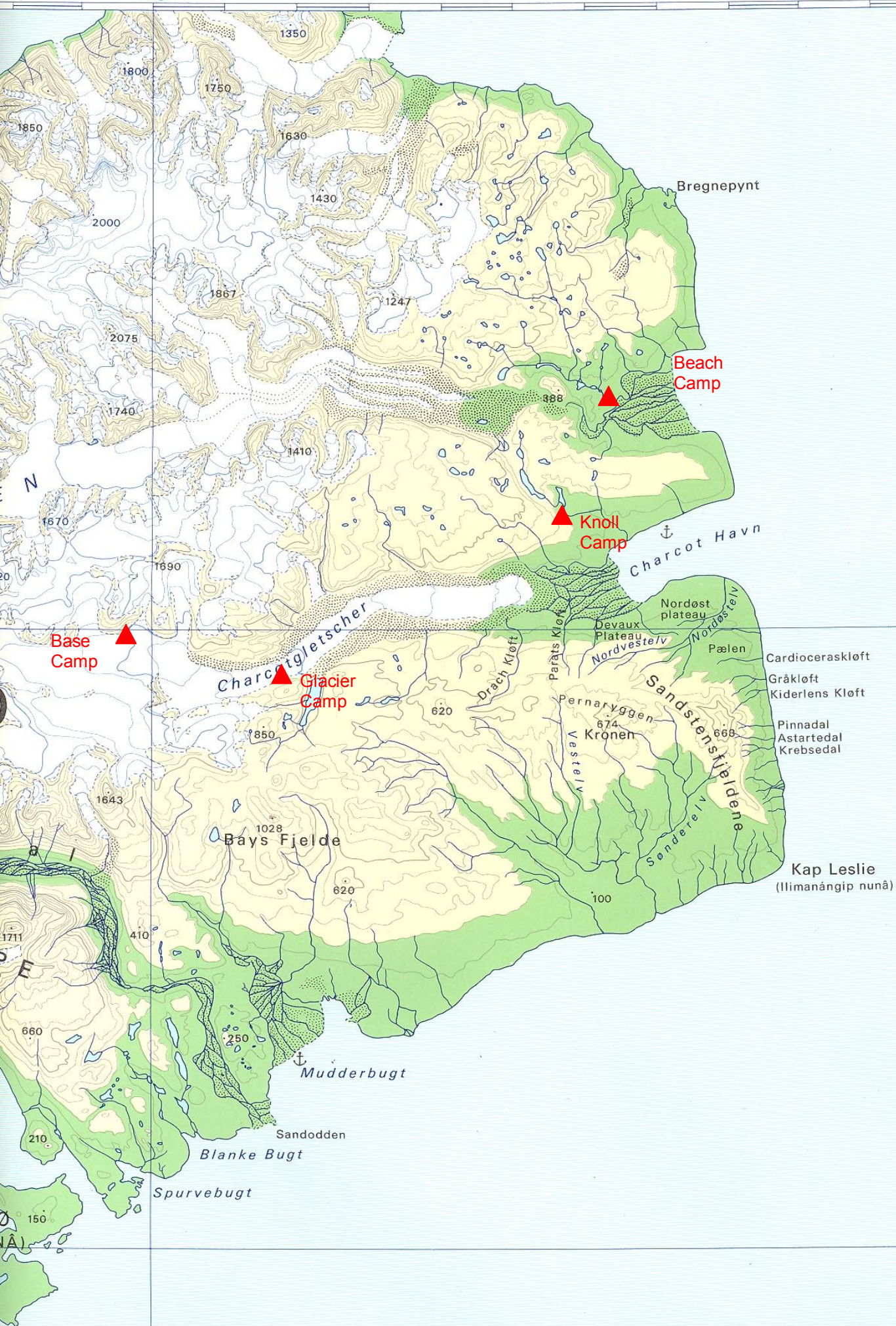
LAT/LONG REFERENCES

Date	Name	Lat/Long	Altitude
5 th July	1 Beach Camp	N70 50.608 W025 26.363	25m
6 th July	2 Knoll Camp	N70 47.239 W025 31.004	252m
7 th July	3 Glacier Camp	N70 44.004 W025 53.237	740m
8 th July	4 Base Camp	N70 44.956 W026 02.890	1200m
16 th July	5 Advanced Base Camp	N70 43.268 W026 06.629	1343m
10 th July	6 This was the rocky bluff / edge: 'Braehead'	N70 45.809 W026 05.257	1660m
10 th July	7 Cleveden (1 st ascent)	N 70 46.287 W026 06.660	1830m
11 th July	8 Adam and Eve	N70 46.387 W026 01.722	1851m
11 th July	9 Bearsden (1 st ascent)	N70 46.711 W026 04.949	1809m
12 th July	10 Wednesday 6am Gully on Academy Buttress	N70 44.957 W026 02.891	1470m
14 th July	11 Witches Peak	N70 45.868 W026 08.612	1873m
14 th July	12 Geoff's Snow Dome	N70 46.302 W026 07.374	1818m
17 th July	13 Lucia Peak	N70 42.749 W026 09.520	1702m
17 th July	14 Anna's Peak	N70 42.648 W026 08.108	1648m
19 th July	15 King Tut's Tooth	N70 44.832 W026 04.911	1391m
19 th July	16 High ground near KTT	N70 44.995 W026 05.211	1346m
20 th July	17 Zippy Goes To Greenland	N70 45.814 W026 01.806	1685m
	18 High point on unnamed peak	N70 41.807 W026 12.269	1766m

NB. The altitudes stated above should be interpreted with caution as it was not possible to re-calibrate altimeters during the expedition.

PEAKS CLIMBED





A landscape photograph showing a calm lake in the middle ground, surrounded by rugged, rocky mountains under a clear blue sky. In the foreground, a reindeer skull with a single antler lies on the ground, which is covered in low-lying vegetation and rocks. The word "SCIENCE" is superimposed in large, bold, black capital letters across the center of the image.

SCIENCE

GREENLANDIC SEED BUGS



Background. There is only one seed bug (member of the family Lygaeidae) in Greenland: that is *Nysius groenlandicus*. *N. groenlandicus* primarily inhabits dry heathland and steppe grassland communities on Greenland's un-glaciated coastal fringe, where it feeds and lays eggs on the seeds of a variety of plant species. Male and female *N. groenlandicus* are clearly sexually dimorphic. Females are larger, abdomen shape differs (the female abdomen is broader relative to body size), abdominal segmentation differs and the genital opening is distinct. In cases of ambiguity, internal genital morphology is completely diagnostic, therefore sexing can be carried out by dissection (this is made especially easy because female *N. groenlandicus* abdomens are packed with eggs during late July).

