

90/24

NORTHERN GROUP
GREENLAND EXPEDITION
1990

TRAVELLING AND CLIMBING
IN THE KRONPRINS FREERIK BJERGE
OF EAST GREENLAND

483

Summary Report.

1. Northern Group East Greenland Expedition 1990.
2. Stan Woolley, Rob Ferguson, Iain Campbell, Jim Lowther, Ted Courtenay, Phil Bartlett, Mike Parsons, John Richardson, Dave Woolley.
3. 12 Stowe Avenue, Buckingham, Bucks. MK18 1HX.
4. General Mountaineering in the previously unvisited northern area of the Kronprins Frederik Mountains of East Greenland. Also to look for breeding colonies of the Ivory Gull.
5. July 14 to August 18. Of which 19 July to 15 August were spent in the expedition area.
6. Indifferent weather with a series of depressions bringing snow, high winds, drift and at times rain. Occasional good days.
7. No accidents or illness.
8. Mixed routes. Some fifteen of the areas significant peaks were climbed.
9. £20,000.

WSLW.

Full report will follow.

THE NORTHERN GROUP GREENLAND EXPEDITION 1990

PATRON

Col. Andrew Croft, D.S.O., O.B.E.

Members

Stan Woolley, Leader.

Phil Bartlett.

Iain Campbell.

Ted Courtney.

Rob Ferguson.

Jim Lowther.

Mike Parsons.

John Richardson.

Dave Woolley.

THE NORTHERN GROUP GREENLAND EXPEDITION 1990

General Background to the Expedition.

The Northern Group Greenland Expedition 1990 was conceived as a follow up expedition to the Westminster East Greenland Expedition of 1978. Starting from the coast at Tasilaq Fjord, just north of the K.I.V. Steenstrups Nordre Brae, that expedition had carried out a man haul sledge journey, through the Kronprins Frederik Bjerger, of some two hundred and thirty miles, reaching its most northerly point at 67°54'N., 34° 25'W.

During the 1978 journey the party's two geologists made the first sighting of the Tertiary intrusion near to Kruuse Fjord and the expedition also recorded the breeding sites of Ivory Gulls at places some three degrees of latitude south of their previously known breeding range.

The 1978 Westminster expedition was followed in 1979 by a Durham University party which worked and climbed in the southern part of the Westminster expedition area and by an Edinburgh University expedition in 1982, which did geological work on the Kruuse Fjord intrusion and also climbed in that area.

By 1990 then the southern area of the Kronprins Frederik Bjerger was becoming somewhat better known, particularly because of continuing geological interest, but the northern part, from the furthest north reached by the 1978 Westminster expedition, to a line drawn from Hutchinson Plateau to the peak Redekammen, comprised a belt of country largely unpenetrated save for one notable visit. This was by Deer and Fountaine, members of Lawrence Wager's wintering party on the Skaergaard Peninsula, 1935-36. These two men, travelling with dogs, in the early summer of 1936, had ascended the Frederiksborg Gletscher, on the east side of Kangerdlugssuaq Fjord, and had then made a sweep out on to the Ice Cap to round the head of the Kangerdlugssuaq basin. Coming off the Ice Cap they visited the Gardiner Plateau and the Hutchinson Plateau before calling at Panoramunatakker and then travelling down the Nordre Parallel-gletscher, crossing the lower Hutchinson Gletscher and then returning to Kangerdlugssuaq Fjord by the South Syenite Gletscher.

To the members of the 1978 Westminster expedition, forty two years later, the impressive peaks and glaciers, seen stretching away beyond their most northerly point reached, remained vivid memories and the wish was nursed to return and travel in the region in a future year.

Beyond the region described above, and as already indicated, lies Kangerdlugssuaq Fjord, on the far side of which is the Skaergaard intrusion, where Lawrence Wager did his classic, geological work and where the recent gold finds have attracted much interest. Other intrusions are found on the west side of Kangerdlugssuaq Fjord and it is a matter of regret, to this writer, that the work and journeys of Wager, Deer, Fountaine and the other members of the 1935-36 wintering party, were never published in popular form, so reaching the wider public that was deserved.

Another step northward and one comes to the Watkins Mountains, where Gunnbjornsfjeld, Greenland's highest mountain, has recently been attracting a lot of climbing parties and some controversy. Again no popular account of the first ascent of the peak, in August 1935, by Augustine Courtauld's party, which included Wager and Longland, was ever published.

In Greenland one is always conscious of the work of earlier expeditions and the Northern Group Expedition 1990 had its own links with a number of earlier, modern, summer expeditions. These links took the form of an overlapping membership, which proved to be a source of strength. These earlier expeditions were:

1. The 1972 Westminster expedition which based itself on the Skaergaard Peninsula and the lakes to the west of Sodalen. It made a first ascent of the Mitivagkat in the Lemon Bjerge.
2. The 1974 Westminster expedition which based itself at Tasilaq Fjord and, travelling inland, made first ascents along the northern margins of the K.I.V. Steenstrups Nordre Brae.
3. The 1978 Westminster expedition which has already been referred to.

The 1972 Westminster expedition was conceived at Westminster School and was strongly based on that institution. The linkage was a little weaker in 1974 and greatly diluted in 1978. By 1982, when the writer had left the Common Room at Westminster, it was necessary to change the name of the next expedition and 'Northern Group' was chosen - a term reflective of the continuing interest of members in the Arctic, their tendency to be living in the north of England and perhaps too of a propensity for a growing number of them to be members of the Rucsac Club - a feature that first appeared in 1974.

4. The 1982 Northern Group expedition saw a digression, from the more usual interest in central East Greenland, with this expedition completing an Ice Cap crossing, from a point south of Angmagssalik to Sondre Stromfjord.
5. The 1987 Northern Group expedition comprised a party of four which made the third ascent of Gunnbjornsfjeld, from a base on the coast at Sodalen.

I have traced above the direct line of descent of the 1990 Northern Group expedition. Some members then of the 1990 expedition were well known to each other from earlier expeditions. For example the 1990 expedition included three members of the 1978 expedition, four members of the 1982 expedition and two members of the 1987 expedition.

Not only the direct line of descent is important. Some members joined the above expeditions with invaluable experience gained on other Arctic expeditions and it was good to see this feature continuing in 1990, with Jim Lowther bringing the know-how gained on a two man crossing of the Ice Cap and from membership of the first UK party to climb Mt. Forel, while Phil Bartlett had led an Oxford University expedition to Baffin Island.

The 1990 expedition and the five previous ones have all been fortunate in their Patrons - such men as Andrew Croft, Launcelot Fleming and Alfred Stephenson, all with distinguished Polar records, having given their backing. It seemed particularly appropriate that Andrew Croft should again be Patron in 1990, given that in 1934, with Lindsay and Godfrey, he was the first to sight the inland extent of the Kronprins Frederik Bjerge - this while sledging south after crossing the Ice Cap west to east, to a position from where they were able to fix the position of Greenland's highest mountain, now called Gunnbjornsfjeld.

The programme and planning of the 1990 expedition.