Sex Ratios. There is a baseline prediction that all organisms will produce equal numbers of males and females. The theoretical and empirical basis of the stability of this equitable male-female sex ratio is well established and dates back to Darwin's writing. However, two anecdotal reports comment that *N. groenlandicus* populations at northern latitudes are predominantly, or solely, female. Mechanisms generating population sex ratio biases are numerous, for example, geographic parthenogenesis and the presence of a male-killing bacteria.

Sampling. The expedition sampled approximately 160 *N. groenlandicus* over two days in late July. All specimens were collected from Moss Campion and specifically Moss Campion from dry, sandy soil at sea level in the vicinity of Beach Camp. All samples were nymphs and it is assumed that the late departure of winter accounts for the delayed maturation of *N. groenlandicus*. Pooters were used to collect specimens and fifteen bugs were stored in ventilated specimen tubes along with a sample of Moss Campion and a small number of sunflower seeds.

Research. Initial analysis indicates that there was not a single male in the samples collected at 70°N on the east coast. Samples collected by Dr Tinsley in the south east found about 2% males and on the west coast it appeared to vary, but the sex ratio was between 50% and 30% males. Breeding studies will permit a definitive test of the parthenogenesis hypothesis. By collecting offspring from individual females the proportion of producing biased sex ratios in the field populations can be investigated. Females will be treated with antibiotics: if the sex ratio of their offspring changes following treatment this will implicate a bacterium in causing the bias. The presence of bacteria can be investigated directly by extracting DNA from specimens and performing diagnostic PCR reactions and sequencing. An Advanced Higher Biology pupil (2006/7) at The Academy will be undertaking DNA analysis of these samples as part of her coursework studies. NG

FLORA

After being on the glacier for just over two weeks we finally crossed the morrain rubble at the snout and walked onto green vegetation – the colour and smells of vegetation have a powerful impact on the senses. Many common UK mountain plants and mosses are in abundance, Dwarf Willows, Crowberry, Saxifrages, Fir Club Moss, etc.

During our time on Milne Land we travelled from beach to high mountain, up to almost 2000m. Even in the most inhospitable places there were always one or two flowers clinging to the rock. The Greenland Poppy, Arctic and Alpine Mouse Ear and Arctic Harebell along with a range of saxifrages were most common.

As expected there was wonderful evidence of primary succession, with lichens and mosses being the most prolific plant life and often supporting saxifrages and other flowers. Snowmelt patches in particular created their own micro climates with abundant and diverse vegetation.

We were in what is described as a high arctic climate. There was little soil to speak of other than sands and moraine left by the glaciers just a short way inland. There were areas of arctic tundra with plants that are seen on places like the Cairngorm Plateau. On the beach itself, lots of Greenland's National Flower, Broad-Leaved Fire Weed and also Moss Campion. The area has a short growing season of about four months through the summer. From October to April / May the area is covered in thick snow. There are seventy-three days of the midnight sun, during this time there seemed to be a narrow temperature range through a twenty-four hour period. The temperature was generally just above zero, no frosts and very low humidity. Forty-three species of flowering plant were identified. Summer was about a month late in coming and this may have reduced the range of flowering plants we observed. NW

LOGISTICS



RATIONS

Rations packs were used throughout all phases of the expedition.

Supplier	Bewell
Cost	£7.95
Weight	750g
Calories	~3500kcal



TRANSPORT

Glasgow International, UK – Keflavik, Iceland

Scheduled flight with Icelandair who also gave expedition members an increased baggage allowance at no charge. Flybus from outside Keflavik Airport to Reykjavik city centre. This bus drops passengers off at selected hotels and the youth hostel/campsite for no charge. Flybus approx £8 pp.

Reykjavik, Iceland – Constablepynt, Greenland

Scheduled flight with Air Iceland. Limited facilities at Constablepynt; however, the airport staff are extremely accommodating and very helpful.

Constablepynt, Greenland – Milne Land, Greenland

Chartered Twin Otter flight with Air Iceland (x 2).

Constablepynt, Greenland – Ittoqqortoormiit, Greenland

Chartered helicopter with Air Greenland. Single ticket price £50. It was the intention to use a boat on the outward journey and the helicopter on return. Due to rough sea conditions it was necessary to use the helicopter both ways. Also used helicopter to transport food, fuel and equipment to base camp prior to the expedition's arrival in Greenland.

ACCOMMODATION

Iceland

The expedition camped in the public campsite at the start and end of the expedition. Up to three instructors/leaders may camp free of charge. Cost approx £6 pppn. It is approximately twenty-five minutes walk to the city centre.

Milne Land

Camping

Ittoqqortoormiit

Four shipping containers have been joined together and made into a bunkhouse-style accommodation unit. Facilities are toilet, shower, kitchen with oven, fridge, freezer, dining room and it sleeps twelve in single rooms although there is space for a number of others to sleep on floor space. Cost approx £25 pppn.

EQUIPMENT

Group

Mountain Hardwear Stronghold (base camp tent)

Iridium satellite phone (2)

VHF radio (2)

Solar panel – large (2)

Solar panel – small (2)

Flares – pencil (2 sets)

Flares – 2 parachute, 2 handheld

red, 2 handheld smoke

0.306 calibre bolt action rifle (2)

Ammunition (60 rounds)

Rifle cleaning kit (2)

Shovel (2)

Ice hammer (2)

Medical kit (2)

Climbing rack (1)



Tent Group/Rope Team Kit

Mountain Hardwear Trango 3.1 or 2

Beal Stinger 9.4mm x 50m

Ice screw (2)

Personal Kit (not provided by individuals)

Petzl Ecrin Roc

Crampons

DMM Cirque ice axe

Sling

Screwgate karabiners (3)

FINANCE

INCOME

Pupil contributions 12@ £3500	£42000.00
Grants	£ 7300.00
Fundraising	£ 1416.65
Personal kit contributions	£ 2736.20
	£53452.85