The concept was for a short, summer expedition with its programme dependent for its success upon a fly-in by Twin Otter ski plane to a height of some 1750m. to 2000m., in the western margins of the Kronprins Frederik Bjerge, more or less at the point where the 1978 Westminster expedition had reached its furthest north. In fact we were eventually to land a little higher and a little further west than this at 67°59'N., 34°47'W., but there were advantages to this and it caused no real complications.

The ski plane landing was a matter for some long term negotiations with Sigurdur Adalsteinsson of Flugfelag Nordurlands, Akureyri, Iceland. Photographs taken by the 1978 Westminster expedition, which showed the snow surfaces which might be expected in the general area, in mid August, at 1750m. to 2000m., provided valuable information as to ski landing and take off conditions and were thus helpful in deciding the feasibility of the 1990 proposal. Once plans were agreed the service provided by Flugfelag Nordurlands was not only highly efficient but also impressively thoughtful in its concern to meet the expedition's needs.

The cargo capacity of the ski equipped Twin Otter, at the proposed operating range, was a critical factor, the expedition budget running to two flights in but only one flight out - the one flight out being possible because of the consumption of expedition food and fuel. In the event this worked out well, although we were a little overweight for the flight out, resulting in a somewhat protracted take off!

The expedition budget and the Twin Otter capacity had seemed to indicate to us that the optimum number of expedition members, to minimise cost per head, should be nine. The initial thought was for the nine to break down in the field into three groups of three, each operating in a different part of the expedition area. At a later stage this thinking was modified and the expedition operated in two groups, one a party of four and the other a party of five. The party of four comprised the older members of the expedition and, in general terms, this party stayed a little higher, i.e. nearer to the western margins of the Kronprins Frederik Bjerge, while the younger party of five had a somewhat more wide ranging brief. The maps at the end of the report show the journeys done by the two groups and the peaks they climbed.

The main intention of the expedition was to carry out a programme of general mountaineering, whilst undertaking attractive and challenging journeys through the expedition area. In addition the expedition was hopeful of finding Ivory Gull breeding colonies to add to the known breeding sites in the Kronprins Frederik Bjerge, discovered by the 1978 Westminster expedition. As a further string to our bow we arranged with Dr Geoffrey Halliday, at the University of Lancaster, to collect botanical specimens, although following the experience of the 78 expedition we did not expect to find a great deal of material at the heights at which we would be travelling. We had also been asked by Dr. Kent Brooks of the Institut for Petrologi, Kobenhavns Universitet, to keep our eyes open for geological features, which he specified, and, if the opportunity arose, to collect specimens. Finally the expedition doctor, Iain Campbell, planned to carry out an investigation involving dietary and energy studies.

Expedition Equipment.

The expedition used a variety of dome tents and cooked on Primus, paraffin pressure stoves.

Members of the expedition supplied their own Nordic skis, with several different makes of ski and different types of binding being in evidence. Most members of the expedition had opted for fishscale soles and all members provided themselves with skins, these last getting quite a lot of usage.

The expedition equipped itself with nine pulks - three older ones which were kindly lent to the expedition, one which was privately owned by a member of the expedition and five new ones which were supplied by Snowsled. Roger Daynes of Snowsled was originally to have been a member of the expedition and although, sadly, he had to drop out, Snowsled continued to give the expedition notable help with pulk provision.

Between the members of the expedition there was some fairly wide-ranging experience of both pulks and Nansen sledges. For example the three members of the 1978 Westminster expedition present in the 1990 party had used Nansens in 1978 in essentially the same country, just a little to the south. The general consensus that emerged during the course of the 1990 expedition was that Nansens and pulks each had their good and less attractive points, e.g. Nansen sledges were clearly safer with respect to crevasse dangers and gave an important boost to group morale because a sledge team works as an obvious collective. On the other hand pulks probably had some downhill running advantages and were likely to be cheaper for an expedition budget.

Karrimor had generously supplied each member of the expedition with a large holdall or grip which took each member's personal gear and loaded easily onto the individual's pulk. Additionally Karrimor provided each member with a medium capacity climbing sac for use when skiing and climbing away from camp. This combination of holdall and sac proved to be very successful, meeting our needs nicely.

Weather.

There are reasonable grounds for hoping that an expedition to central, East Greenland, during the summer months, will enjoy spells of settled, high pressure weather. This was not the case in 1990, when the expedition experienced a series of depressions, which brought high winds, fresh snow with quite heavy drifting on the Ice Cap margins and, lower down, rain. We surmised that the Polar Front was lying a little further north than usual this summer and that the depressions we experienced might more typically have passed through the UK., which in 1990 enjoyed a notably good and dry summer.

The expedition's two groups were both inconvenienced by the weather to some extent, particularly perhaps the group of four which, in the early days of field programme, found the drift snow along the edge of the Ice Cap somewhat of a nuisance.

Communications.

No internal radio communication was employed between the two field parties but a radio transceiver was used at fly-in/fly-out base to give the expedition contact with Iceland, via intermediate stations on the Greenland coast, or via aircraft flying overhead. This radio provision was an important feature of the expedition plan, being necessary to keep Flugfelag Nordurlands informed of expedition readiness for pick up at the end of the field programme, together with details of the weather and snow surface conditions for ski landing and take off. Without such information being available in Iceland the pick-up would have been somewhat uncertain. As it was the radio worked well, with Jim Lowther impressing as radio operator, and the expedition pick-up went perfectly. The expedition is grateful to Marconi Radio for making a radio available to the expedition and for the technical help given to enable the expedition to meet its requirements.

Arrangement made with Lewis Jones and the British East Greenland Expedition 1990.

Lewis Jones was keen to carry out a journey through the Kronprins Frederik Bjerge from north to south and an arrangement was made to the benefit of all concerned. Briefly Lewis Jones and Greg Englesfield flew in to our base camp in the Twin Otter that was to take us back to Iceland. They thus contributed toward the cost of this flight - which was a charge to the Northern Group expedition.

On arrival Jones and Englesfield were joined by one of our number, Jim Lowther, the three being companions of previous expeditions, for the journey south. By arrangement they took over three of our Snowsled pulks - again making a contribution toward Northern Group costs. The reduction of the Northern Group number to eight, for the return flight to Iceland, ensured that we were able to meet the cargo weight constraint for the Twin Otter, although our concern to leave no surplus expedition stores behind at base camp site meant that our take off was protracted and interesting.

General comment as to the achievements of the expedition.

The expedition carried out two, highly enjoyable and pioneering journeys through the northern Kronprins Frederik Bjerge. A number of notable first ascents were made and, in spite of weather that was sometimes a little frustrating, the members of the expedition felt general satisfaction with the programme they had completed.

No new breeding sites of ivory gulls were located and this was disappointing, although the negative evidence has its own value. Ivory gulls were sighted on occasion (see journey report Party B) so confirming their continual presence in the general area.

As expected the expedition area proved very barren botanically. A number of lichens and a moss were collected and these are the subject of a report by Dr. Halliday.

Some rock specimens were collected and a sample of the interesting black mineral, found by Party B (see journey report) was sent to Copenhagen. A note from Dr. Kent Brooks will be found on a later page.

For those taking part, the physiological programme proved one of continual interest and Iain Campbell's interim report is included.

Stan Woolley.



Members of the expedition. From left to right.

John Richardson, Rob Ferguson, Ted Courtenay, Jim Lowther, Mike Parsons,
Stan Woolley, Dave Woolley, Phil Bartlett and Iain Campbell.