EXPENDITURE

Travel	£39796.86
Flights Glasgow – Reykjavik	
Flights Reykjavik – Constablepynt	
Twin Otter charter	
Sea freight	
Helicopter charter for glacier dump	
Helicopter charter to Ittoqqortoormiit	
Helicopter charter (extra journey)	
Iceland buses	
Food (inc. expedition meal)	£ 4499.57
Accommodation	
Reykjavik campsite fees	£ 330.83
Ittoqqortoormiit accommodation	£ 1250.00
Equipment	
Medical supplies	£ 139.60
Personal kit order	£ 2954.52
Insurance (BMC)	£ 1914.00
Administration	
Expedition report	£ 864.63
Lectures, presentations, publicity	£ 296.50
Miscellaneous	
Gifts, postcards	£ 105.67
Blue Lagoon	£ 409.00
Satellite phone bill	£ 100.00
Other	£ 80.67
Carried over to next expedition	£ 711.00
	£53452.85

GRANTS

Neal Gwynne was honoured to be awarded a Winston Churchill Fellowship for his leadership of the expedition and the accompanying grant was donated to group funds. The expedition was selected as the A & J Simpson Expedition of 2006 by the Gino Watkins Fund, administered by the University of Cambridge. Grants were also received from The Gordon Foundation, HRH The Duke of Edinburgh, The Mountaineering Council of Scotland, The Royal Scottish Geographical Society and Linton Charitable Trust. The expedition is extremely grateful to all these bodies for their generous support.

EXPEDITION LEADER'S CONCLUSIONS

A team of sixteen explorers completed a highly successful expedition on Milne Land, East Greenland during July 2006. All the expedition objectives (page 6) were achieved and a tremendous adventure was had in process. The expedition made ascents of twelve peaks including two that are expected to be first ascents. Samples of Greenlandic Seed Bugs were collected for the University of Stirling and a current (2006/7) Advanced Higher Biology pupil is undertaking DNA analysis of these samples as part of her studies. Seven of the pupils participated in the Basic Expedition Leader Award and hope to return to The Academy to assist with outdoor education activities in the future. Five pupils completed the expedition section of the Gold Duke of Edinburgh Award.

In my mind, the climax of the expedition was, without any doubt, the 20th of July when the pupils made the unaccompanied ascent of 'Zippy Goes to Greenland'. The team had put in eighteen months preparation for the expedition, but this one day was the culmination of all their outdoor learning from their school career. In a way it was the culmination of everything I've worked towards over the last 10 years teaching in the outdoors. The aim of all education should be to give individuals the skills they need to cope on their own, and then having the courage to give them the freedom to use them. So the 20th of July was an ideal test of what these pupils had learned.

It was quite an emotional day for many reasons and it was hard not to worry as I saw them depart from Base Camp. However, there was nothing more we as leaders could have done in order to prepare them for that ascent – so rationally there was nothing to worry about. Everything came together on that day: we had the perfect group, who had been trained to a high standard by amazing leaders, in an ideal location.

What we asked the pupils to do was fairly unique for a group of British school pupils, but they were the finest group of pupils I have worked with. It was quite an emotional day for the pupils, too. When we met up with them later on the summit, one of them remarked 'I've never been so content in my life.' What more can you ask for?

Many individuals and organisations made this expedition a success. Words can never express the level of my gratitude to the three leaders: Alan, Liz and Nigel. Their incalculable experience, professionalism, unquenchable enthusiasm, dedication to learning in the outdoors and outstanding approach to working with young people is to be so highly admired. My thanks, on behalf of all expedition members and The Academy, is to them for the time that they volunteered away from their partners, families and jobs.

NG



ACKNOWLEDGEMENTS

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Michael Aitchison
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Michael Tucker
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Paul Walker, Tangent Expeditions
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Stirling University
The Glasgow Academy Parents' Association
The Gordon Foundation
The Ice Factor
The Royal Scottish Geographical Society
Tim Ambrose
Winston Churchill Memorial Trust
Young Explorers' Trust

Book sales
Ration packs
Firearms training
Fundraising lecture
Advice
Home contact
Science assistance
Finance
Equipment and facilities
Constablepynt Airport
Finance
Increased baggage allowance
Finance
Loan of polar bear
Insect repellent
Proof reading
Discount on equipment
Finance
Logistics
Expedition Patron
Advice
Science equipment
Purchase of tents
Finance
Use of facilities
Finance
Purchase of fleece jackets
Finance
Approval

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