Mountaineering/Travel Report

Party 'A'

Members: Phil Bartlett, Rob Ferguson, Jim Lowther, Mike Parsons and Dave Woolley.

The primary aim of the group was to achieve a number of successful first ascents of prominent peaks within the northern Kronprins Frederik Bjerge.

Prior to leaving the UK we studied the available maps of the region and a small selection of aerial photos and all agreed that, rather than concentrating on a small area, we would try and combine the climbing with a significant sledge journey, with particular prominent peaks being targets.

It was not possible to finalise our proposed route until landing on the edge of the ice cap. This was for a number of reasons:

1. We landed a little higher and further to the west than originally planned.
2. Clear views from the plane enabled us to identify the most significant and attractive peaks of the area.
3. A number of cols and passes that we may have chosen to use were clearly heavily crevassed and, if not impassable, would have been time consuming and dangerous.
4. We could make a judgement about the extent of the snow cover and the suitability of the surfaces for sledging.

After a discussion, we opted for a circular route with REDEKAMMEN, Point 2555m. 68°12'N., 33°11'W., one of the few named peaks on the map, being the northerly target and Point 2400m., 67°50'N., 34°06'W., the southerly target, this peak being very similar in shape to the Matterhorn. In between these peaks numerous climbing possibilities existed.

We opted to go out to Redekammen by a route that kept high, which we hoped would give us good surfaces for sledging when our loads would be at their heaviest and it would also enable us to make a long descent down the Hutchinson Gletscher.

We landed at 67°59'N., 34°47'W. on 18 July and spent the rest of the day sorting out our equipment.

On 19 July in deteriorating weather the following ascent was made from the base camp site.

PEAK 1 First ascent by Bartlett, Ferguson, Lowther, Parsons and Woolley. Location 67°58'N., 34°43'W. Approx. height 2200m. Ascent via a short SW snow face leading to the summit ridge. Ascent time 1½ hours. Descent ½ hour.

On the following morning the two groups parted company with an agreement to arrive back at the landing site no later than 13 August.

Our first objective was to be the highest peak (2500m.) in a group of mountains to the SE of Panoramunatakker. It took two and a half days of sledging to reach the base of the route.

On the first day, within three hours of leaving the landing site camp, a strong piteraq wind developed. We sledged on for another two hours but were eventually forced to stop and with considerable difficulty erect the tents. We all had the feeling of being "dropped in at the deep end". On previous expeditions there tended to have been a period of 'acclimatization', load carrying up glaciers etc., before facing the type of conditions you encounter on the ice cap.

Facing a strong piteraq on day one made us all realize that we had to quickly organize both as individuals and as a team.

Upon reaching the foot of our route up Point 2500m. we realized again that the weather was closing in so we decided to pitch the tents and then to try and make our ascent before the weather turned too bad. The following are the ascent details.

PEAK 2 First ascent by Bartlett, Ferguson, Lowther, Parsons and Woolley on 23 July 1990. Location 68°09'N., 34°19'W. Approx. height 2500m. Ascent of 230m. via a NW spur of rock and snow from a high corrie glacier presenting possibly the easiest approach to the mountain. The route lay to the left of rocks on an ice slope that opened on to a broad snow ridge that led to the summit. Ascent 3 hours. Descent 2 hours. The spot height given by the map may underestimate the true height owing to this peak's dominance of surrounding mountains.

By the time we returned to the tents at 2.00pm, it was snowing heavily. The snow continued to fall for the rest of the day and the following night. We checked the weather on 23 July at 1.00am., 3.00am. and again at 6.00am. when we decided that the snow was easing off and visibility was improving sufficiently for us to attempt to sledge round to the top of the Hutchinson glacier. All the fresh snow made sledging hard work. Nobly, and what became customarily(!), Jim Lowther took up the lead position breaking trail.

On 24 July we were up at 1.00am. for what was to be our best day's sledge hauling. We covered 21 miles with perfect weather and surfaces, travelling down the Hutchinson glacier through impressive mountain scenery towards the Redekammen range, camping 1 mile short of this.

The next day we moved camp to a position 68°13'N., 33°49'W. that would enable us to split into two groups to look for the most promising route up Redekammen.

Woolley and Ferguson skied underneath the massive SW faces of the range until some large, unstable crevasses prevented further progress. Bartlett, Lowther and Parsons explored high up into a corrie glacier to the west of the main summit. Both parties regrouped at the tent and after some discussion we opted to attempt the route via the corrie glacier, rising at 1.00am. on 27 July. The following are the ascent details.

PEAK 3 First ascent by Bartlett, Ferguson, Lowther, Parsons and Woolley on 26 July 1990. Location: (Redekammen satellite top) 68°12'N., 33°13'W. Approx. height 2400m. Using a steep corrie glacier to the west of the main summit a steep ski of 2½ hours to a prominent col permits a straightforward snow climb of 2¼ hours to the satellite summit (a total of 840m. of ascent from the base camp).

A traverse on mixed rock and ice could be made to a very fine snow arete, which ultimately leads via rock towers to the impressive main summit. An alternative approach to this main summit could be made through the serracs of a glacier below the summit. From the top of the Satellite summit that we had climbed we were rewarded with magnificent views in all directions. Between us and the coast were many fine rock towers and in the far distance the massive peak of Gunnbjornsfjeld could be seen.

We were then left with a dilemma. Should we return for an attempt on the main summit of Redekammen or press on to the next group of peaks on the other side of the Hutchinson glacier? Somewhat reluctantly, we decided to press on and in retrospect it was definitely the

right decision. Had we delayed for another day we would not have been in the right position to take advantage of the breaks in the weather that allowed us to climb another seven peaks.

On the afternoon of 26 July Lowther and Ferguson "flagged" a safe route through a band of crevasses on the NE side of the Hutchinson glacier in preparation for an early morning start the following day.

On 27 July we sledged from 2.00am. to 6.30am. following the flagged route across the Hutchinson glacier. We covered 10km. and camped at location 68°09'N., 33°28'W. near to two peaks, the most westerly one noted on the map as being 2600m. high. After a quick brew we split into two groups to attempt the smaller of the two peaks referred to above. After a couple of hours both parties turned back as the sun was beating down on the snow and ice, making conditions dangerous. All of us were confident that a 2.00am. start the following day would see the peak successfully climbed.

Unfortunately, that afternoon, the weather closed in and for two days, 28 and 29 July, we were tent bound, with snowfalls followed by heavy rain.

We checked the weather at 1.00am. on 30 July and found that the storm had passed with a clear sky spurring us into action. Although a little uncertain how the rain would have affected conditions higher up we decided to climb the peak that we attempted on 26 July before moving on to attempt Point 2600m. The following are the ascent details.

PEAK 4 First ascent by Bartlett, Ferguson, Lowther and Parsons on 30 July 1990. Location 68°08'N., 33°27'W. Approx. height 2130m.

The glacier tongue to the north of the peak was skied in 1 hour to a prominent col on the NE ridge. A straightforward mixed snow and rock climb was then made up the ridge taking a further 1½ hours to the summit. Total ascent 500m.

We were back at the tents at 6.30am., broke camp and sledged for two hours to put ourselves in a good position to attempt Point 2600m. the following day. Bartlett skied on to get a better view of the proposed route up the mountain. He returned having seen an interesting ice couloir that would lead to the summit ridge. With the weather still holding we were up at midnight and the following are the ascent details.

PEAK 5 First ascent by Bartlett, Ferguson, Lowther and Parsons on 31 July 1990. Location 63°07'N., 33°35'W. Approx. height 2600m. Our ascent began on the west ridge which gave access to an interesting, mixed ice couloir. This couloir, after numerous pitches, opened on to the main summit ridge. This was followed over a number of rocky tops, one of which was by-passed on the east face, to a fine rock summit (ascent 700m.). Our descent route followed the main NW ridge to the glacier. This, in retrospect, would have made a far easier ascent route, although not as interesting.

Our next objective was Point 2600m, 67°57'N., 33° 57' W. We sledged for 19km. on 1 August, making our way towards this peak. As we made progress it became clear that the peak we were heading for was not in fact the Point 2600m. referred to above but another peak that did not have a spot height on the map. It also blocked our view of Point 2600m. Once we had worked out the 'lie of the land', we were all of one mind that we would attempt both peaks and if possible a 'trapezium' shaped peak to the NW, Point 2400m.

The peak we had mistakenly identified as Point 2600m. was as impressive and appeared to be as high as any in the area. The following are the ascent details.

PEAK 6 First ascent by Bartlett, Ferguson, Lowther and Parsons on 2 August 1990. Location 67°58'N., 33°50'W. Approx. height 2600m. The ascent was made by the North Ridge from a corrie glacier. The North Ridge splits into two at the bottom and the right hand one of these, a thin snow ridge, was followed to the main North Ridge. The winding snow arete of the main ridge was climbed until a rock tower forced a traverse on steep, mixed ground to the right. Once back on the main ridge a short arete was followed for 50m. to a second rock tower. This was by-passed again on the right by some good mixed climbing, with a notable rock step leading to the main ridge, which was followed to the summit. Descent was by the same route with a 50m. absail over the highest rock tower. Although not given a spot height on the map this mountain was certainly as high as any peak in the area. Ascent 5 hours. Descent 4 hours.

During the descent the weather again started to turn and snow began to fall. It was still snowing when we checked the weather at 1.00am on 3 August. In spite of the poor weather we decided to ski over to the trapezium shaped peak mentioned earlier, Point 2400m, in the hope that the climbing and route finding would not be too difficult. A 3 hour ski saw us at the base of the peak and the following are the ascent details.

PEAK 7 First ascent by Bartlett, Ferguson, Lowther and Woolley on 1 August 1990. Location Point 2400m., 68°01'N., 34°03'W. The mountain was climbed in thick cloud/snow via the south ridge over easy angled rock slabs to the summit. Ascent 2 hours. Descent 1 hour.

A long and tiring ski, still with poor visibility, saw us back at the tents at 12 noon. During the afternoon the weather improved and following a recce by Lowther and Ferguson it was clear that it would be very difficult to attempt the original Point 2600m. from the NE side as it consisted mainly of massive rock walls. On 4 August, on a clear and windy day, we sledged down a steep glacier below the impressive, striped NE face of the mountain. When we turned the corner at the base of the glacier we could see that the heavily glaciated, south side of the mountain would present an easier line of approach for the following day. The following are the ascent details.

PEAK 8 First ascent by Bartlett, Ferguson, Lowther, Parsons and Woolley. D. on 5 August 1990. Location 67°57'N., 33°57'W. Approx height 2600m. Ascent via a corrie glacier to the south of the summit and then by a snow ridge to a large summit with fine views in all directions (total ascent 1150m.). Descent via the same route. Ascent 3 hours. Descent 1 hour.

From the summit we had magnificent views of the 'Matterhorn' peak described earlier in the report. This pyramidal shaped peak had been identified by Stan Woolley's 1978 expedition and is clearly a very attractive mountain. To get to the base of this peak we sledged for 15km. crossing one glacier and finding a perfect col that enabled us to break through a line of peaks on to a second glacier, which we crossed to camp below the 'Matterhorn' peak at 67°51'N., 34° 09'W.

On 7 August we awoke at 1.00am. to settled weather and the following are the ascent details.

PEAK 9 First ascent by Bartlett, Ferguson, Lowther, Parsons and Woolley on 7 August 1990. Location 67°50'N., 34°06'W. Approx. height 2400m. We opted to make our ascent by the attractive West Ridge. The col on the West Ridge was gained via a serac bulge in 1½ hours from the glacier. The Climb then divided into four distinct sections:

- 1 The col was traversed on at times very thin, saddle shaped rocks.
- 2 The ridge then widened into easy angled slabs, broken rocks and some steep rock steps.
- 3 The rock steps eventually forced the route on to the north face which was climbed by an ascending traverse by a mixture of flakes, slabs, and a small snow ramp to underneath the final rock tower below the summit.
- 4 The summit was reached by climbing a steep bulging rock corner. The summit itself is a series of broken blocks where a time capsule was left under a small cairn. Ascent 7 hours, descent by same route involving numerous absails 6 hours.

The climbing time mentioned above does not include skiing to the mountain and time spent on the summit and it was not until 7.00pm. on 7 August that we all arrived back at the tents having been on the go for 17 hours. The next day was declared a rest day and as it was clear and sunny we could relax outside and not have to worry about getting up at the 'death' hour of 1.00am.

Unfortunately, another snow storm arrived late that day and a lot of fresh snow fell, resulting in the following day (9 August) having to be spent in the tents. The fresh snow also transformed our ridge route into a far more serious undertaking.

It was still snowy at 2.00am. on 10 August so we postponed a decision about travelling until 5.00am. when we looked out again. There was a marked improvement in the weather so we broke camp and sledged for 15km. until 12.30pm. to a point at 67°54'N., 34°27'W.

We were now on route back to base camp for our pre-arranged meeting with the other group on 13 August. We felt however that it would be possible to squeeze in one more peak and on 11 August we set out at 1.20am. to attempt a peak mapped as Point 2500m. 67° 53'N., 34°20'W. Snow conditions were poor with a lot of powder snow and, in places, the potential for windslab avalanches. We skied for 2 hours followed by a snow plod for a further hour to a subsidiary summit and decided, because of the conditions, to return to the tent rather than press on to the main summit. By the time we arrived back at 6.30am. it was once again snowing heavily.

On 12 August we sledged on a bearing for about 4 hours covering 9km. in at times near white out conditions. We camped 8km. short of base camp and on 13 August in similar conditions we sledged into camp arriving at 7.00am. to find that the other party had arrived some 12 hours earlier.

It was good to be reunited with the members of the other group and to know that everyone was safe. The day was spent circulating round the six tents of base camp exchanging stories, drinking endless brews and generally preparing for our ski plane pick up on 15 August. On 14 August the following ascent was made.

PEAK 10 First ascent by Bartlett, Campbell, Ferguson, Lowther, Parsons, Richardson and Woolley on 14 August 1990. Location 68° 00'N., 34°46'W. Approx. height 2200m.

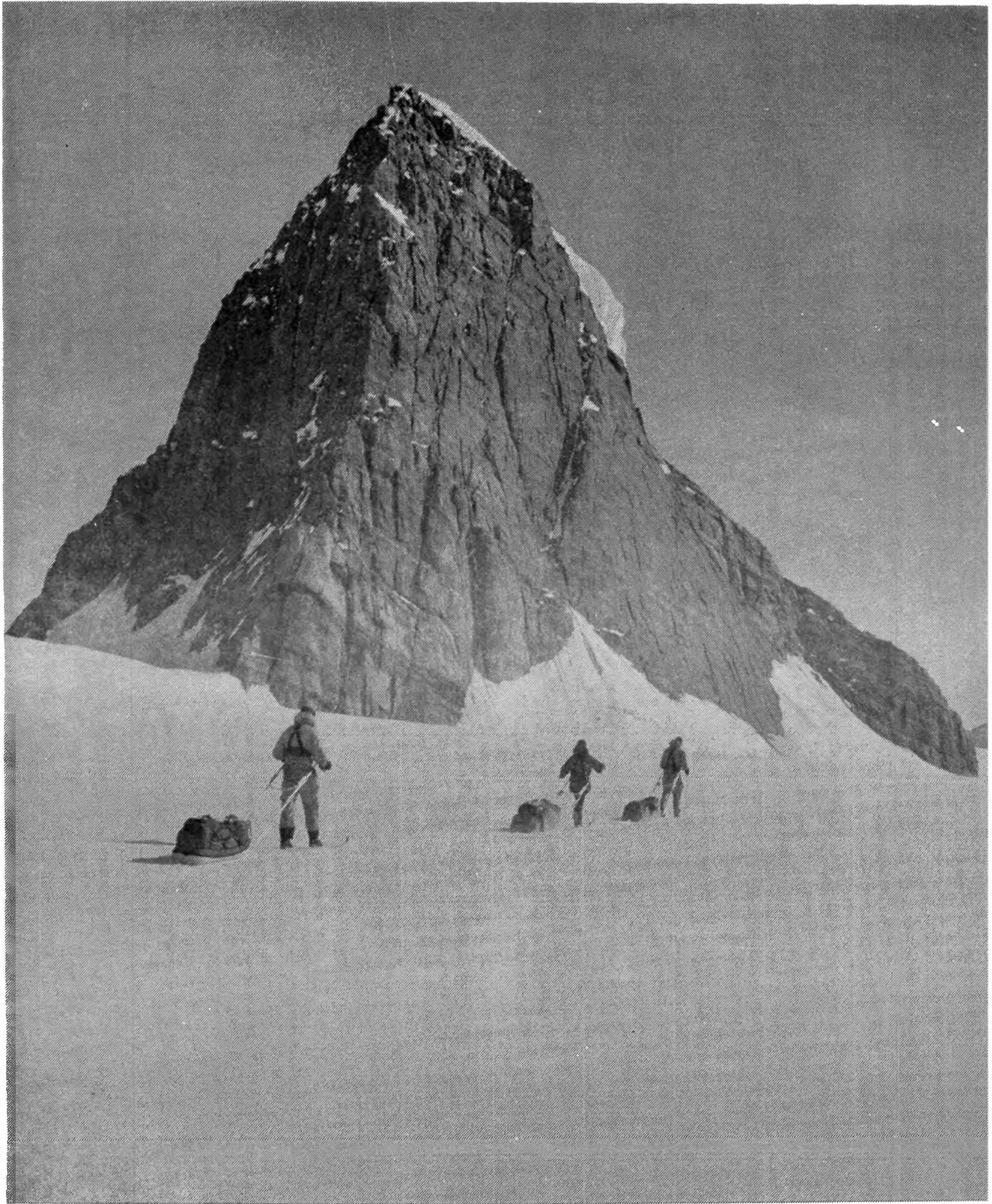
An easy angled snow climb of approx. 450m. up the East ridge led to the summit which afforded good views of the ice cap and the Kronprins Frederik Bjerger.

On the morning of 15 August, with the Twin Otter expected any time after midday, and thus with a time constraint, an ascent was made as follows

PEAK 11 First ascent by Bartlett of Point 2500m., a peak at the NW corner of the landing plateau. Location 67°59'N., 34° 54'W. The spot height for this peak appears to be misplaced on the current map. Ascent on ski by steepening North shoulder than steep, snow ramp to summit ridge. Time forced Richardson and Parsons to turn back at the foot of the snow ramp.

Rob Ferguson.

Jim Lowther.



Pulk party approaching Point 2400m. at 68° 01'N. 34° 03'W

Mountaineering and Travel Report

Party B

The party was composed of Iain Campbell, Ted Courtenay, John Richardson and Stan Woolley. The members of this party were the older members of the expedition and while the group was thus a distinguished one, it is fair to say that its ambitions were not as great as those of Party A! A roughly circular journey was proposed for the group, perhaps staying a little higher up toward the ice cap, as compared to the plans of Party A.

19th July. **PEAK 1. First ascent. Campbell, Courtenay, Richardson & Woolley. Small nunatak at 68°00'N., 34°43'W. Height 2050m. Climbed via east ridge, 150m.**

The two parties A and B each picked a nunatak, local to the fly-in site, to give each group some mountaineering practice. Our chosen nunatak, although small, offered an attractive, sinuous, snow ridge, leading to a pleasing summit.

20th July. The two parties left the fly-in site, in their two different directions, and in unpromising weather. The division of forces, in the early, grey light, struck us all as a significant occasion.

Party B headed uphill toward the inland ice and soon had to put skins on their skis, as the gradient steepened. A strengthening wind began to make things a little unpleasant, as the party reached a col, where it had to negotiate some open crevasses. From the col a long, shallow descent was followed northwards, in worsening conditions of wind and drift, with the cold beginning to make itself felt. The party looked for shelter in the vicinity of a small nunatak but found none and had to camp in the full strength of the gale. Only one of the party's two tents was erected this being deemed sufficient. All were pleased to get inside, albeit a little crowded. Distance travelled six miles.

21st July. **PEAK 2. First ascent. Campbell, Courtenay, Richardson & Woolley. Small nunatak at 68°02'N., 34°51'W. Height approx 2050m. Climbed by south-east ridge.**

This nunatak is located right on the edge of the inland ice and is only just shown, as a minute, brown star, on the current 1:250,000 Danish map. An interesting feature of the nunatak was an outcrop of a black, dense mineral, which we were to see in inaccessible bands on other nunataks. Here we were able to collect specimens.

22nd July. We were away at 12.45am. heading toward Panoramannunatakker, some sixteen miles away in a straight line, although the nature of the terrain dictated a slightly longer route for ourselves.

We began by climbing to the col, to the west of the nunatak climbed yesterday, this being followed by a rope brake descent that was probably excessively cautious. We then had a straightforward day's travel of some twelve miles, although it did include one very steep climb, where we impressed ourselves with our own performance and where, once again, our skins proved their worth.

23rd July. After heavy snow and wind overnight the weather began to clear about 6.00am. and we were able to get away at 9.30am. The going was mainly uphill and in the fresh, wet snow proved very heavy work. After some three and a half miles, in three and a half hours, we camped, thinking that our best plan was to aim for an early start the following morning.

- 24th July. We had to lie-up in conditions of strong wind and drift with occasional fresh snow. The sky above was often blue but the heavy drift from the north ruled out travel.
- 25th July. Another lie-up day as yesterday. This was frustrating and we wondered if the other party, somewhat lower down, was faring any better. We speculated that perhaps they would be less plagued by drift.
- 26th July. A third lie-up day but things did improve significantly in the afternoon and we made an excursion on ski to examine our forward route.
- 27th July. We were away at 1.15am. and camped in the vicinity of Panoramunatakker at 6.00am. with some six miles to our credit. The morning was a cold one but we were pleased to be at Panoramunatakker. After a two hour break we skied to the nunataks of which there are four, along a line running roughly east to west. We confined our attention to the two central nunataks, the eastern one of which is marked on the map as Point 2400m. The western one, of the two central nunataks, is small and gave us just a short, modest scramble to its summit where we enjoyed the view and built a decent sized cairn before skiing on to Point 2400m. This nunatak, on its eastern face, gives an impressive exhibition of banded gneiss. We investigated a snow couloir, which seemed to offer a route to the summit and resolved to tackle the climb tomorrow.
- 28th July. **PEAK 3. Possible first ascent. Campbell, Courtenay, Richardson & Woolley. Point 2400m. Main summit Panoramunatakker at 68° 13'N., 34°27'W. Ascent via snow couloir half way along north-east flank of the nunatak. Couloir leading to a gully containing pitches of hard ice, which we were able to avoid by taking to the rock on the right. Gully giving access to snow ridge which, with one rock step, was followed to summit. A small cairn was built on summit. Descent in conditions of rising wind with some drift.**

The description 'possible' first ascent above is used because of an area of doubt. The Geographical Journal for November 1937 contains an article by Lawrence Wager, 'The Kangerdlugssuaq Region of East Greenland', which describes the work and journeys carried out by Wager's wintering party of 1935/36. On pages 409-410 the text describes the journey carried out by Deer and Fountaine and already referred to in an earlier part of this report. Wager, apparently using an account supplied by Fountaine, relates "we climbed Panorama Nunatak, and enjoyed a superb view".

The name Panorama Nunatak appears on the map that accompanied Wager's article and presumably was the name bestowed on the feature by Deer and Fountaine but the modern map uses the term Panoramunatakker, which we supposed to be plural. It was not therefore clear to us which nunatak Deer and Fountaine had climbed.

We ourselves found Point 2400m. to be a tolerably serious proposition and bearing in mind that Deer and Fountaine were travelling with dogs, which they might be reluctant to leave for too long, and noting that no other climbing activity is referred to during the course of their journey, conjectured that their Panorama Nunatak might have been the small one we visited on 27th July above. This of course might also represent wishful thinking on our part! If following further investigation the first ascent of Point 2400m is established to have been by Deer and Fountaine, the four who did the second ascent will cheerfully applaud their predecessors.

- 29th July. Another lie-up day with wind, drifting snow and little visibility. This was tedious being the fourth such and because we had hoped to climb the most easterly of the four nunataks making up Panoramunatakker, which can be little lower than Point 2400m. We decided that if we were to cross the Hutchinson Glacier, which we wanted to do before turning south, we would have to travel as soon as the weather allowed and thus forego an attempt on the easternmost nunatak.
- 30th July. The wind and drift persisting overnight we could only make a lathish start but nonetheless travelled a useful nine miles to a point about two thirds of the way across the upper Hutchinson Glacier.
- 31st July. Wind and drift again gave us an indifferent night and not until 5.30am did we start digging out. We were then able to complete the crossing of the upper Hutchinson Glacier in rapidly improving weather - camping in a position that would allow an ascent of Point 2300m., a peak at the edge of the Hutchinson Plateau, the following day. Distance travelled six miles.
- 1st August. **PEAK 4. First ascent. Campbell, Courtenay & Richardson. Point 2300m. at 68°19'N., 33°52'W. The peak was approached from the west, ascending to a snow col and then climbing the north ridge to a rocky summit where a small cairn was built.**

For this peak our camp turned out to be a little further to the west than had been anticipated making the ski in to the mountain that much further. The weather was fine throughout.

- 2nd August. We turned south-west and recrossed the upper Hutchinson Glacier, finding ourselves for the first time on a really hard fast surface. In the early part of the day, with cloud obscuring some of the peaks ahead of us, we were a little uncertain as to our position, but doubt was removed as we approached and broke through the features on the south side of the upper glacier. Distance travelled eleven miles.
- 3rd August. A windy dawn with poor visibility delayed our start until the afternoon when we travelled for two hours until brought to a halt by soft surfaces. A visit to a small nunatak, local to our camp site, confirmed that the rock was still banded gneiss.
- 4th August. We had a useful day covering some eleven miles, initially with a cold tail wind, to eventually camp at the south-west corner of Point 2400m. at 68°01'N., 34°04'W., which we decided to attempt the next day. Point 2400m. had increasingly dominated our view as we travelled south, being an impressive, monolithic, rock tower (see photo) when viewed from the north. Party A in its report refers to the peak as 'trapezium'.
- 5th August. **PEAK 5. First ascent. Campbell, Courtenay, Richardson & Woolley. Minor peak at 68°00'N., 34°05'W. Height approx 2100m. Climbed via north- east ridge. We built a cairn on the summit which we were pleased to see, on subsequent days, stood out well when looking back from the west.**

We set out on 5th August to attempt Point 2400m. and got ourselves onto the rock, only to discover in so doing that Party A, or a section of Party A, had attempted the climb already, perhaps only the previous day. Feeling fairly sure that Party A would have been successful we decided not to repeat the climb but to content ourselves with the excursion already described above.

6th August. **PEAK 6. First ascent. Campbell, Courtenay, Richardson & Woolley. Northernmost peak, at 68°04'N., 33°57'W., of a line of three peaks running south-east to north-west. Height 2300m. Climbed by south-east ridge to an elegant, rocky summit.**

We left our tents at 4.00am. intending to climb the middle peak of the line of three peaks referred to above. Shortly after leaving the tents the wind blew up strongly and we had to work hard to progress against it. This made the prospects for the climb a little dubious but as we ascended to the snow col, between the centre and northern peaks, we climbed out of the wind and then, surveying our prospects, we decided that the northern peak was the more attractive proposition. After the climb we returned to the tents so as to complete a circumnavigation of Point 2400m., the round trip being some nine miles.

7th August. Away at 5.00am., in initially cold and windy conditions, for a pleasant and at times exciting downhill run of some six miles to the west- south-west, with Richardson out in front giving us a good lead. These six miles gave us our fastest pulk skiing of the whole journey. The downhill run over we had to negotiate an area of major, open crevasses, in a wide basin where three glacier streams merged, before turning southwards and tackling a steep climb into a large, open corrie, facing north under Point 2500m. Distance travelled twelve miles.

After we had camped we were delighted to see ivory gulls flying overhead and seemingly curious as to our presence. We surmised that these birds came from the colony just a few miles to the south of our position and discovered by the 1978 expedition.

8th August. **PEAK 7. First ascent. Campbell, Courtenay, Richardson & Woolley. Westernmost peak, at 67°57'N., 34°28'W., of three prominent, rocky peaks of which the centre one is Point 2500m. Climbed from north-west on snow and then by south-west facing, steep snow face.**

This enjoyable and successful day was the brainchild of Richardson who suggested that we should circumnavigate the group of three peaks on ski. This we did tackling the westernmost peak en route. A considerable height loss was involved in negotiating the southern side of these three peaks and the final climb back up to the campsite, via a south-facing pass, proved a thirst provoking exercise.

9th August. Lie-up with white out conditions and some seven inches of fresh snow.

10th August. **PEAK 8. First ascent. Campbell & Richardson. Prominent rock and snow peak at 67°58'N., 34°24'W., conspicuous at northern end of snow ridge overlooking ice fall on glacier. Climbed by crossing bergschrund on north- west face and climbing steep snow and ice to southern limit of exposed rock. Then three rope lengths to ridge and follow ridge, becoming steeper and narrower, to summit.**

The day began with poor visibility and semi white out. We contented ourselves with building a cairn on a conspicuous knoll in the centre of the corrie. After lunch the weather cleared to give us an idyllic afternoon. Courtenay and Woolley went out on ski to prospect the route down and out of the corrie that the party would be taking on the next day. Campbell and Richardson exerted themselves to impressive effect on the peak forming the eastern arm of the corrie.

11th August. Away at 5.30am., down hill from the corrie and then out across the glacier heading north-north-west. Closing the land on the north side of the glacier we got ourselves involved in an area of heavy crevassing from which it took us a little while to extract ourselves. We camped in conditions of changing weather, with wind and snow coming in. We heard ivory gulls in the vicinity of the tent during the day but did not see them.

12th August. We had had our eyes on Point 2200m., a peak some three miles to the north-east of our campsite, but a morning of low visibility with fresh snow did not encourage us and after waiting until midday we then decided to make tracks for the landing site. Shortly after starting the weather cleared beautifully and thus encouraged we set about the up-hill grind of some seven miles, with a determination that was certainly needed given the increasing propensity of the snow to stick to the bottom of the pulks as the day wore on. The landing site depot proved to be in good order, as we had left it, and we were all pleased to see it again although also sad that a memorable journey had come to an end.

13th August. Party A returned in the early morning and it was good to see their safe arrival in camp and to hear of the very successful climbing programme which had been completed.

14th and 15th August. Members of the expedition made two ascents of peaks local to the base camp area. For convenience, these ascents are described at the end of Party A's report.

John Richardson.

Stan Woolley.

PHYSIOLOGICAL PROGRAMME

Changes in Body Composition on Sledging Journeys.

A number of studies have shown marked weight losses on sledging journeys (Orr 1965, Easty 1967, Campbell 1981). The precise reasons are not known. It has been assumed that the loss of weight has been largely adipose tissue and that lean body mass (LBM) or fat free mass (40% of which is skeletal muscle) has remained the same or increased. This would seem a reasonable assumption as muscle mass is generally considered to increase with exercise and activity although the precise relationship between the two has not been defined (Astrand and Rodahl 1977). Measurements of changes in body mass and body composition on sledge journeys have however been made only using skinfold thickness and body weight. The errors ensuing from this technique are in general as large as the changes being looked for; the calculations of lean body mass from skinfold assume relationships between skinfold and body density and between body density and % fat/%LBM. It has therefore not been possible to determine definitively whether lean body mass goes up, down or remains the same, or what the relationship is between level of activity and energy balance and any change in muscle mass.

The basis of the physiological programme was to combine well established techniques of measuring energy intake and expenditure (Passmore and Durnin 1967) with more comprehensive and more precise methods of measuring body composition than have been used hitherto. An attempt to measure changes in work capacity had to be abandoned when apparatus that had been recently acquired failed to function.

Methods.

A one week dietary history was taken from all the members of the Expedition prior to going and an attempt made to assess their 'habitual activity' level by interview. They were weighed, skinfold measurements made at 4 sites - biceps, triceps, suprailiac and subscapular - mid upper arm circumference and mid thigh circumference were measured and naturally occurring potassium-40 measured in a total body counter. This is an index of lean body mass and while not providing a very accurate measure of lean body mass it does provide a relatively precise one. It is thus possible to look accurately at relative changes in LBM. Energy expenditure was measured over the whole trip using diary cards and literature values for the energy cost of the various activities (Acheson et al 1981). Food (and thus energy) intake was measured for 3 days the first week of the journey and for 3 days the last week. Body weight was measured on arrival back in Iceland and all the measurements were repeated 2 days after return to the U.K. When the results have been analysed they will be submitted to an appropriate scientific journal for publication.

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Iain Campbell.

Botanical Report.

For nearly 30 years I have been accumulating data on the nunatak flora of southeast Greenland. The major collections nearest to the area visited by the present Expedition were from nunataks to the east above the south-west side of Kangerdlugssuaq. These were visited by the Wagers on the British East Greenland Expedition 1935-36. However their highest collection was from only 1400m. Although Fountaine and Deer, of the same expedition, visited, and named, Panorama Nunatak their visit was on a spring sledging expedition and no collections were made.

During the 1990 expedition John Richardson collected at three sites:

- 1 Panoramannunataker 68°13'N., 34°28'W. 2300m.
- 2 Unnamed nunataker 28 km. to the S.E., 68°04'N., 33°57'W. 2300m.
- 3 Unnamed nunataker 30 km. to the S.S.E., 68°00'N., 34°05'W. 2150m.

He found no flowering plants, one moss and four lichens	Locality
Moss	
Grimmia doniana (sterile).	2,3
Lichens (identified by Dr. E. Steen Hansen)	
Acarospora chlorophana.	1
Pseudephebe minuscula.	3
Umbilicaria virginis.	3
Unidentified.	1

These are all frequent species in Greenland occurring over a wide altitudinal range. The three lichens were also collected on nunataks during the 1978 Westminster East Greenland Expedition (Report p.12) from 25 - 70km. to the south.

The absence of flowering plants is not surprising since the altitudinal limit around Kangerdlugssuaq appears to be about 2100m., although 13 species were noted by the 1974 Westminster Expedition (Report p.15) at 2150m. some 110km. to the south at 67°N.

*G. Halliday,
Lancaster University.*

Geological Note.

The sample submitted is a metamorphic rock – an amphibolite, composed of hornblende. It is probably from a precambrian dyke which has gone through the metamorphism which affected this area 3000 million years ago.

*Kent Brooks,
Institut for Petrologi, Kobenhavns Universitet.*

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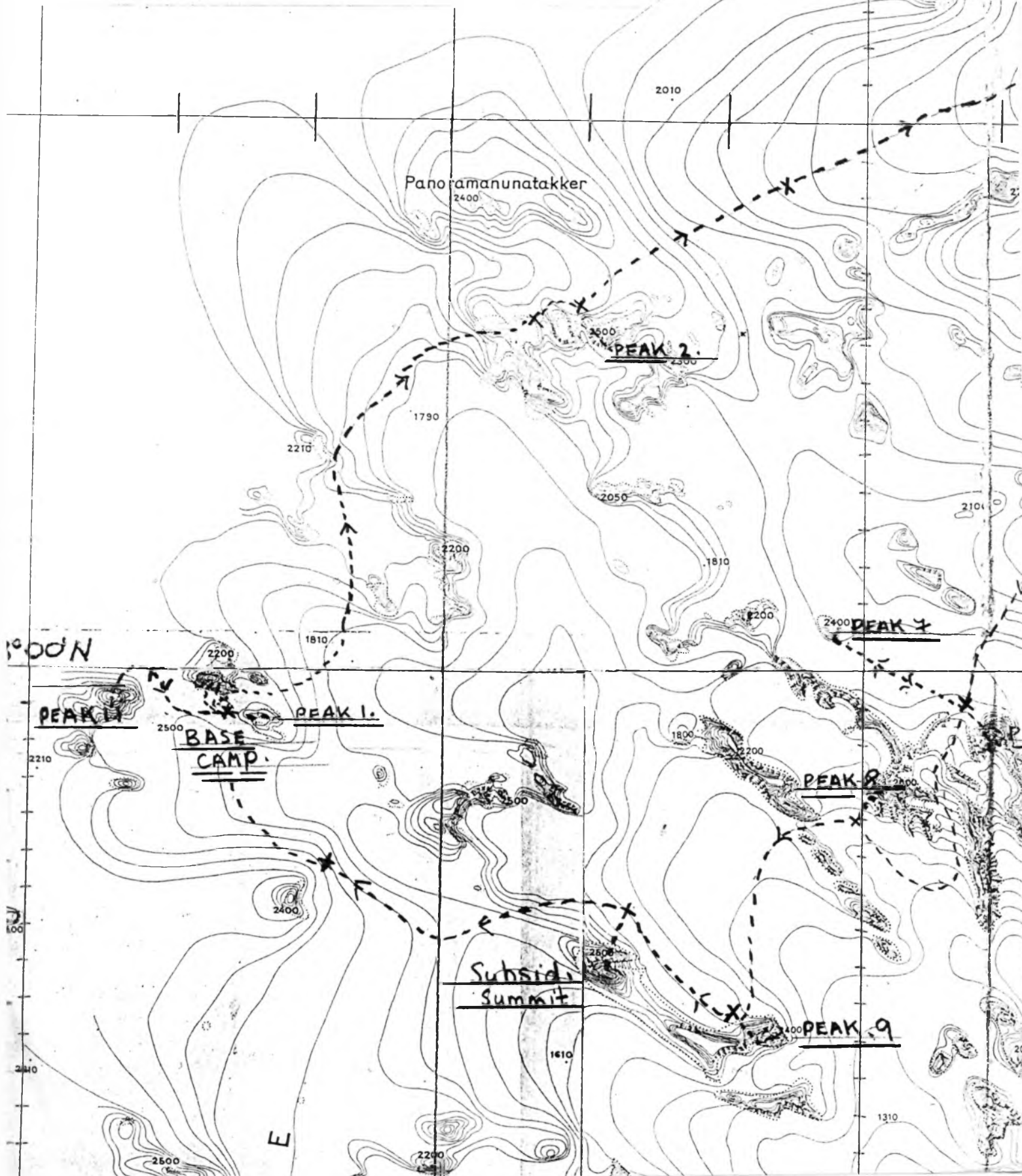
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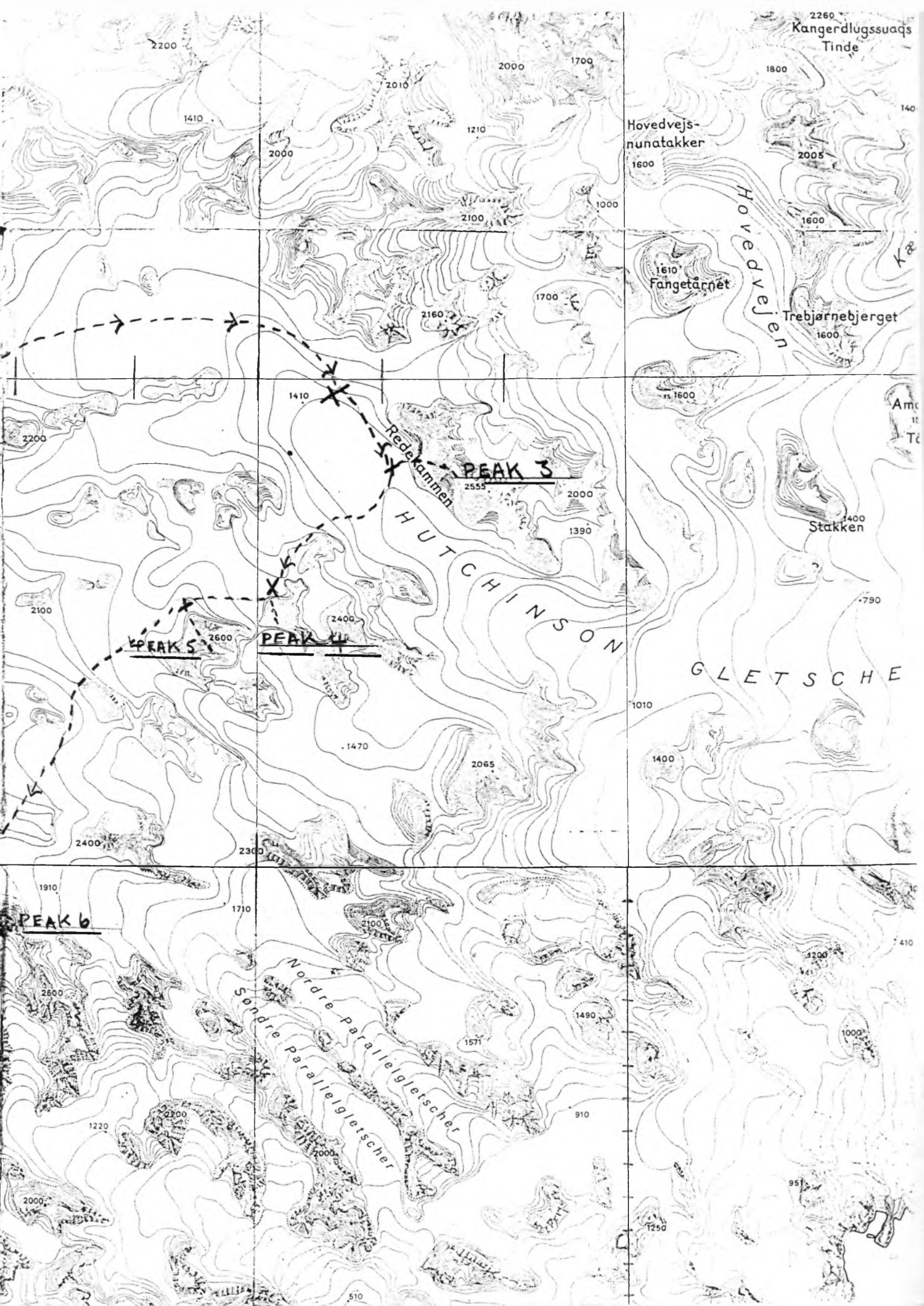
East Greenland Expedition 1990.

Party A.

Scale 1:1250,000.

Camp sites X.





Northern Group

East Greenland Expedition 1990.

Party B.

Camp sites x. Scale 1:250,000.

Hutchinson
Plateau

